



SZABIST

Shaheed Zulfikar Ali Bhutto
Institute of Science & Technology
KARACHI CAMPUS

Course Catalogue 2017



We Just Don't Work Hard
We Work Smart



MBA BE Mechatronics EMBA BS Biosciences BBA
BA Ph.D LLB MBA BS Social Sciences MS Computing LLE
MS Media Sciences BS Computing MS Management Sciences Ph.D BE Mechatronic
BBA BS Computing BS Media Sciences BBA
BS Media Sciences Business Studies (BABS) MS Media Sciences
MBA BBAMBA Banking and Finance EMBA Ph.D
MS Computing
BS Biosciences BS Social Sciences BS Bioscienc
MBA BS Social Sciences BE Mechatronics MBA Banking and Finance
BBA Business Studies (BABS) BS Media Sciences EMBA

Course Catalogue 2017

BS Social Sciences BBA BE Mechatronics MS Computing LLB
EMBA Ph.D MBA BS Media Sciences BS Social Sciences
LLB MBA BE Mechatronics EMBA BS Biosciences
MS Media Sciences LLB BS Computing Ph.D BE Mechatroni
BBA BS Computing BB/
BS Media Sciences Business Studies (BABS) S Media Sciences
MBA BBA MBA Banking and Finance EMBA Ph.D
Business Studies (BABS) LLB BS Biosciences MS Computing

The Vision

SZABIST aims to be a globally recognized institute for excellence in education, research, development, and distinction in service.

The Mission

SZABIST is committed to produce highly qualified professionals to:

- Meet national and global contemporary needs;
- Conduct cutting edge research and development;
- Provide hi-tech scientific and technological expertise;
- Meet current and future socio-economic challenges;
- Meet global citizenship responsibility.

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About SZABIST

Shaheed Mohtarma Benazir Bhutto, the first woman Prime Minister of a Muslim country and twice elected Prime Minister of Pakistan founded SZABIST in 1989 to realize the vision of her father, former elected prime minister of Pakistan, Shaheed Zulfikar Ali Bhutto. In his speech at the inauguration ceremony of the Karachi Nuclear Power Plant in 1972, he stated:

“We will give science and technology requirements the highest priority and our attention. To implement any program of scientific and technological development, the country needs to train scientific manpower. In this, the schools, colleges and universities have to play their role. I desire that vast number of people of Pakistan should acquire technological skills. I want first-class science in Pakistan because nothing less is acceptable. And I wish Pakistan to be increasingly self-reliant in all aspects of technology”.

It was in pursuit of this dream that SZABIST was established.

In its first academic year, 1995, SZABIST commenced studies by offering only two degrees i.e. MS in Software Engineering and Master of Business Administration with only 96 students. Since then, SZABIST has made tremendous progress and now offers programs in the disciplines of Management Sciences, Computer Science, Social Sciences, Media Sciences, Law, Mechatronics Engineering, Biosciences, Public Health and Education.

SZABIST has five full-fledged university campuses; Karachi, Islamabad, Larkana, Hyderabad and Dubai, which makes it the only degree granting institution in Pakistan with an international presence.

Pursuit of research is an integral part any educational institutions' life. In this regard, SZABIST pioneered Pakistan's first online research journal, Journal of Independent Studies and Research (JISR) in 2003. In 2009, SZABIST re-dedicated itself to its mission of research and development in science and technology with a number of new initiatives. These are focused on realizing the country's research potential, and developing long-term self-sufficiency in critical areas of energy, biomedicine, and technology.

Reflecting its dedication to excellence, SZABIST continues to grow and prosper as a top ranked institution of higher education. This is a singular achievement for an institution, which relies solely on its own resources, and it certainly augurs well for its future.

Message by the Chancellor



I am pleased to welcome you all to Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST), a multidisciplinary institution ranked amongst the top universities of Pakistan because of its graduates employability, proficient faculty, competent staff and quality tertiary education.

Over the last 22 years, the institute has gained recognition nationally and internationally due to the holistic and market-relevant programs supplementing the academic, social, professional, and creative needs of its students. Further, in line with our commitment to provide contemporary tertiary level education the courses offered at SZABIST are regularly updated according to the market requirement

and are fully compatible with the guidelines of the Higher Education Commission (HEC) of Pakistan.

The Course Catalogue 2017 has been designed for enhancing students understanding of the offered courses as it contains detailed and standardized description of courses in Management Sciences, Computer Science, Social Sciences, Media Sciences, Mechatronics, Biosciences, Public Health, Education and Law programs. The document will help students in understanding the respective degree completion requirements; it also represents a range of elective courses. In addition, the Course Catalogue will assist Program Managers in guiding students to successfully complete their respective degree requirements.

I wish the students the very best for their academic life at SZABIST and urge them to follow the SZABIST motto, "Discover Yourself" to become the leaders of tomorrow.

Dr. Azra Fazal Pechuho
Chancellor,
SZABIST



Message by the President



Welcome to SZABIST! I congratulate you on being selected at SZABIST, a highly rated Business and Technological institute with a tradition of producing high quality corporate leaders.

At SZABIST, the Board of Trustees, Management, Faculty and Staff are committed to impart professionally enriching, market-related, and socially beneficial skills through affordable high quality tertiary education. We believe your education is vital, not just for your future, but for the future of our community and economy.

In order to assist you for successful and timely completion of studies a comprehensive Course Catalogue 2017 with streamlined academic curricula has been produced. The document consists of standardized course descriptions of the each course along with the details of the programs offered in each discipline. This standardization would enhance, strengthen and consolidate the standard of education across all SZABIST campuses and bring it at par with national and international universities.

This Catalogue is one more indicator of SZABIST's growth into a mature institution, as it now offers thirty diversified disciplines in Management Sciences, Computing, Social Sciences, Media Sciences, Mechatronics Engineering, Biosciences, Education and its International Programs including LLB (University of London, UK) and BA (Hons.) in Business Studies which has a continuing collaboration with universities in UK.

I thank the staff members of Institutional Research Department, in particular Ms. Faryal Shahabuddin for collaborating with the Program Managers to prepare this Catalogue and the Marketing Department, especially Mr. Bashir Ahmad, for his work in the design of the Catalogue.

I wish you a productive, intellectually stimulating, and socially responsible journey at SZABIST.

Best of luck!

Ms. Shahnaz Wazir Ali
President,
SZABIST

Message by the Vice President (Academics)



Congratulations on becoming a part of SZABIST family! The institution relishes a high reputation thorough the courtesy of its professional environment and dedication for imparting quality education. The institution has crossed 21 plus years of its existence. Its exponential growth speaks itself of its popularity. It is fully recognized by all the national regulatory bodies, such as HEC, PEC, NCEAC, NBEAC, NACTE, CIEC (Sindh). In addition, SZABIST is a member of several international associations, such as International Association of Universities (IAU) Paris, Association of Commonwealth Universities (ACU) London, Association of Advance Collegiate School of Business (AACSB) Singapore, Asia University Federation Seoul, Asia-Pacific Quality Network (APQN) China, Association of Quality Assurance Agencies of the Islamic World (AQAAIW) Malaysia,

Tallories Network Massachusetts, etc.

The institution prepares students in diversified areas of learning, such as Management Sciences, Computer Science, Media Sciences, Bio-Sciences, Social Sciences, Mechatronic Engineering, Law and Education. Through the meticulous program and course learning outcomes students' develop critical and creative thinking, and acquire problem-solving skills. We understand, "University without Research" is tantamount to "Body without Soul." That is why we give high priority to research seminars and encourage our students to write research articles at every stage.

Counseling and providing guidance to youngsters holds great significance, therefore, SZABIST provides its students a point of reference at every step during their course of studies and beyond. Some of the most important guiding steps are: Program Managers, Prospectus, Students Handbook, Course Catalogue, Executive Development Centre (EDC), External Relation and Financial Assistance (ERFA) and the like.

The Course Catalogue 2017 is prepared and shared to increase students' awareness on SZABIST's offering. The catalogue is a continuous point of reference for students as it consists of detailed and standardized descriptions of core courses being offered at SZABIST along with the range of elective courses and degree completion requirements. Further, EDC looks after the job placements and builds linkages with alumni. That's why our alumni are our face value.

Our strength is our ERP, developed by our own software house. We fully make use of modern IT tools in teaching and managing our academics and ensure quality education through ongoing and systematic assessments throughout the semesters. Our QEC has been awarded 94% score by QAA/HEC.

Finally, we believe in building personalities, not merely producing degree-holders. This we ensure through conducting seminars and guest lectures frequently by eminent personalities, through our students' societies, which are responsible to arrange co-curricular and extra-curricular activities round the year.

Please go through the Course Catalogue 2017 to understand all the required offerings of your respective program. I assure you that you will be groomed and nurtured for meeting your future career challenges after completion of your academic degree program.

Professor Dr. M. Altaf Mukati
Vice President (Academics)
SZABIST

Message by the Vice President Administration & Finance



Welcome to SZABIST and congratulations on being selected at one of the top ranked higher education institutes of Pakistan.

The Course Catalogue 2016 is a compendium of the courses being offered at SZABIST. I am confident that it will serve as a useful resource to broaden your knowledge and develop deeper understanding of the courses taught by our renowned faculty.

At SZABIST, we provide you the skills, ethical values and facilities to make you highly valued professionals.

Focus on your goals and study hard to reach where you want to be.

Best wishes for a successful year!

Ms. Nasreen Haque

Vice President (Administration & Finance)
SZABIST

Preface

The Course Catalogue provides a platform for the students of SZABIST to avail in advance information relevant to their respective program course requirements.

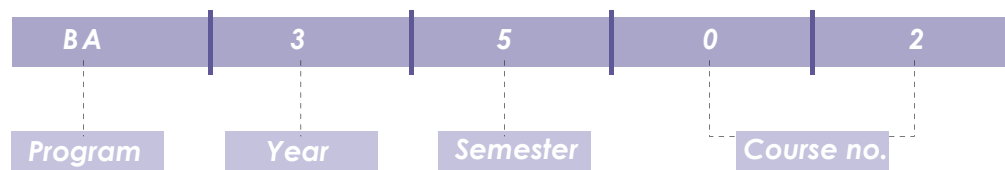
This Catalogue covers the core and/or compulsory courses for all the programs, offered in the following seven faculties:

- Management Sciences**
- Computer Sciences**
- Social Sciences**
- Media Sciences**
- Mechatronics Engineering**
- Biosciences**
- Education**
- External Programs**

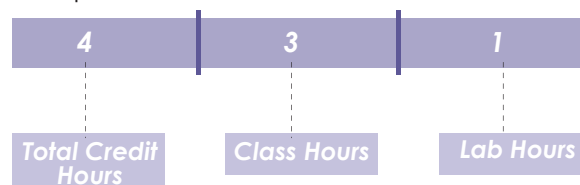
It provides information on the course credits, prerequisites (if any), course descriptions, and finally the equivalent courses. The students should consult the catalogue before registering for courses on ZabDesk.

Regardless of the academic program, this Catalogue will serve as a guidebook for students throughout their educational term at SZABIST. With the course descriptions, course titles and prerequisites mentioned, the student would easily be able to plan their semesters beforehand.

The courses in each program have been identified by their respective course codes. Therefore, the following course code illustration would assist the students in identifying the courses for a particular semester.



In addition, the composition of the Course Credit Hours is as follows:



Please note that in case of Law Program and a few courses in other programs, identification of courses for a particular semester by their codes may not apply.

Acronyms

BA	<i>Business Administration</i>
BABS	<i>Bachelor of Arts in Business Administration</i>
BBA	<i>Bachelor of Business Administration</i>
BBS	<i>Bachelor of Business Studies (BBS)</i>
B&F	<i>Banking & Finance</i>
BMS	<i>Bachelor of Media Science</i>
BS A&F	<i>Bachelor of Science in Accounting & Finance</i>
BS (Bioscience)	<i>Bachelor of Science in Biosciences</i>
BSCS	<i>Bachelor of Science in Computer Science</i>
BS (Entrepreneurship)	<i>Bachelor of Science in Entrepreneurship</i>
BSSS	<i>Bachelor of Science in Social Sciences</i>
EMBA	<i>Executive Master of Business Administration</i>
HEC	<i>Higher Education Commission of Pakistan</i>
IR	<i>Institutional Research</i>
IT	<i>Information Technology</i>
MA EDU	<i>Master of Arts in Education</i>
MBA	<i>Master of Business Administration</i>
ME	<i>Mechatronics Engineering</i>
MPH	<i>Master of Public Health</i>
MPM	<i>Master in Project Management</i>
MS	<i>Master of Science</i>
MS (Bioscience)	<i>Master of Science in Biosciences</i>
MSCS	<i>Master of Science in Computer Science</i>
MSELM	<i>Master of Science in Educational Leadership and Management</i>
MS (Media Studies)	<i>Master of Science in Media Studies</i>
MSMS	<i>Master of Science in Management Sciences</i>
MSPM	<i>Master of Science in Project Management</i>
MSSS	<i>Master of Science in Social Science</i>
PhD	<i>Doctor of Philosophy</i>
SE	<i>Software Engineering</i>
SS	<i>Social Science</i>

Schematic Illustration

Given below is an explanation of the various elements of the course catalogue.

<i>This is the title for the course.</i>	<table border="1"> <tr> <td>Course Name</td> <td>Analysis of Financial Statements</td> <td>Credit Hours 3 (3,0)</td> </tr> </table>		Course Name	Analysis of Financial Statements	Credit Hours 3 (3,0)	<i>This is the duration of a particular course, divided into lecture plus lab hours.</i>
Course Name	Analysis of Financial Statements	Credit Hours 3 (3,0)				
<i>A code has been assigned to each of the respective course for identification.</i>	<table border="1"> <tr> <td>Course Code</td> <td>BA5132</td> <td>Prerequisite(s) BA5401</td> </tr> </table>		Course Code	BA5132	Prerequisite(s) BA5401	<i>This is the course that a student is required to pass before taking this course.</i>
Course Code	BA5132	Prerequisite(s) BA5401				
Course Description	<p>This course includes detailed analysis of Financial Statements of Manufacturing and Services Sector. Additional topics include cash flow statement, and statement of owner's equity; accounting principles; financial analysis and reporting process. Further, the course includes ratio analysis, trend analysis, and horizontal and vertical analysis, operating and financial leverage and their impact on a firm's performance, efficient market hypothesis, the capital asset pricing model (CAPM), inventory management process, FIFO/LIFO methods of costing calculate depreciation by applying different methods, and bond and stock valuation techniques.</p>		<i>This contains the topics that would be covered in the course.</i>			
Equivalent Course(s)	BA449, BA549		<i>These courses are considered similar, and earn equal credit hours to the given course and can be taken by the student, with approval from the respective Program Manager.</i>			



Department of Management Sciences

1.1 Bachelor

1.1.1 Bachelor of Business Administration (BBA)

Students enrolled in the Bachelor of Business Administration (BBA) program are required to complete 46 courses with a 6 credit hour Research Project within seven (7) years. The break-up of 46 courses (144 credit hours) is as follows:

- 40 Compulsory Courses (120 Credit Hours)
- 2 Optional Courses¹ (6 Credit Hours)
- 4 Elective² Courses (12 Credit Hours)
- 1 Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BA 1101	Introduction to Accounting	4
BA 1106	Islamiat and Pakistan Studies/Humanities	4
BA 1108	IT in Business	4
BA 1109	Personal Management and Communication	4
BA 1204	Maths for Business	5
BA 1206	Oral Communication and Presentation Skills	5
Spring Semester		
BA 1102	Microeconomics	5
BA 1105	English Writing Skills	6
BA 1201	Financial Accounting	6
BA 1203	Management Principles	6
BA 2307	Sociology	6
BA 2312	Human Behavior	7
Second Year		
Fall Semester		
BA 1202	Macroeconomics	7
BA 1211	Logic and Critical Thinking	7
BA 2301	Introduction to Business Finance	7
BA 2303	Marketing Principles	8
BA 2403	Business Ethics	8
BA 2408	Cost Accounting	8
Spring Semester		
BA 2311	Business Statistics	8
BA 2401	Money and Banking	9
BA 2402	Retail Management	9
BA 2406	Business and Electronic Communication	9
BA 3504	Organizational Behavior	9
BA 3507	Consumer Behavior	10

1- List of Optional Courses is given in Annexure A.
2- List of Electives is given in Annexure B.

Course Code	Course Title	Page #
Third Year		
Fall Semester		
BA 3501	Financial Markets and Institutions	10
BA 3508	Media Management	10
BA 3605	Statistical Inference	11
BA 4706	Development Economics	11
BA 4801	Law and Taxation	11
BA xxxx	Optional-I (As offered by Campus)	242
Spring Semester		
BA 3601	Financial Management	12
BA 3602	Marketing Management	12
BA 3607	Operations Management	12
BA 3603	Business Research Methods	13
BA 4804	Human Resource Management	13
BA xxxx	Optional-II (As offered by Campus)	242
Fourth Year		
Fall Semester		
BA 3505	Quantitative Skills	13
BA 4704	Management Information Systems	14
BA 4705	Services Marketing	14
BA 4814	Project Management	14
BA 4xxx	Elective-I	243 & 244
BA 4xxx	Elective-II	243 & 244
Spring Semester		
BA 3502	Entrepreneurship	14
BA 3609	Pakistan Economy	15
BA 4807	Research Project	15
BA 4xxx	Elective-III	243 & 244
BA 4xxx	Elective-IV	243 & 244

All courses may not be offered every year. Alternate courses may be substituted as and when required.

Research Project (BA 4807) may be substituted with BA 47XX Research Project-1 (3 Credit Hours) and BA 48XX Research Project-2 (3 Credit Hours) to be offered over two semesters as per the requirement of the campus.

Bachelor of Business Administration (BBA)

The description of 40 compulsory courses and the Research Project, as required for the BBA degree, is given below:

Course Name	Introduction to Accounting	Credit Hours	3 (3,0)
Course Code	BA 1101	Prerequisite(s)	None

Course Description This course covers the purpose and nature of accounting, forms of business enterprises, accounting information users, generally accepted accounting principles, accounting equation, accounting process, accounting cycle, ledgers and entries, accounting for receivables, inventory and depreciation.

Equivalent Course(s) AF 1104, EN 1103

Course Name	Islamiat and Pakistan Studies/Humanities	Credit Hours	3 (3,0)
Course Code	BA 1106	Prerequisite(s)	None

Course Description This course provides an introduction to the history of Pakistan with reference to pre- and post-independence eras, and the contribution of different governments in nation's social, economic and legislative development over years. The second part of the course focuses on Islam and the present-day Muslim world.

Equivalent Course(s) CSC 1105, MD 2402, SS 1109, BIO 1212, EN 1105

Course Name	IT in Business	Credit Hours	3 (3,0)
Course Code	BA 1108	Prerequisite(s)	None

Course Description This course deals with the introduction to information technology, understanding the computer system, computer hardware, operating system, application software, programming languages, files and data basics, data communication, networking basics, computer graphics, computer security and controls, MS Word, MS Excel, MS Access, MS Power Point, MS Project and Databases.

Equivalent Course(s) BA 1103, CSC 1104, BIO 1104, AF 1102, EN 1102, BST 1102

Course Name	Personal Management and Communication	Credit Hours	3 (3,0)
Course Code	BA 1109	Prerequisite(s)	None

Course Description This course teaches students to discover themselves and make positive changes to achieve greater effectiveness at work, and in personal and interpersonal relationship. Students learn the combination of factors such as personality, communication style, self-esteem, time management, conflict, negotiation and others that impact their personal effectiveness. They also learn methods, and techniques required to work effectively and confidently with others, using time management, negotiation and presentation skills with a positive mindset.

Equivalent Course(s) BA 1104, BA 5311, EN 1206, BST 1106

Bachelor of Business Administration (BBA)

Course Name	Maths for Business	Credit Hours	3 (3,0)
Course Code	BA 1204	Prerequisite(s)	None

Course Description	The aim of this course is to prepare students to solve economic and managerial problem through mathematical concepts. This course is covered in four parts, first part is based on systems of linear equations and its solutions provide preliminary concept, construction of linear equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule & inverse method to solve system of linear equations. The second part develops the concept of linear and nonlinear functions, and their application, and linear programming. The third part provides mathematics for finance, which covers simple, and compound interest rate computations and present and future annuity calculations. The last part of the course provides differentiation of basic functions, higher order differentiation, optimization of functions, definite and indefinite integration, and applications of integration.
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Equivalent Course(s)	BIO 1107, AF 1102, EN 1101
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Course Name	Oral Communication and Presentation Skills	Credit Hours	3 (3,0)
Course Code	BA 1206	Prerequisite(s)	BA 1105

Course Description	In this course student' learns the principles of a good presentation and has the opportunity to practice and experience these principles during this highly participative course. The course explores in detail, both verbal and non-verbal communication characteristics, and the importance of body-language expressions. Students are challenged through participative exercises with focus on active listening and observation techniques, that aim to make them competent in all facets of effective speech communication.
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Equivalent Course(s)	CSC 2101, ME 1101, AF 1203, EN 1106
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Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	BA 1102	Prerequisite(s)	None

Course Description	Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production.
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Equivalent Course(s)	SS 1105, BA 5302, AF 2405, EN 1205, BST 1105
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Bachelor of Business Administration (BBA)

Course Name	English Writing Skills	Credit Hours	3 (3,0)
Course Code	BA 1105	Prerequisite(s)	None

Course Description The course covers comprehending problems and statements, developing arguments, and communicating ideas clearly and concisely. It also focuses on grammar, forms of punctuation, forms of speech, sentence and paragraph construction, composition, comprehension, writing styles, presentations, verbal communication skills, formal and informal presentations, interactive discussions, and role-playing.

Equivalent Course(s) CSC 1102, MD 1122, SS 1116, BA 5317, BIO 1111, AF 1103, BST 1103

Course Name	Financial Accounting	Credit Hours	3 (3,0)
Course Code	BA 1201	Prerequisite(s)	BA 1101

Course Description This course includes accounting for merchandise business, classified balance sheet, simple and multiple income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, corporation and measuring cash flow statements. Also, MS Excel is used and necessary accounting software is introduced.

Equivalent Course(s) AF 1201, BA 5301

Course Name	Management Principles	Credit Hours	3 (3,0)
Course Code	BA 1203	Prerequisite(s)	None

Course Description This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future of management and society.

Equivalent Course(s) BA 5303, BA 5419, AF 1106, EN 1204, BST 1101

Course Name	Sociology	Credit Hours	3 (3,0)
Course Code	BA 2307	Prerequisite(s)	None

Course Description The course focuses on three central themes; social change, social inequality, and social harmony versus conflict. It combines selective theoretical texts with case studies to understand the mechanisms and institutions that can trigger, foster, sustain, or undermine each of the three processes. The course covers the work of major sociological thinkers and the influence of sociology on modernization, race, citizenship, culture, gender, society, and economic development.

Equivalent Course(s) BA 2306, MD 1104, SS 2307, AF 2304, EN 1203

Bachelor of Business Administration (BBA)

Course Name	Human Behavior	Credit Hours	3 (3,0)
Course Code	BA 2312	Prerequisite(s)	None
Course Description	This course covers the basics of psychological features of human behavior with applications in real life situations. In addition, the aspects of personal growth and understanding are also covered.		
Equivalent Course(s)	MD 2424, BA 2306, SS 2306, AF 2303, EN1104		

Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	BA 1202	Prerequisite(s)	BA 1102
Course Description	This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.		
Equivalent Course(s)	BA 5402, SS 1205, AF 3505, EN 2303, BST 1204		

Course Name	Logic and Critical Thinking	Credit Hours	3 (3,0)
Course Code	BA 1211	Prerequisite(s)	BA 1105
Course Description	The course covers scope and laws of logic, deduction and induction, inferences, forms of discourse, emotive words, kinds of disputes and disagreements, rules and fallacies, classical (Aristotelian) logic, standard-form categorical syllogisms and testing, uniform translation, dilemma and enthymemes, and Mills' Methods of scientific investigation. Critical thinking skills and techniques are also introduced.		
Equivalent Course(s)	BA 5503, EN 2302		

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	BA 2301	Prerequisite(s)	BA 1201
Course Description	This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.		
Equivalent Course(s)	BA 5401, AF 4703, EN 2301, BST 1203		

Bachelor of Business Administration (BBA)

Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	BA 2303	Prerequisite(s)	BA 1203

Course Description This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s) BA 5404, AF 1206, EN 2305, BST 1205

Course Name	Business Ethics	Credit Hours	3 (3,0)
Course Code	BA 2403	Prerequisite(s)	BA 1203

Course Description This course introduces contemporary and controversial ethical issues facing the business community. Topics include: moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students would be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.

Equivalent Course(s) AF 3503, EN 2402

Course Name	Cost Accounting	Credit Hours	3 (3,0)
Course Code	BA 2408	Prerequisite(s)	BA 1201

Course Description This course focuses on cost allocation, process costing systems and spoilage. Specific topics include relevancy of revenues and costs, cost allocation decisions (joint and byproducts), process costing systems, factory overhead applied, standard costing: setting of standards, analysis of variance and controlling, and costing material.

Equivalent Course(s) BA 5411, AF 2302, BST 1202

Course Name	Business Statistics	Credit Hours	3 (3,0)
Course Code	BA 2311	Prerequisite(s)	BA 1204

Course Description This basic course aims to enhance the capacity of the students to solve the research problems and by focusing on four areas; introduction to statistics, types of data, frequency distribution, graphs and charts, measures of central tendency, and measures of dispersion; concept of curve fitting techniques, regression analysis, correlation analysis, time series analysis; and index numbers, counting techniques and MS Excel tools for statistics using add-on analysis tool pack.

Equivalent Course(s) BA 5305, BA 2305, BIO 1208, AF 2406, EN 2304, BST 1206

Bachelor of Business Administration (BBA)

Course Name	Money and Banking	Credit Hours	3 (3,0)
Course Code	BA 2401	Prerequisite(s)	BA 1202

Course Description

This course deals with the history, evolution and function of money. The course essentially delves into the following key topics: monetary policies which are aligned in accordance to the monetary systems, responsibilities of SBP as central bank, controlling money supply in the economy, operations and functions of commercial banks, role of other financial intermediaries, and key financial instruments available in the market. In addition, commodity markets, hedging instruments, different functions of treasury, corporate and consumer banking department is also introduced.

Equivalent Course(s)

AF 2404

Course Name	Retail Management	Credit Hours	3 (3,0)
Course Code	BA 2402	Prerequisite(s)	BA 2303

Course Description

This course addresses retail management at two levels: the macro-level (the role of the retailing in the business industry), and the micro-level (which focuses on the functionality of a retail business). The course provides a preview of quality management, resources management, business communication, retail marketing and advertising, consumer behavior, inventory management and accounting, and human resource management.

Equivalent Course(s)

BA 5228, Marketing Elective, EN 4XXX Elective, BST 2XXX

Course Name	Business and Electronic Communication	Credit Hours	3 (3,0)
Course Code	BA 2406	Prerequisite(s)	BA 1206

Course Description

This introductory course teaches students to communicate at both personal and professional levels. In addition, it develops competency in all forms of communication. Also, this course introduces communication theories and strategies for a variety of business situations. Using a developmental approach to business communication, the course examines methods for organizing ideas, analyzing data, addressing diverse concerns, presenting information, and developing a professional communication style.

Equivalent Course(s)

BA 5304, BA 5418, AF 2301, EN 1202, BST 1202

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	BA 3504	Prerequisite(s)	BA 2312

Course Description

The course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s)

BA 5207, AF 2305, EN 2306, BST 2XXX

1.1.1 Bachelor of Business Administration (BBA)

Course Name	Consumer Behavior	Credit Hours	3 (3,0)
Course Code	BA 3507	Prerequisite(s)	BA 2303

Course Description This course examines in detail, the complex behavioral processes which determine consumer actions and analyzes the decision patterns in a variety of situations with a special reference to individual and group influences. It is designed to cover contemporary concepts in consumer behavior, objectives, consumer and market segmentation, environmental influence, individual determinants, and consumer buying behavior.

Equivalent Course(s) BA 5123, BE 484, EN 2403, BST 2XXX

Course Name	Financial Markets and Institutions	Credit Hours	3 (3,0)
Course Code	BA 3501	Prerequisite(s)	BA 2401

Course Description A theoretical course that focuses on financial markets includes bond, equity and the effect of the economy upon the markets when funds are injected into the economic system through financial intermediaries. Topics include; interest rates the flow of funds, capital markets, debt market, money markets and their relationship with changing financial services and regulatory agencies. Other topics include roles of banks, finance companies, insurance companies and fund management companies. The study of Financial Market and Institutions (FMI) is one of the most important areas for finance and business students. The course has been designed to enable the students to understand the existing setup of financial markets, instruments and institutions.

Equivalent Course(s) BA 5135, AF 4805, BST 2XXX

Course Name	Media Management	Credit Hours	3 (3,0)
Course Code	BA 3508	Prerequisite(s)	BA 2303

Course Description The course introduces basic concepts of public relations and how it is different from promotional tools. It discusses various public relations tools, dimensions, and disciplines. It also addresses issues emerging out of modern and emerging communication media and provides a broader perspective of media in Pakistan describing its characteristics and effective ways to interact with them. The course concludes with a brief discussion on event management with an overview of importance of communications during crisis situations.

Equivalent Course(s) EN 2405

Bachelor of Business Administration (BBA)

Course Name	Statistical Inference	Credit Hours	3 (3,0)
Course Code	BA 3605	Prerequisite(s)	BA 2311

Course Description The course covers probability; probability distributions; Binomial, Poisson, Hyper-geometric, Chi Square distribution, Normal distribution, Sampling Distribution; estimation; hypothesis testing; one-population test, two-populations test and analysis of variance; and computer applications in statistics.

Equivalent Course(s) BA 5405, SS 2418, AF 3506, BST 2306

Course Name	Development Economics	Credit Hours	3 (3,0)
Course Code	BA 4706	Prerequisite(s)	BA 1202

Course Description This course defines development and identifies contemporary issues in development. It also discusses the theories of development, and relates them to the Pakistani scenario and the role of the international community in the development process. In addition, it also identifies and analyzes the problems of the poor in Pakistan, in particular, and of the developing countries, in general, it helps students to critically analyze contemporary domestic and international economic policies and determine whether such policies improve or worsen the condition of the poor.

Equivalent Course(s) SS 1163, SS 4147, SS 4284

Course Name	Law and Taxation	Credit Hours	3 (3,0)
Course Code	BA 4801	Prerequisite(s)	BA 1211

Course Description The course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws, Sales Tax, Income Tax Law and Intellectual Property Laws. This course identifies the legal rights of persons in case of nonperformance of contracts, it also identifies the taxation system as well as kinds of taxes in Pakistan. Furthermore, it identifies the intellectual property rights in Pakistan.

Equivalent Course(s) AF 3606, EN 2401, BST 2401

1.1 Bachelor of Business Administration (BBA)

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	BA 3601	Prerequisite(s)	BA 2301

Course Description

Building upon the concepts already laid down in its pre-requisite, financial management helps students in exploring the depths of the relatively complex aspects of the financial world, with prime focus on the present value and opportunity cost of capital. This course covers topics such as nature, scope and function of financial decision areas, objectives of financial management, financial forecasting, working capital management, valuation of stocks, valuation of fixed income securities, project cash flow analysis, capital budgeting and decision making, determination of the required rate of return via asset pricing models, dividend policy, debt policy, introduction to financial risk management and derivatives and role of financial markets in Pakistan.

Equivalent Course(s)

BA 5105, AF 4702, BST 2302

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BA 3602	Prerequisite(s)	BA 2303

Course Description

The course introduces the concept of customer and market-driven management. Also, this course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.

Equivalent Course(s)

BA 5106, AF 2403, BST 2305

Course Name	Operations Management	Credit Hours	3 (3,0)
Course Code	BA 3607	Prerequisite(s)	BA 1203

Course Description

This course introduces the concepts of production and operations management. Topics covered represent a blend of concepts from industrial engineering, cost accounting, general management, quantitative methods and statistics. The course topics include some operations and strategic issues such as applied forecasting, aggregate planning, scheduling, shop floor control, total quality management, inventory management, and facility layout and project management. In addition, topics include the complex understanding of services operations management with the help of real life case studies, processes and methodologies applied worldwide.

Equivalent Course(s)

EN 2406, BST 2XXX

Bachelor of Business Administration (BBA)

Course Name	Business Research Methods	Credit Hours	3 (3,0)
Course Code	BA 3603	Prerequisite(s)	BA 3605

Course Description

This course provides the understanding of basic business research methods in the field of marketing, human resource management, and finance. The subject encompasses the theory and practice of research; and covers concepts, elements, and process of conducting business research. It builds the specific conceptual knowledge regarding identification and elicitation of research problem, development of research proposal, reviewing the literature, using suitable research methodology, data collection and analysis tools and writing research report. The focus of the course is on basic concept building and relating the research to real life business problems.

Equivalent Course(s)

SS 3504, AF 3609, BST 2301

Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	BA 4804	Prerequisite(s)	BA 3504

Course Description

This course examines the role of the human resource professional, as a strategic partner, in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as Human Resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, rising benefit costs), and best practices of employers of choice.

Equivalent Course(s)

BA 5205, AF 1204, EN 3602, BST 2302

Course Name	Quantitative Skills	Credit Hours	3 (3,0)
Course Code	BA 3505	Prerequisite(s)	BA 1204

Course Description

The course is an introduction to quantitative skills essentially required to business students. The course consists of several parts. First is related to arithmetic techniques like: numbers, exponents and roots, ratio and proportion, averages etc. and their usage in solving common problems. The second part consists of algebra, equations, and their applications in solving business problems. The third part comprises of coordinate geometry and combination of above parts. The fourth part covers graphical analysis and interpretation of the data. The fifth and last part consists of data sufficiency problems related to arithmetic, algebra and geometry.

Equivalent Course(s)

None

1.1.1 Bachelor of Business Administration (BBA)

Course Name	Management Information Systems	Credit Hours	3 (3,0)
Course Code	BA 4704	Prerequisite(s)	BA 1108

Course Description This course covers different information technology applications in business for efficient management of business operations by providing support to decision makers for strategic business decisions. The course examines various corporate frameworks for information management and their utility.

Equivalent Course(s) BA 5403, AF 2402, BST 2304

Course Name	Services Marketing	Credit Hours	3 (3,0)
Course Code	BA 4705	Prerequisite(s)	BA 3602

Course Description This course studies the difference between marketing mix of tangible offerings and that of services; describing applications of services marketing; developing services marketing plan and practice services marketing, and developing entrepreneurial mindset in a service industry. The course focuses on marketing services through 7Ps, whether service is the primary business or a supplementary to a product.

Equivalent Course(s) BA 5129, Marketing Elective, EN 4XXX Elective, BST 2XXX

Course Name	Project Management	Credit Hours	3 (3,0)
Course Code	BA 4814	Prerequisite(s)	BA 3607

Course Description This course is split into three parts: Project Initiation, Project Implementation, and Project Termination. Topics include: definition of a project, importance of project management, project life cycle, types of projects, project management and related industries, project initiation and selection, project manager, project organization, project planning, conflicts and negotiation, project implementation, budgeting and cost estimation, scheduling, resource allocation, monitoring and information systems, project control, project termination, and project auditing. Furthermore, the course covers project feasibility study, format of feasibility study, contents of feasibility study, and making accurate estimates.

Equivalent Course(s) SCM Elective, BST 2XXX

Course Name	Entrepreneurship	Credit Hours	3 (3,0)
Course Code	BA 3502	Prerequisite(s)	BA 1203

Course Description This course focuses on ways in which entrepreneurs recognize opportunities, generate ideas, and organize resources to plan and run successful ventures that enable them to achieve their goals. Students are required to create an entrepreneurial venture as part of a practical learning activity. Through this hands-on experience, case studies, class discussions and text book readings students will have an opportunity to develop the values, traits, and skills most often associated with successful entrepreneurs.

Equivalent Course(s) BA 5406, BA 4859, BA 3517, AF 3504, EN 2404, BST 2XXX

1.1.1 Bachelor of Business Administration (BBA)

Course Name	Pakistan Economy	Credit Hours	3 (3.0)
Course Code	BA 3609	Prerequisite(s)	BA 4706

Course Description

This course is designed to provide students with critical information and knowledge about Pakistan economic environment. Starting with the historical background, covering topics such as agriculture, industry, public finance and social sector development. The course also reviews government interventions, like fiscal policy, monetary policy, trade policy, and income policies. Also included in this course are topics like institutional reforms, deregulation, privatization, denationalization, globalization and other policies/factors that affect business environment in Pakistan. The course ends with discussion on challenges ahead for the Pakistan Economy in the regional and global perspectives.

Equivalent Course(s)

SS 4249, AF 2306, EN 4701

Course Name	Research Project	Credit Hours	6 (6.0)
Course Code	BA 4807	Prerequisite(s)	BA 3603

Course Description

The research project course is the application of the theory and concepts learned across various courses in BBA program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.

Equivalent Course(s)

AF 4808

1.1 Bachelor

1.1.2 Bachelor of Arts in Business Studies (BABS)

Students enrolled in the BA (Hons) in Business Studies (BABS) program are required to complete 27 courses with 81 Credit Hours. Upon completion of the required courses at SZABIST, students can proceed for the Final Year to the Coventry University to obtain their Bachelor (Honors) degree. For any reason, if the student does not proceed to the Coventry University, they can obtain BABS degree from SZABIST by completing additional 19 courses and a Research Project. The break-up of the courses offered is given below:

- 46 Compulsory Courses (138 Credit Hours)
- 1 Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BA 1101	Introduction to Accounting	18
BA 1102	Microeconomics	18
BA 1103	Introduction to Computers	18
BA 1104	Personal Management	19
BA 1206	Oral Communication and Presentation Skills	19
BA 1204	Math for Business	19
Spring Semester		
BA 1201	Financial Accounting	19
BA 1202	Microeconomics	20
BA 1203	Management Principles	20
BA 1105	English Writing Skills	20
BA 2305	Statistics and Mathematics for Business	20
BA 2312	Human Behavior	21
Summer Semester		
BA 2301	Introduction to Business Finance	21
BA 2302	Graphic Design in Multimedia Presentations	21
Second Year		
Fall Semester		
BA 2303	Marketing Principles	21
BA 2304	Managerial Accounting	22
BA 2306	Social Sciences	22
BA 2403	Business Ethics	22
BA 3504	Organizational Behavior	23
BA 1207	Introduction to Logic	23
Spring Semester		
BA 3505	Quantitative Skills	23
BA 3601	Financial Management	24
BA 3602	Marketing Management	24
BA 4704	Management Information Systems	24
BA 4721	Advertising	25
BA 4801	Law and Taxation	25

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
BA 1106	Islamiat and Pakistan Studies/Humanities	25
BA 4804	Human Resource Management	25
BA 2406	Business and Electronic Communication	26
BA 3517	Entrepreneurship & Small Business Management	26
BA 3518	Law for Managers	26
BA 3605	Statistical Inference	26
Spring Semester		
BA 3617	Introductions to International Business	27
BA 2401	Money & Banking	27
BA 3616	Customer Relationship Management	28
BA 3618	Leadership Development	28
BA 3519	Current Affairs	28
Forth Year		
Fall Semester		
BA 3507	Consumer Behavior	29
BA 3501	Financial Markets and Institutions	29
BA 4824	Sales Management	29
BA 3603	Business Research Methods	30
BA 4703	Staffing/Compensation and Employee Development	30
Spring Semester		
BA 4807	Research Project	30
BA 4827	Professional Development	31
BA 4814	Project Management	31
BA 4128	Operations & Supply Chain Management	31
BA 4127	Managing Across Global environment	32

All courses may not be offered every year. Alternate courses may be substituted as and when required.

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Introduction to Accounting	Credit Hours	3 (3,0)
Course Code	BA 1101	Prerequisite(s)	None

Course Description	This course covers the purpose and nature of accounting, forms of business enterprises, accounting information users, Generally Accepted Accounting Principles, accounting equation, accounting process, the accounting cycle, ledgers and entries, accounting for receivables, inventory and depreciation.
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Equivalent Course(s)	AF 1104, EN 1103
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Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	BA 1102	Prerequisite(s)	None

Course Description	Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production
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Equivalent Course(s)	SS 1105, BA 5302, AF 2405, EN 1205, BST 1105
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Course Name	Introduction to Computers	Credit Hours	3 (1,2)
Course Code	BA 1103	Prerequisite(s)	None

Course Description	This course introduces fundamental computer concepts, including basic functions and operations of the computer. Course topics include; identification of hardware, operating system, application software, programming languages, files and data basics, data communication, networking basics, computer graphics, computer security and controls, MS Word, MS Excel, MS Access, MS Power Point, MS Project, internet browsers, databases and e-banking.
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Equivalent Course(s)	BA 1108, CSC 1104, BIO 1104, AF 1102, EN 1102, BST 1102
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Course Name	Personal Management	Credit Hours	3 (3,0)
Course Code	BA 1104	Prerequisite(s)	None

Course Description	This course teaches students to discover themselves and make positive changes to achieve greater effectiveness at work, and in personal and interpersonal relationship. Students learn the combination of factors such as personality, communication style, self-esteem, time management, conflict, negotiation and others that impact their personal effectiveness. They also learn methods, and techniques required to work effectively and confidently with others, using time management, negotiation and presentation skills with a positive mindset.
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Equivalent Course(s)	BA 1109 , BA 5311, EN 1206, BST 1106
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1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Oral Communication and Presentation Skills	Credit Hours	3 (3,0)
Course Code	BA 1206	Prerequisite(s)	BA 1105

Course Description

In this course student' learns the principles of a good presentation and has the opportunity to practice and experience these principles during this highly participative course. The course explores in detail, both verbal and non-verbal communication characteristics, and the importance of body-language expressions. Students are challenged through participative exercises with focus on active listening and observation techniques, that aim to make them competent in all facets of effective speech communication.

Equivalent Course(s)

CSC 2101, ME 1101, AF 1203, EN 1106

Course Name	Maths for Business	Credit Hours	3 (3,0)
Course Code	BA 1204	Prerequisite(s)	None

Course Description

The aim of this course is to prepare students to solve economic and managerial problem through mathematical concepts. This course is covered in four parts, first part is based on systems of linear equations and its solutions provide preliminary concept, construction of linear equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule & inverse method to solve system of linear equations. The second part develops the concept of linear and nonlinear functions and their application, and linear programming. The third part provides mathematics for finance, which covers simple, and compound interest rate computations and present and future annuity calculations. The last part of the course provides differentiation of basic functions, higher order differentiation, optimization of functions, definite and indefinite integration, and applications of integration.

Equivalent Course(s)

BIO 1107, AF 1102, EN 1101

Course Name	Financial Accounting	Credit Hours	3 (3,0)
Course Code	BA 1201	Prerequisite(s)	BA 1101

Course Description

This course includes accounting for merchandise business, classified balance sheet, simple and multiple income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, corporation and measuring cash flow statements. Also, MS Excel is used and necessary accounting software is introduced.

Equivalent Course(s)

BA 5301, AF 1201

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	BA 1202	Prerequisite(s)	BA 1102

Course Description	This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.
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Equivalent Course(s)	BA 5402, SS 1205, AF 3505, EN 2303, BST 1204
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Course Name	Management Principles	Credit Hours	3 (3,0)
Course Code	BA 1203	Prerequisite(s)	None

Course Description	This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future of management and society.
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Equivalent Course(s)	BA 5303, BA 5419, AF 1106, EN 1204, BST 1101
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Course Name	English Writing Skills	Credit Hours	3 (3,0)
Course Code	BA 1105	Prerequisite(s)	None

Course Description	This course covers comprehending problems and statements, developing arguments, and communicating ideas clearly and concisely. It also focuses on grammar, forms of punctuation, forms of speech, sentence and paragraph construction, composition, comprehension, writing styles, presentations, verbal communication skills, formal and informal presentations, interactive discussions, and role-playing.
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Equivalent Course(s)	CSC 1102, MD 1122, SS 1116, BA 5317, BIO 1111, AF 1103, BST 1103
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Course Name	Statistics and Mathematics for Business	Credit Hours	3 (3,0)
Course Code	BA 2305	Prerequisite(s)	BA 1204

Course Description	The course covers descriptive statistical tools and mathematical methods. Statistical tools consist of; frequency distribution, graphs, charts, mean, and variance, percentiles, correlation, and regression analysis. Mathematical methods consist of matrices, system of linear equations, differentiation and optimization, linear programming, and simplex method. The topics are taught in relation to their application in business and economics.
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Equivalent Course(s)	BA 5305, BA 2305, BIO 1208, AF 2406, EN 2304
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1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Human Behavior	Credit Hours	3 (3,0)
Course Code	BA 2312	Prerequisite(s)	None

Course Description This course covers the basics of psychological features of human behavior with applications in real life situations. In addition, the aspects of personal growth and understanding are also covered.

Equivalent Course(s) MD 2424, BA 2306, SS 2306, AF 2303, EN 1104

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	BA 2301	Prerequisite(s)	BA 1201

Course Description This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.

Equivalent Course(s) BA 5401, AF 4703, EN 2301, BST 1203

Course Name	Graphic Design in Multimedia Presentations	Credit Hours	3 (1,2)
Course Code	BA 2302	Prerequisite(s)	BA 3604

Course Description This course introduces the computer system developed for graphics. It covers topics such as hardware and software components for multimedia production, basic computer operations, ergonomics, file management, scanning techniques, archiving capabilities, and utilization of the multimedia department server and internet connection. Software such as Adobe Photoshop, and Freehand are introduced.

Equivalent Course(s) BA 4842

Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	BA 2303	Prerequisite(s)	BA 1203

Course Description This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s) BA 5404, AF 1206, EN 2305, BST 1205

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Managerial Accounting	Credit Hours	3 (3,0)
Course Code	BA 2304	Prerequisite(s)	BA 2301

Course Description This course focuses on cost allocation, process costing systems and spoilage. Specific topics include relevancy of revenues and costs, cost allocation decisions (joint and byproducts), process costing systems, Factory overhead applied, Standard Costing: Setting of Standards, Analysis of Variance and Controlling and Costing Material.

Equivalent Course(s) BA 5411, AF 2401, BST 1202

Course Name	Introduction to Social Sciences	Credit Hours	3 (3,0)
Course Code	BA 2306	Prerequisite(s)	None

Course Description This is an interdisciplinary course combining the perspectives of two or more of the social and behavioral sciences (anthropology, economics, geography, history, political science, psychology and sociology) on the central issues in social science studies. This course explores the relationship between the social and behavioral sciences being studied. It reviews the application of the scientific method, compares theory and concepts, and reviews the different perspectives of the discipline being studied. This course is broad in nature and scope and provides the basis for further study in other various social and behavioral sciences.

Equivalent Course(s) BA 2306, MD 1104, SS 2307, AF 2304, EN 1203

Course Name	Business Ethics	Credit Hours	3 (3,0)
Course Code	BA 2403	Prerequisite(s)	BA 1203

Course Description This course introduces contemporary and controversial ethical issues faced by the business community. Topics include: moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students would be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.

Equivalent Course(s) AF 3503, EN 2402

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	BA 3504	Prerequisite(s)	BA 2312

Course Description

This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s)

BA 5207, AF 2305, EN 2306, BST 2XXX

Course Name	Introduction to Logic	Credit Hours	3 (3,0)
Course Code	BA 1207	Prerequisite(s)	

Course Description

The course covers scope and laws of logic, deduction and induction, inferences, forms of discourse, emotive words, kinds of disputes and disagreements, rules and fallacies, classical (Aristotelian) logic, standard-form categorical syllogisms and testing, uniform translation, dilemma and enthymemes, and Mills' Methods of scientific investigation. Critical thinking skills and techniques are also introduced.

Equivalent Course(s)

BA 5503, EN 2302, BA 1211

Course Name	Quantitative Skills	Credit Hours	3 (3,0)
Course Code	BA 3505	Prerequisite(s)	BA 3605, BA 1204

Course Description

This course is an introduction to quantitative skills essentially required to business students. The course consists of several parts. First is related to arithmetic techniques like: numbers, exponents and roots, ratio and proportion, averages etc. and their usage in solving common problems. The second part consists of algebra, equations, and their applications in solving business problems. The third part comprises of coordinate geometry and combination of above parts. The fourth part covers graphical analysis and interpretation of the data. The fifth and last part consists of data sufficiency problems related to arithmetic, algebra and geometry.

Equivalent Course(s)

None

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	BA 3601	Prerequisite(s)	BA 2301

Course Description

Building upon the concepts already laid down in its pre-requisite, financial management helps students in exploring the depths of the relatively complex aspects of the financial world, with prime focus on the present value and opportunity cost of capital. This course covers topics such as nature, scope, and function of financial decision areas; objectives of financial management; financial forecasting; working capital management; valuation of stocks; valuation of fixed income securities; project cash flow analysis; capital budgeting and decision making; determination of the required rate of return via asset pricing models; dividend policy; debt policy; introduction to financial risk management; and derivatives and role of financial markets in Pakistan.

Equivalent Course(s)

BA 5105, AF 4702, BST 2302

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BA 3602	Prerequisite(s)	BA 2303

Course Description

This course introduces the concept of customer and market-driven management. This course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.

Equivalent Course(s)

BA 5106, AF 2403, BST 2305

Course Name	Management Information Systems	Credit Hours	3 (3,0)
Course Code	BA 4704	Prerequisite(s)	BA 3604

Course Description

This course covers different information technology applications in business for efficient management of business operations by providing support to decision makers for strategic business decisions. The course examines various corporate frameworks for information management and their utility.

Equivalent Course(s)

BA 5403, AF 2402, BST 2304

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Advertising	Credit Hours	3 (3,0)
Course Code	BA 4721	Prerequisite(s)	BA 2303

Course Description This course introduces students to the principles and practices of contemporary advertising, marketing and public relations. In this course students explore these roles in the marketplace, the elements of a successful advertisement, advertising production, and tasks accomplished by media professionals while promoting products and service businesses.

Equivalent Course(s) None

Course Name	Law and Taxation	Credit Hours	3 (3,0)
Course Code	BA 4801	Prerequisite(s)	BA 1211

Course Description This course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws, Sales Tax, Income Tax Law and Intellectual Property Laws. This course identifies the legal rights of persons in case of nonperformance of contracts, it also identifies the taxation system as well as kinds of taxes in Pakistan. Furthermore, it identifies the intellectual property rights in Pakistan.

Equivalent Course(s) AF 3606, EN 2401, BST 2401

Course Name	Islamiat and Pakistan Studies/Humanities	Credit Hours	3 (3,0)
Course Code	BA 1106	Prerequisite(s)	None

Course Description This course provides an introduction to the history of Pakistan with reference to pre- and post-independence eras, and the contribution of different governments in nation's social, economic and legislative development over years. The second part of the course focuses on Islam and the present-day Muslim world.

Equivalent Course(s) CSC 1105, MD 2402, SS 1109, BIO 2303, EN 1105

Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	BA 4804	Prerequisite(s)	BA 3504

Course Description This course examines the role of the human resource professional, as a strategic partner, in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as human resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, rising benefit costs), and best practices of employers of choice.

Equivalent Course(s) BA 5205, AF 4804, EN 3602, BST 2302

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Business and Electronic Communication	Credit Hours	3 (3,0)
Course Code	BA 2406	Prerequisite(s)	BA 1206

Course Description

This introductory course teaches students to communicate at both personal and professional levels. In addition, it develops competency in all forms of communication. This course introduces communication theories and strategies for a variety of business situations. Using a developmental approach to business communication, the course examines methods for organizing ideas, analyzing data, addressing diverse concerns, presenting information, and developing a professional communication style.

Equivalent Course(s)

BA 5304, BA 5418, AF 2301, EN 1202, BST 1202

Course Name	Entrepreneurship & Small Business Management	Credit Hours	3 (3,0)
Course Code	BA 3517	Prerequisite(s)	BA 2301, BA 2303

Course Description

This course focuses on ways in which entrepreneurs recognize opportunities, generate ideas, and organize resources to plan and run successful ventures that enable them to achieve their goals. Students are required to create an entrepreneurial venture as part of a practical learning activity. Through this hands-on experience, case studies, class discussions and textbook readings students will have an opportunity to develop the values, traits, and skills most often associated with successful entrepreneurs.

Equivalent Course(s)

BA 5406, BA 4859, BA 3517, AF 3502, EN 2404, BST 2XXX

Course Name	Law for Managers	Credit Hours	3 (3,0)
Course Code	BA 3518	Prerequisite(s)	BA 4801

Course Description

This course focuses on ways to teach students the basic principles in governing the corporate laws, management and the structure of corporate entities. In addition, the students will be able to comprehend the corporate laws applicable to the listed and public sector companies. This course identifies the rules and regulations laid down by Competition Commission of Pakistan; and demonstrate the rules and regulations governing the Non-Banking Finance Corporations.

Equivalent Course(s)

None

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Statistical Inference	Credit Hours	3 (3,0)
Course Code	BA 3605	Prerequisite(s)	BA 2311

Course Description This course covers probability; probability distributions; Binomial, Poisson, Hyper-geometric, Chi Square distribution, Normal distribution, Sampling Distribution; estimation; hypothesis testing; one-population test, two-populations test and analysis of variance; and computer applications in statistics.

Equivalent Course(s) BA 5405, SS 2418, AF 3605, BST 2306

Course Name	Introduction to International Business	Credit Hours	3 (3,0)
Course Code	BA 3617	Prerequisite(s)	BA 3602, BA 4804 BA 2404, BA 3502

Course Description This course provides the manager perspective in the fields of international payments, international trade, and the analysis of investments. Emphasis is given to the materials and concepts that illuminate the strategies, structure, practices, and effects of multinational enterprises. The topics to be covered are: The Nature of International Business Management, Marketing to Customers with Diverse Cultural Backgrounds, Operations in Diverse Political and Legal Environments, Finance in the International Marketplace, Human Resources and Employees of Diverse Cultural Backgrounds, and Strategy and Structure of International or Global Enterprises.

Equivalent Course(s) BA 5308

Course Name	Money and Banking	Credit Hours	3 (3,0)
Course Code	BA 2401	Prerequisite(s)	BA 1202

Course Description This course deals with the history, evolution and function of money. The course essentially delves into the following key topics: monetary policies which are aligned in accordance to the monetary systems, responsibilities of SBP as central bank, controlling money supply in the economy, operations and functions of commercial banks, role of other financial intermediaries, key financial instruments available in the market. In addition, commodity markets, hedging instruments, different functions of treasury, corporate and consumer banking department is introduced.

Equivalent Course(s) AF 2404

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Customer Relationship Management	Credit Hours	3
Course Code	BA 3616	Prerequisite(s)	

Course Description	Customer Relationship Management (CRM) is the business strategy, process, culture and technology that enables organizations to optimize revenue and increase value through a more complete understanding and fulfillment of customer needs. CRM aims at providing better customer service, retaining customers as long-term profitable customers, selling services/products more effectively, gaining new customers from present customers through referrals, and providing helping hand to salespeople.
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Equivalent Course(s)	BA 5124
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Course Name	Leadership Development	Credit Hours	3 (3,0)
Course Code	BA 3618	Prerequisite(s)	BA 4804

Course Description	This course is designed to build upon fundamental leadership theory and further explore historical and contemporary leadership theories, models and perspectives within a variety of contexts. Through dynamic interactions between the instructor, students and other experiences, each student should develop a more complete and holistic philosophical and theoretical leadership framework. This course focuses on professional leadership development. The course is designed to improve personal awareness in the areas of self-management, professionalism, work attitudes and motivation, personality, innovation and creativity, communication, diversity, and ethical decision making.
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Equivalent Course(s)	None
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Course Name	Current Affairs	Credit Hours	3 (3,0)
Course Code	BA 3519	Prerequisite(s)	BA 1202, BA 1105

Course Description	Current Affairs is a course designed to address current issues locally, nationally, and internationally. The course will also focus on major areas of conflict in the world. In this course student will be engaged in critical evaluation of topics on social, political, intellectual, religious and economic viewpoints. Students will experience simulations, debates and technology incorporated into the curriculum.
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Equivalent Course(s)	None
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1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Consumer Behavior	Credit Hours	3 (3,0)
Course Code	BA 3507	Prerequisite(s)	BA 2303

Course Description

This course examines in detail, the complex behavioral processes which determine consumer actions and analyzes the decision patterns in a variety of situations with a special reference to individual and group influences. It is designed to cover contemporary concepts in consumer behavior, objectives, consumer and market segmentation, environmental influence, individual determinants, and consumer buying behavior.

Equivalent Course(s)

BA 5123, BE 484, EN 2403, BST 2XXX

Course Name	Financial Markets and Institutions	Credit Hours	3 (3,0)
Course Code	BA 3501	Prerequisite(s)	BA 2401

Course Description

A theoretical course that focuses on financial markets includes bond, equity and the effect of the economy upon the markets when funds are injected into the economic system through financial intermediaries. Topics include; interest rates the flow of funds, capital markets, debt market, money markets and their relationship with changing financial services and regulatory agencies. Other topics include roles of banks, finance companies, insurance companies and fund management companies. The study of Financial Market and Institutions (FMI) is one of the most important areas for finance and business students. The course has been designed to enable the students to understand the existing setup of financial markets, instruments and institutions.

Equivalent Course(s)

BA 5135, AF 3501, BST 2XXX

Course Name	Sales Management	Credit Hours	3 (3,0)
Course Code	BA 4824	Prerequisite(s)	BA 3602

Course Description

This course focuses on the management of an organization's personal selling functions which include the: 1. Formulation of a strategic sales program. 2. Implementation of the sales program and, 3. Evaluation and control of the sales force performance. This course comprises of an approach to understand the above stated sets of decisions and processes, through text and cases on sales management topics and also through sharing of the facilitator's own experiences and observations gained while serving various multinational and national sales and marketing organizations.

Equivalent Course(s)

BA 3604

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Business Research Methods	Credit Hours	3 (3,0)
Course Code	BA 4703	Prerequisite(s)	BA 3605

Course Description

This course provides the understanding of basic business research methods in the field of marketing, human resource management, and finance. The subject encompasses the theory and practice of research; and covers concepts, elements, and process of conducting business research. It builds the specific conceptual knowledge regarding identification and elicitation of research problem, development of research proposal, reviewing the literature, using suitable research methodology, data collection and analysis tools and writing research report. The focus of the course is on basic concept building and relating the research to real life business problems.

Equivalent Course(s)

SS 3504, AF 3603, BST 2301

Course Name	Staffing & Compensation	Credit Hours	3 (3,0)
Course Code	BA 4703	Prerequisite(s)	BA 4804

Course Description

This course focuses on strategies and tool to create organizational excellence through a continuous cycle of Recruitment & Selection. It explains pragmatic approaches for maintaining distinctive competence in knowledge workers by identifying high quality talent; creation of technological strategies to recruit high quality talent.

Equivalent Course(s)

None

Course Name	Research Project	Credit Hours	6 (6,0)
Course Code	BA 4807	Prerequisite(s)	BA 3603

Course Description

The research project course is the application of the theory and concepts learned across various courses in BABS program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings by using the scientific methods of research.

Equivalent Course(s)

AF 4807

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Professional Development	Credit Hours	3 (3,0)
Course Code	BA 4827	Prerequisite(s)	BA 1104,BA 1206, BA 1105

Course Description

The Professional Development course is designed to improve the ability of students to describe their accomplishments and sell their ideas in situations like: professional networking, company meetings, response to proposals for services, and interviews. It teaches writing skills and workplace integration for new jobs. Particular emphasis is put on verbal communication and preparation for verbal communication. Also, students will learn to create career plans that require them to research career options and potential employers, and prepare a developmental roadmap that will lead them to attain success within the chosen profession.

Equivalent Course(s)

None

Course Name	Project Management	Credit Hours	3 (3,0)
Course Code	BA 4814	Prerequisite(s)	BA 3607

Course Description

The course is split into three parts: Project Initiation, Project Implementation, and Project Termination. Topics include: definition of a project, importance of project management, project life cycle, types of projects, project management and related industries, project initiation and selection, project manager, project organization, project planning, conflicts and negotiation, project implementation, budgeting and cost estimation, scheduling, resource allocation, monitoring and information systems, project control, project termination, and project auditing. Furthermore, the course covers project feasibility study, format of feasibility study, contents of feasibility study, and making accurate estimates.

Equivalent Course(s)

Finance Elective, SCM Elective, BST 2XXX

Course Name	Operations & Supply Chain Management	Credit Hours	3 (3,0)
Course Code	BA 4128	Prerequisite(s)	BA 1203

Course Description

This course covers study of the process directly related to the creation and distribution of goods and services. Increasingly, these operations are taking place outside the boundaries of a traditional enterprise. This course teaches students how to analyze processes, ensure quality, create value, and manage the flow of information, products and services across a network of customers, enterprises and supply chain partners.

Equivalent Course(s)

None

1.1.2 Bachelor of Arts in Business Studies (BABS)

Course Name	Managing Across Global Environment	Credit Hours	3 (3,0)
Course Code	BA 4127	Prerequisite(s)	BA 1203

Course Description The purpose of this course is to explore cultural dimensions of international management in view of increasing cultural differences between individuals and groups within and between organizations as a result of globalization. Culture is defined in its widest sense as the accumulation of knowledge, experience, beliefs, values, attitudes, meanings, hierarchies, religion, notions of time, roles, spatial relations, concepts of the universe, and material objects and possessions: acquired by a group of people in the course of generations through individual and group behavior. Thus culture is communication and communication is culture.

Equivalent Course(s) None

1.1 Bachelor

1.1.2 Bachelor of Science in Accounting & Finance (BSA&F)

Students enrolled in the BS (A&F) program are required to complete 46 courses with a 6 credit hour Research Project within seven (7) years. The break-up of 46 courses and project (144 credit hours) is as follows:

- 46 Compulsory Courses (138 Credit Hours)
- 1 Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
AF 1101	Business Mathematics	35
AF 1102	Computer Concepts and Applications	35
AF 1104	Introduction to Financial Accounting	35
AF 1105	Pakistan Studies	36
AF 1203	Communication Skills	36
AF 1205	Islamic Studies/Humanities	36
Spring Semester		
AF 1103	English Comprehension	37
AF 1106	Principles of Management	37
AF 1201	Advanced Financial Accounting	37
AF 2303	Introduction to Psychology	38
AF 2304	Introduction to Sociology	38
AF 2405	Principles of Micro Economics	38
Second Year		
Fall Semester		
AF 1202	Calculus for Business Studies	38
AF 1206	Principles of Marketing	39
AF 2302	Cost Accounting	39
AF 3503	Business Ethics	39
AF 3505	Principles of Macro Economics	39
AF 4703	Introduction to Business Finance	40
Spring Semester		
AF 2301	Business and Technical English Writing	40
AF 2305	Organizational Behavior	40
AF 2401	Management Accounting	41
AF 2402	Management Information Systems	41
AF 2404	Money and Banking	41
AF 2406	Statistics and Probability	42

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
AF 3501	Accounting and Financial Information Systems	42
AF 3502	Auditing	42
AF 3506	Statistical Inference	43
AF 3603	E-Commerce	43
AF 3606	Taxation	43
AF 3608	Islamic Banking and Finance	43
Spring Semester		
AF 1204	Introduction to Human Resource Management	44
AF 2403	Marketing Management	44
AF 3607	Corporate Accounting	44
AF 4701	Business and Labor Law	45
AF 4702	Financial Management	45
AF 3609	Business Research Methodologies	45
Fourth Year		
Fall Semester		
AF 4708	Financial Risk Management	46
AF 4704	Islamic Financial System	46
AF 4707	Company Law	46
AF 4801	Corporate Finance	46
AF 4804	Investment Analysis and Portfolio Management	47
AF 4805	Management of Financial Institutions	47
Spring Semester		
AF 2306	Pakistan Economic Policy	47
AF 3504	Entrepreneurship and Small Business Management	48
AF 3605	Financial Reporting	48
AF 4802	Final Project	48
AF 4803	International Financial Management	49

All courses may not be offered every year. Alternate courses may be substituted as and when required.

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

The description of 46 compulsory courses and the Research Project, as required for the BS (A&F) degree, is given below:

Course Name	Business Mathematics	Credit Hours	3 (3,0)
Course Code	AF 1101	Prerequisite(s)	None

Course Description

The aim of this course is to prepare students to solve economic and managerial problems through mathematical concepts. This course is covered in three parts; first part is based on systems of linear equations and its solutions to provide preliminary concepts, construction of linear equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule & inverse method to solve system of linear equations. The second part develops the concept of linear and nonlinear functions, and their application, linear programming. The third part provides mathematics for finance, which covers simple, and compound interest rate computations and present and future annuity calculations.

Equivalent Course(s)

BIO 1107, BA 1204, EN 1101

Course Name	Computer Concepts and Application	Credit Hours	3 (3,0)
Course Code	AF 1102	Prerequisite(s)	None

Course Description

This course deals with the introduction to information technology, understanding the computer system, computer hardware, operating system, application software, programming languages, files and data basics, data communication, networking basics, computer graphics, computer security and controls, MS Word, MS Excel, MS Access, MS Power Point, MS Project and Databases.

Equivalent Course(s)

BA 1103, BA1108, CSC 1104, BIO 1104, EN 1102, BST 1102

Course Name	Introduction to Financial Accounting	Credit Hours	3 (3,0)
Course Code	AF 1104	Prerequisite(s)	None

Course Description

This course covers the purpose and nature of accounting, forms of business enterprises, accounting information users, Generally Accepted Accounting Principles, accounting equation, accounting process, accounting cycle, ledgers and entries, accounting for receivables, inventory and depreciation.

Equivalent Course(s)

BA 1101, EN 1103

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Pakistan Studies	Credit Hours	6 (6,0)
Course Code	AF 1105	Prerequisite(s)	BA 5501

Course Description	This course provides an introduction to the history of Pakistan with reference to pre- and post-independence eras, and the contribution of different governments in nation's social, economic and legislative development over years.
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Equivalent Course(s)	ME 2306
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Course Name	Communication Skills	Credit Hours	3 (3,0)
Course Code	AF 1203	Prerequisite(s)	None

Course Description	In this course student' learns the principles of a good presentation and has the opportunity to practice and experience these principles during this highly participative course. The course explores in detail, both verbal and non-verbal communication characteristics, and the importance of body-language expressions. Students are challenged through participative exercises with focus on active listening and observation techniques, that aim to make them competent in all facets of effective speech communication.
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Equivalent Course(s)	CSC 2101, ME 1101, BA 1206, EN 1106
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Course Name	Islamic Studies/Humanities	Credit Hours	3 (3,0)
Course Code	AF 1205	Prerequisite(s)	None

Course Description	Islamic Studies gives an introduction to basic principles of Islam, followed by topics, such as; Ibadaat (Worship), Amr Bil Maroof wa Nahi anl Munkir (i.e. commands and prohibition) , Islam's concept of knowledge, comparison with science, life history of the Prophet Muhammad (Peace and Blessings of Allah be upon Him), unity of Ummah ; Kasb-e-Halal (lawful earning) and obligations of a Muslim. In addition, fundamental human rights and minorities, Islamic society, maintaining identity in a non-Islamic state, Islamic politics, problems faced by Muslims and the status of women in Islam are covered.
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Equivalent Course(s)	ME 1106
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1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	English Comprehension	Credit Hours	3 (3,0)
Course Code	AF 1103	Prerequisite(s)	None

Course Description

This course covers comprehending problems and statements, developing arguments, and communicating ideas clearly and concisely. It also focuses on grammar, forms of punctuation, forms of speech, sentence and paragraph construction, composition, comprehension, writing styles, presentations, verbal communication skills, formal and informal presentations, interactive discussions, and role-playing.

Equivalent Course(s)

CSC 1102, MD 1122, SS 1116, BIO 1111, BA 1105, BST 1103

Course Name	Principles of Management	Credit Hours	3 (3,0)
Course Code	AF 1106	Prerequisite(s)	None

Course Description

This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future of management and society.

Equivalent Course(s)

CSC 1102, MD 1122, SS 1116, BIO 1111, BA 1105, BST 1103

Course Name	Advanced Financial Accounting	Credit Hours	3 (3,0)
Course Code	AF 1201	Prerequisite(s)	None

Course Description

This course builds up on the Introductory Accounting course and presents the underlying framework and concepts of Financial Accounting in the context of overall business environment. Financial accounting is the basic means of recording and reporting financial information in a business. Students will learn how accounting supports economic decision making and provides value to entities and society. Students will discover the uses of financial statements and related information, and will expand their knowledge about types of business organizations by learning about merchandising companies. Topics examined include those related to corporate financial position, operating results, and financial assets. Students will also study the basic accounting system and will be shown how the various accounting alternatives for recording financial transactions impact results.

Equivalent Course(s)

BA 1201

1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Introduction to Psychology	Credit Hours	3 (3,0)
Course Code	AF 2303	Prerequisite(s)	None

Course Description This course covers the basics of psychological features of human behavior with applications in real life situations. In addition, the aspects of personal growth and understanding are covered. Topics include human information processing, learning and memory, motivation, development, language acquisition, social psychology, and personality.

Equivalent Course(s) MD 2424, BA 2306, BA 2312, SS 2306, EN 1104

Course Name	Introduction to Sociology	Credit Hours	3 (3,0)
Course Code	AF 2304	Prerequisite(s)	None

Course Description This course focuses on three central themes; social change, social inequality, and social harmony versus conflict. It combines selective theoretical texts with case studies to understand the mechanisms and institutions that can trigger, foster, sustain, or undermine each of the three processes. In addition, the course covers the work of major sociological thinkers and the influence of sociology on modernization, race, citizenship, culture, gender, society, and economic development

Equivalent Course(s) BA 2306, BA 2307, MD 1104, SS 2307, EN 1203

Course Name	Principles of Micro Economics	Credit Hours	3 (3,0)
Course Code	AF 2305	Prerequisite(s)	None

Course Description Microeconomics covers how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production.

Equivalent Course(s) SS 1105, BA 5302, BA 1102, EN 1205, BST 1105

Course Name	Calculus for Business Studies	Credit Hours	3 (3,0)
Course Code	AF 1202	Prerequisite(s)	AF 1101

Course Description This course covers derivatives, results of differentiation, derivatives of logarithmic exponential and trigonometric functions, differentials, growth and decay models, definite and indefinite integrals, techniques of integration, integrals involving logarithmic, exponential and trigonometric functions, integration by tables, area under curve and between curves, functions of several variables, partial derivatives and their application to optimization.

Equivalent Course(s) None

1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Principles of Marketing	Credit Hours	3 (3,0)
Course Code	AF 1206	Prerequisite(s)	None

Course Description This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s) BA 5404, BA 2303, EN 2305, BST 1205

Course Name	Cost Accounting	Credit Hours	3 (3,0)
Course Code	AF 2302	Prerequisite(s)	AF 1201

Course Description Cost Accounting covers all key cost accounting topics, including inventory valuation, job costing, process costing, and standard costing. The course also covers the role of the cost accountant in setting prices, not only to outside customers, but also to other subsidiaries. The course delves into many other areas of concern to the cost accountant, including target costing, constraint analysis, capital budgeting, the cost of quality, and even cost collection systems.

Equivalent Course(s) BA 2408, BA 5411, BST 1202

Course Name	Business Ethics	Credit Hours	3 (3,0)
Course Code	AF 3503	Prerequisite(s)	AF 1106

Course Description This course introduces contemporary and controversial ethical issues faced by the business community. Topics include: moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students would be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.

Equivalent Course(s) BA 2403, EN 2402

Course Name	Principles of Macro Economics	Credit Hours	3 (3,0)
Course Code	AF 3505	Prerequisite(s)	AF 2405

Course Description This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.

Equivalent Course(s) BA 5402, SS 1205, BA 1202, EN 2303, BST 1204

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	AF 4703	Prerequisite(s)	AF 1201

Course Description This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.

Equivalent Course(s) BA 5401, BA 2301, EN 2301, BST 1203

Course Name	Business and Technical English Writing	Credit Hours	3 (3,0)
Course Code	AF 2301	Prerequisite(s)	AF 1203, AF1103

Course Description This course helps students to analyze and produce typical office documents, such as letters, memoranda, presentations, proposals, and reports. Through individual and collaborative projects students develop purpose-driven messages that reflect the needs of professional audiences and the physical, stylistic, and social constraints of various media, genres, and situations and learn revising fact sheets according to plain language principles, developing clear instructions, and conducting and reporting on usability tests.

Equivalent Course(s) None

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	AF 2305	Prerequisite(s)	AF 2303

Course Description This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s) BA 3504, BA 5207, EN 2306

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Management Accounting	Credit Hours	3 (3,0)
Course Code	AF 2401	Prerequisite(s)	AF 2302

Course Description

In this course student study accounting concepts and reporting techniques applied in a management decision-making context. It covers analysis of accounting data with real-world case studies, presentation of analysis, conclusions, and recommendations. In addition it covers managerial accounting topics including: cost accounting and the behavior of costs, budgeting, differential analysis, responsibility accounting, balanced score card, performance measurement and monitoring. Also, reporting techniques involving the use of current spreadsheet and graphic presentation technology are covered.

Equivalent Course(s)

None

Course Name	Management Information Systems	Credit Hours	3 (3,0)
Course Code	AF 2402	Prerequisite(s)	AF 1102

Course Description

This course covers different information technology applications in business for efficient management of business operations by providing support to decision makers for strategic business decisions. The course examines various corporate frameworks for information management and their utility.

Equivalent Course(s)

BA 5403, BA 4704, BST 2304

Course Name	Money and Banking	Credit Hours	3 (3,0)
Course Code	AF 2404	Prerequisite(s)	AF 3505

Course Description

This course deals with the history, evolution and function of money. The course essentially delves into the following key topics: monetary policies which are aligned in accordance to the monetary systems, responsibilities of SBP as central bank, controlling money supply in the economy, operations and functions of commercial banks, role of other financial intermediaries, key financial instruments available in the market. In addition, commodity markets, hedging instruments, different functions of treasury, corporate and consumer banking department are introduced.

Equivalent Course(s)

BA 2401

1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Statistics and Probability	Credit Hours	3 (3,0)
Course Code	AF 2406	Prerequisite(s)	AF 3505

Course Description This basic course aims to enhance the capacity of the students to solve the research problems by focusing on four areas; introduction to statistics, types of data, frequency distribution, graphs and charts, measures of central tendency, and measures of dispersion; concept of curve fitting techniques, regression analysis, correlation analysis, time series analysis; and index numbers, counting techniques, MS Excel tools for statistics using add-on analysis tool pack.

Equivalent Course(s) BA 5305, BA 2305, BIO 1208, EN 2304, BA 2311

Course Name	Accounting and Financial Information Systems	Credit Hours	3 (3,0)
Course Code	AF 3501	Prerequisite(s)	AF 2401

Course Description This course covers the knowledge and skills needed to function within cutting edge accounting information systems that integrate information technology and software in the transactions control procedures and financial reporting cycles. It will also cover, how to be proactive accountants to improve the analysis and design of the Accounting Information Systems (AIS) to add a real value to business organizations, protect business information and its net worth. course will encompass issues such as advising businesses about security risks which affect the business internal control systems over financial documentation, record keeping and reporting. In addition, the course would include using accounting software in designing an accounting information system for a small-to-medium size business.

Equivalent Course(s) None

Course Name	Auditing	Credit Hours	3 (3,0)
Course Code	AF 3502	Prerequisite(s)	AF 1104, AF1201

Course Description This course introduces students to fundamental auditing concepts, principles and procedures. It addresses issues concerning regulations, appointment of auditors, audit risk, materiality, and characteristics of evidence, internal control, analytical procedures, computerized audit tools, fraud, audit report and auditing theory.

Equivalent Course(s) None

1.13 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Statistical Inference	Credit Hours	3 (3,0)
Course Code	AF 3506	Prerequisite(s)	AF 2406

Course Description The course covers probability; probability distributions; Binomial, Poisson, Hyper-geometric, Chi Square distribution, Normal distribution, sampling distribution; estimation; hypothesis testing; one-population test, two-populations test and analysis of variance; and computer applications in statistics.

Equivalent Course(s) SS 2418, BA 3605, BST 2306

Course Name	E-Commerce	Credit Hours	3 (3,0)
Course Code	AF 3603	Prerequisite(s)	AF 2406

Course Description A comprehensive overview of how firms compete in today's environment with a focus on strategic choices and the infrastructures affecting e-commerce including technology, capital, media, and public policy. The strategy formulation process is covered by focusing on its six interrelated decision areas: market opportunity analysis, business models, customer interface, market communications, implementation and metrics, as well as the four infrastructures affecting the strategy process: technology, media, capital, and public policy.

Equivalent Course(s) SS 2418, BA 3605, BST 2306

Course Name	Taxation	Credit Hours	3 (3,0)
Course Code	AF 3606	Prerequisite(s)	None

Course Description This course covers operations and scope of the Pakistan Tax System as applicable to individuals, unincorporated bodies and persons. Topics include Tax System, rights and obligations of taxpayers, implication of non-compliance, computation of tax for persons, unincorporated bodies and companies, capital gains, taxation issues, and sales tax.

Equivalent Course(s) None

Course Name	Islamic Banking and Finance	Credit Hours	3 (3,0)
Course Code	AF 3608	Prerequisite(s)	None

Course Description This course explores the growth of Islamic banking into an international multi-billion dollar venture covering both the Islamic and non-Islamic worlds, the relationship between finance and Islamic law, basic principles of Islamic economics, the framework of Islamic finance, the nature of Islamic banking and finance, the concept of money in Islam, the prohibition of interest, the ethical dimension of Islamic banking, the financing mechanisms used in Islamic banking and the supervision of Islamic banks both by the central banks and by the Shariah supervisory boards, and how Islamic banking differs from the conventional interest-based banking system

Equivalent Course(s) None

1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Introduction to Human Resource Management	Credit Hours	3 (3,0)
Course Code	AF 1204	Prerequisite(s)	AF 2305

Course Description	This course examines the role of the human resource professional, as a strategic partner, in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as Human Resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, and rising benefit costs), and best practices of employers of choice.
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Equivalent Course(s)	BA 5205, BA 4804, EN 3602, BST 2303
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Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	AF 2403	Prerequisite(s)	AF 1206

Course Description	This course introduces the concept of customer and market-driven management. This course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.
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Equivalent Course(s)	BA 5106, BA 3602, BST 2305
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Course Name	Corporate Accounting	Credit Hours	3 (3,0)
Course Code	AF 3607	Prerequisite(s)	AF 1104, AF 1201

Course Description	This course introduces students to the corporate accounting and the external financial reporting environment. The focus throughout the course is on the preparation of general purpose financial reports that comply with the Companies ordinance 1984 and international accounting standards issued by the International Accounting Standards Board (IASB). The course begins by covering the regulatory environment in which general purpose financial statements are prepared. It then covers the conceptual framework, principles of disclosure and requirements for the presentation of the financial statements, measurement principles applied in the preparation of financial statements, accounting for Leases, group of companies, amalgamation, banking & leasing companies. We then consider business combinations and liquidations as an introduction to the main topic of the course of accounting. A primary objective of the course is for students to gain an understanding of how to prepare consolidated financial statements. The next topic is accounting for banking companies. The course concludes with an overview of insolvency and liquidation.
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Equivalent Course(s)	BA 5106, BA 3602, BST 2305
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1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Business and Labor Law	Credit Hours	3 (3,0)
Course Code	AF 4701	Prerequisite(s)	None

Course Description This course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws and Intellectual Property Laws. Also, the course would cover Factories Act and Child Labor Act along with brief overview of different laws related to labor force.

Equivalent Course(s) None

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	AF 4702	Prerequisite(s)	AF 4703

Course Description The syllabus for Financial Management, is designed to equip candidates with the skills that would be expected from a finance manager responsible for the finance function of a business. It prepares candidates for more advanced and specialist study in Corporate Finance. Therefore, the course starts by introducing the role and purpose of the financial management function within a business. Before looking at the three key financial management decisions of investing, financing, and dividend policy, the syllabus explores the economic environment in which such decisions are made. The next area introduced is financing decisions. This section of the syllabus starts by examining the various sources of business finance and how much finance can be raised from within the business. It also looks at the cost of capital and other factors that influence the choice of the type of capital a business will raise. The principles underlying the valuation of business and financial assets, including the impact of cost of capital on the value of business, is also covered. The syllabus finishes with an introduction to, and examination of, investing decisions. This is done in two stages - investment in (and the management of) working capital and the appraisal of long-term investments.

Equivalent Course(s) BA 5105, BA 3601, BST 2302

Course Name	Business Research Methodologies	Credit Hours	3 (3,0)
Course Code	AF 3609	Prerequisite(s)	AF 3506

Course Description This course provides the understanding of basic business research methods in the field of marketing, human resource management, and finance. The subject encompasses the theory and practice of research; and covers concepts, elements, and process of conducting business research. It builds the specific conceptual knowledge regarding identification and elicitation of research problem, development of research proposal, reviewing the literature, using suitable research methodology, data collection and analysis tools and writing research report. The focus of the course is on basic concept building and relating the research to real life business problems.

Equivalent Course(s) SS 3504, BA 3603, BST 2301

1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Financial Risk Management	Credit Hours	3 (3,0)
Course Code	AF 4708	Prerequisite(s)	AF 4702

Course Description	This course focuses on the concepts and techniques that managers use to achieve desired risk-return combinations. The course gives particular attention to the techniques and concepts associated with derivatives, that includes hedging techniques using options and futures contracts.
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Equivalent Course(s)	BA 5139
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Course Name	Islamic Financial System	Credit Hours	3 (3,0)
Course Code	AF 4704	Prerequisite(s)	AF 3608

Course Description	This course provides an introduction to the concepts of Islamic economics and Divine Guidance in Islam for the development of an interest-free economy based on the principles of socio-economic justice. The course also explains the objective (the maqasid) of Shari'ah that provides a moral framework for conducting business and personal dealings with justice and fairness. The course content includes, Islamic Economics, Concept of Moral Economy, Evaluation of Islamic Banking, Islamic Commercial Law and Contracts, Islamic Financial Markets and Products, Corporate Governance and Financial Accounting Concepts in Islamic Banking.
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Equivalent Course(s)	None
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Course Name	Company Law	Credit Hours	3 (3,0)
Course Code	AF 4707	Prerequisite(s)	None

Course Description	This course covers Company Law 1984 with detailed discussion over major sections affecting the companies and their operations in Pakistan. Also, brief coverage of regulations governing Insurance, exchange and other type of companies is included in the course.
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Equivalent Course(s)	None
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Course Name	Corporate Finance	Credit Hours	3 (3,0)
Course Code	AF 4801	Prerequisite(s)	AF 4702

Course Description	This course covers corporate finance and capital markets, emphasizing the financial aspects of managerial decisions. It touches on all areas of finance, including the valuation of real and financial assets, risk management and financial derivatives, the trade-off between risk and expected return, and corporate financing and dividend policy. Also, the course draws heavily on empirical research to help guide managerial decisions.
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Equivalent Course(s)	None
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1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Investment Analysis and Portfolio Management	Credit Hours	3 (3,0)
Course Code	AF 4804	Prerequisite(s)	AF 4702

Course Description This course is designed to help students to develop analytical skills required in portfolio and investment management. It includes statistical tools, fundamental and technical analysis which will help in decision making process while selecting asset class and securities for individuals and institutions.

Equivalent Course(s) BA 5232

Course Name	Management of Financial Institutions	Credit Hours	3 (3,0)
Course Code	AF 4805	Prerequisite(s)	AF 2404

Course Description Management of financial institutions reviews a broad range of institutions that accept money from savers and invest that money in stocks, bonds or other assets. The course will explain how each of these institutions functions in terms of economics and how each is regulated by government agencies. It also covers passthrough institutions where the savers receive the return on their investments minus management expenses – mutual funds, hedge funds, and sovereign funds. In addition, it covers institutions offering savers some form of guaranteed returns – banks, insurance companies. Finally, the course will cover pension plans; both defined contribution and defined benefit plans.

Equivalent Course(s) BA 3501, BA 5135

Course Name	Pakistan Economic Policy	Credit Hours	3 (3,0)
Course Code	AF 2306	Prerequisite(s)	AF 3505

Course Description This course is designed to provide students with critical information and knowledge about Pakistan economic environment. Starting with the historical background, covering topics such as agriculture, industry, public finance and social sector development. The course also reviews government interventions, like fiscal policy, monetary policy, trade policy, and income policies. Also included in this course are topics like institutional reforms, deregulation, privatization, denationalization, globalization and other policies/factors that affect business environment in Pakistan. The course ends with discussion on challenges ahead for the Pakistan Economy in the regional and global perspectives.

Equivalent Course(s) None

1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	Entrepreneurship and Small Business Management	Credit Hours	3 (3,0)
Course Code	AF 3504	Prerequisite(s)	AF 1106, AF 4703

Course Description	This course focuses on ways in which entrepreneurs recognize opportunities, generate ideas, and organize resources to plan and run successful ventures that enable them to achieve their goals. Students are required to create an entrepreneurial venture as part of a practical learning activity. Through this hands-on experience, case studies, class discussions and text book readings students will have an opportunity to develop the values, traits, and skills most often associated with successful entrepreneurs.
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Equivalent Course(s)	BA 3502, BA 5406, , BA 3517, EN 2404
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Course Name	Financial Reporting	Credit Hours	3 (3,0)
Course Code	AF 3605	Prerequisite(s)	AF 3607

Course Description	This course covers accounting standards such as, IAS 1: Presentation of Financial Statements, IAS 18 : Revenue, IAS 2 : Inventories, IAS 7: Statement of Cash Flows, IAS 8: Accounting policies, Changes in accounting Estimates and Errors, IAS 16: Property , Plant and Equipment, IAS 17 : Leases, IAS 10 : Events after the reporting period, IAS 23 : Borrowing Costs, IAS 12 : Income Taxes, IAS 33 : Earnings per share, IAS 11: Accounting For Construction Contracts, IAS 37 : Provisions , Contingent liabilities and Contingent Assets, IFRS 1 : First Time Adoption of Financial Reporting Standards, IFRS 2 : Share Based Payments
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Equivalent Course(s)	None
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Course Name	Final Project	Credit Hours	3 (3,0)
Course Code	AF 4802	Prerequisite(s)	AF 3609

Course Description	The Final project is the application of the theory and concepts learned across various courses in BS A&F program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from the accounting and finance. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.
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Equivalent Course(s)	BA 4807
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1.1.3 Bachelor of Science in Accounting & Finance (BSA&F)

Course Name	International Financial Management	Credit Hours	3 (3,0)
Course Code	AF 4803	Prerequisite(s)	AF 4801

Course Description This course covers the nature and purposes of corporate financial management in the international context. The contents include: international investment and financing techniques, exchange risk management, including accounting and taxation aspects. Also, Hands-on case studies and simulations would cover, how to manage a global company's financing and investment decisions, including M&A and divestitures, and how to measure and manage the company's exposure to exchange rate and international interest rate risks. In addition, learning will extend to topics on, how companies use banks, markets such as the Eurobond and currency option markets, and techniques such as currency swaps, lease financing and specialized structured financing techniques.

Equivalent Course(s) None

1.1 Bachelor

1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Students enrolled in the BS (Entrepreneurship) program are required to complete 45 courses with a 9 credit hour Capstone Project within seven (7) years. The break-up of 45 courses and project (144 credit hours) is as follows:

- 41 Compulsory Courses (123 Credit Hours)
- 4 Elective³ Courses (12 Credit Hours)
- 1 Capstone Project (9 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
EN 1103	Introduction to Accounting	52
EN 1105	Islamiat and Pakistan Studies/Humanities	52
EN 1102	Computer Application in Business	52
EN 1104	Introduction to Human Behavior	52
EN 1101	Business Mathematics and Calculus	53
EN 1106	Oral and Written Communication	53
Spring Semester		
EN 1203	Introduction to Sociology	53
EN 1201	Accounting for Business Operations	54
EN 1205	Microeconomics	54
EN 1202	Business and Electronic Communication	54
EN 1206	Personal Management	54
EN 1204	Management Principles	55
Second Year		
Fall Semester		
EN 2303	Macroeconomics	55
EN 2302	Logic and Critical Thinking	55
EN 2301	Introduction to Business Finance	55
EN 2305	Marketing Principles	56
EN 2304	Managerial Statistics	56
EN 2306	Organizational Behavior	56
Spring Semester		
EN 2405	Media Management	56
EN 2404	Introduction to Entrepreneurship	57
EN 2401	Business and Labour Laws	57
EN 2403	Consumer Behavior	57
EN 2406	Operation Management	58
EN 2402	Business Ethics	58

³ List of Electives is given in Appendix B.

Course Code	Course Title	Page #
Third Year		
Fall Semester		
EN 3502	Business Plan Development	58
EN 3501	Business Analysis and Forecasting	59
EN 3503	Entrepreneurial Marketing	59
EN 3504	Finance and Taxation for Entrepreneurs	59
EN 3506	Sustainability and Technology	60
EN 3505	Marketing Research	60
Spring Semester		
EN 3609	Capstone Project-I	60
EN 3603	Launching a Venture	60
EN 3602	Human Resource Management	61
EN 3605	Product Innovation and Design	61
EN 3601	Analysis of Pakistani Industries	61
EN 3604	Logistics and Supply Change Management	61
Fourth Year		
Fall Semester		
EN 4709	Capstone Project-II	62
EN 4701	Issues in Pakistan's Economy	62
EN 4702	Financing a Venture	62
EN 4703	Emerging Media	63
EN 4xxx	Elective-I	244
EN 4xxx	Elective-II	244
Spring Semester		
EN 4809	Capstone Project-III	63
EN 4801	Business Policy and Design	63
EN 4802	Innovative Business Models	64
EN 4803	SME Management	64
EN 4xxx	Elective-III	244
EN 4xxx	Elective-IV	244

All courses may not be offered every year. Alternate courses may be substituted as and when required.

Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

The description of 46 compulsory courses and the Research Project, as required for the BS-Entrepreneurship degree, is given below:

Course Name	Introduction to Accounting	Credit Hours	3 (3,0)
Course Code	EN 1103	Prerequisite(s)	None

Course Description	This course covers the purpose and nature of accounting, forms of business enterprises, accounting information users, generally accepted accounting principles, accounting equation, accounting process, accounting cycle, ledgers and entries, accounting for receivables, inventory and depreciation.
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Equivalent Course(s)	BA 1101, AF 1104
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Course Name	Islamiat and Pakistan Studies/Humanities	Credit Hours	3 (3,0)
Course Code	EN 1105	Prerequisite(s)	None

Course Description	This course provides an introduction to the history of Pakistan with reference to pre- and post-independence eras, and the contribution of different governments in nation's social, economic and legislative development over years. The second part of the course focuses on Islam and the present-day Muslim world.
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Equivalent Course(s)	CSC 1105, MD 2402, SS 1109, BIO 2303, BA1106, AF 1205
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Course Name	Computer Application in Business	Credit Hours	3 (3,0)
Course Code	EN 1102	Prerequisite(s)	None

Course Description	This course deals with the introduction to information technology, computer system, computer hardware, operating system, application software, programming languages, files and data basics, data communication, networking basics, computer graphics, computer security and controls, MS Word, MS Excel, MS Access, MS Power Point, MS Project and Databases used in a business environment.
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Equivalent Course(s)	BA 1103, CSC 1104, BIO 1104, AF 1102, BA 1108, BST 1102
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Course Name	Introduction to Human Behavior	Credit Hours	3 (3,0)
Course Code	EN 1104	Prerequisite(s)	None

Course Description	This course covers the basics of psychological features of human behavior with applications in real life situations and business environment. In addition, the aspects of personal growth and understanding are also covered.
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Equivalent Course(s)	MD 2424, BA 2306, SS 2306, BA 2312, AF 2303
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Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Business Mathematics & Calculus	Credit Hours	3 (3,0)
Course Code	EN 1101	Prerequisite(s)	None

Course Description

The aim of this course is to prepare students to solve economic and managerial problem through mathematical concepts. This course is covered in four parts, first part is based on systems of linear equations and its solutions; provide preliminary concept, construction of linear equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule & inverse method to solve system of linear equations. The second part develops the concept of linear and nonlinear functions, and their application, and linear programming. The third part provides mathematics for finance, which covers simple, and compound interest rate computations and present and future annuity calculations. The last part of the course provides differentiation of basic functions, higher order differentiation, optimization of functions, definite and indefinite integration, and applications of integration.

Equivalent Course(s)

BIO 1107, BA 1204, AF 1101

Course Name	Oral and Written Communication	Credit Hours	3 (3,0)
Course Code	EN 1106	Prerequisite(s)	None

Course Description

This course is aimed at improving English language communication and presentation skills, specifically aimed for business students. With a multidimensional approach, the course enables the students to practice the use of English in everyday usage and professional situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to make effective presentations, with an awareness of the audience and utilizing appropriate verbal and non-verbal communication with the ability to respond to comments and negotiate their own point of view persuasively. They will also learn to express their ideas in their writings displaying the ability to describe, argue and analyze well. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in effective communication in formal and informal contexts.

Equivalent Course(s)

None

Course Name	Accounting for Business Operation	Credit Hours	3 (3,0)
Course Code	EN 1201	Prerequisite(s)	EN1103

Course Description

This course focuses on cost allocation, process costing systems and spoilage. Specific topics include relevancy of revenues and costs, cost allocation decisions (joint and byproducts), process costing systems, factory overhead applied, standard costing: setting of standards, analysis of variance and controlling, and costing material.

Equivalent Course(s)

BA 5411, BA 2408, AF 2302, BST 1202

Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Business and Electronic Communication	Credit Hours	3 (3,0)
Course Code	EN 1202	Prerequisite(s)	EN 1106

Course Description	This introductory course teaches students to communicate at both personal and professional levels. In addition, it develops competency in all forms of communication. Also, this course introduces communication theories and strategies for a variety of business situations. Using a developmental approach to business communication, the course examines methods for organizing ideas, analyzing data, addressing diverse concerns, presenting information, and developing a professional communication style.
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Equivalent Course(s)	BA 5304, BA 5418, BA 2406
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Course Name	Introduction to Sociology	Credit Hours	3 (3,0)
Course Code	EN 1203	Prerequisite(s)	None

Course Description	This course focuses on three central themes; social change, social inequality, and social harmony versus conflict. It combines selective theoretical texts with case studies to understand the mechanisms and institutions that can trigger, foster, sustain, or undermine each of the three processes. The course covers the work of major sociological thinkers and the influence of sociology on modernization, race, citizenship, culture, gender, society, and economic development.
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Equivalent Course(s)	BA 2306, MD 1104, SS 2307, BA 2307, AF 2304
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Course Name	Management Principles	Credit Hours	3 (3,0)
Course Code	EN 1204	Prerequisite(s)	None

Course Description	This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future of management and society.
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Equivalent Course(s)	BA 5303, BA 5419, BA 1203, BST 1101, AF 1106
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Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	EN 1205	Prerequisite(s)	None

Course Description	Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production.
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Equivalent Course(s)	SS 1105, BA 5302, AF 2405, BA 1102, BST 1105
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Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Personal Management	Credit Hours	3 (3,0)
Course Code	EN 1206	Prerequisite(s)	None

Course Description

This course teaches students to discover themselves and make positive changes to achieve greater effectiveness at work, and in personal and interpersonal relationship. Students learn the combination of factors such as personality, communication style, self-esteem, time management, conflict, negotiation and others that impact their personal effectiveness. They also learn methods, and techniques required to work effectively and confidently with others, using time management, negotiation and presentation skills with a positive mindset.

Equivalent Course(s)

BA 1104, BA 5311, BA 1109, BST 1106

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	EN 2301	Prerequisite(s)	EN 1201

Course Description

This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.

Equivalent Course(s)

BA 5401, BA 2301, BST 1203, AF 4703

Course Name	Logic and Critical Thinking	Credit Hours	3 (3,0)
Course Code	EN 2302	Prerequisite(s)	EN 1106

Course Description

This course covers scope and laws of logic, deduction and induction, inferences, forms of discourse, emotive words, kinds of disputes and disagreements, rules and fallacies, classical (Aristotelian) logic, standard-form categorical syllogisms and testing, uniform translation, dilemma and enthymemes, and Mills' Methods of scientific investigation. Critical thinking skills and techniques are also introduced.

Equivalent Course(s)

BA 5503, BA 1211

Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	EN 2303	Prerequisite(s)	EN 1205

Course Description

This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.

Equivalent Course(s)

BA 5402, SS 1205, BA 1202, BST 1204, AF 3505

Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	EN 2305	Prerequisite(s)	EN 1204

Course Description This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s) BA 5404, BA 2303, BST 1205, AF 1206

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	EN 2306	Prerequisite(s)	EN 1104

Course Description This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s) BA 5207, BA 3504, AF 2305, BST 2XXX

Course Name	Business and labor Laws	Credit Hours	3 (3,0)
Course Code	EN 2401	Prerequisite(s)	EN 2302

Course Description This course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws and Intellectual Property Laws. Course would also cover Factories Act and Child Labor Act along with brief overview of different laws related to labor force.

Equivalent Course(s) AF 4701, BST 2401, BA 4801

Course Name	Managerial Statistics	Credit Hours	3 (3,0)
Course Code	EN 2304	Prerequisite(s)	EN 1101

Course Description This basic course aims to enhance the capacity of the students to solve the research problems by focusing on four areas; introduction to statistics, types of data, frequency distribution, graphs and charts, measures of central tendency, and measures of dispersion; concept of curve fitting techniques, regression analysis, correlation analysis, time series analysis; and index numbers, counting techniques and MS Excel tools for statistics using add-on analysis tool pack.

Equivalent Course(s) BA 5305, BA 2305, BIO 1208, BA 2311, BST 1206, AF 2406

Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Consumer Behavior	Credit Hours	3 (3,0)
Course Code	EN 2403	Prerequisite(s)	EN 2305

Course Description	This course examines in detail, the complex behavioral processes which determine consumer actions and analyzes the decision patterns in a variety of situations with a special reference to individual and group influences. It is designed to cover contemporary concepts in consumer behavior, objectives, consumer and market segmentation, environmental influence, individual determinants, and consumer buying behavior.
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Equivalent Course(s)	BA 5123, BE 484, BA 3507, BST 2XXX
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Course Name	Introduction to Entrepreneurship	Credit Hours	3 (3,0)
Course Code	EN 2404	Prerequisite(s)	EN 1204

Course Description	This course focuses on ways in which entrepreneurs recognize opportunities, generate ideas, and organize resources to plan and run successful ventures that enable them to achieve their goals. Students are required to create an entrepreneurial venture as part of a practical learning activity. Through this hands-on experience, case studies, class discussions and text book readings students will have an opportunity to develop the values, traits, and skills most often associated with successful entrepreneurs.
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Equivalent Course(s)	BA 5406, BA 4859, BA 3517, BA 3502, AF 3504, BST 2XXX
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Course Name	Media Management	Credit Hours	3 (3,0)
Course Code	EN 2405	Prerequisite(s)	EN 2305

Course Description	This course introduces basic concepts of public relations and how it is different from promotional tools. It discusses various public relations tools, dimensions, and disciplines. It also addresses issues emerging out of modern and emerging communication media and provides a broader perspective of media in Pakistan describing its characteristics and effective ways to interact with them. The course concludes with a brief discussion on event management with an overview of importance of communications during crisis situations.
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Equivalent Course(s)	BA 3508
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Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Operations Management	Credit Hours	3 (3,0)
Course Code	EN 2406	Prerequisite(s)	EN 1204

Course Description This course introduces the concepts of production and operations management. Topics covered represent a blend of concepts from industrial engineering, cost accounting, general management, quantitative methods and statistics. The course topics include some operations and strategic issues such as applied forecasting, aggregate planning, scheduling, shop floor control, total quality management, inventory management, and facility layout and project management. In addition, topics include the complex understanding of services operations management with the help of real life case studies, processes and methodologies applied worldwide.

Equivalent Course(s) BA 3607, BST 2XXX

Course Name	Business Analysis and Forecasting	Credit Hours	3 (3,0)
Course Code	EN 3501	Prerequisite(s)	EN 2304

Course Description This course entails understanding business as a financial system where management makes decisions in three key areas Investment, Financing and Operations. The course will help students analyze profit & loss, balance sheet, and cash flow statements. Using profitability and risk ratios to compare companies across different sizes and industries (Intercompany, Intracompany and Industry Averages). Balance Sheet, Income Statements and Cash flow statement analytics will also be carried out in the course.

Equivalent Course(s) None

Course Name	Business Plan Development	Credit Hours	3 (3,0)
Course Code	EN 3502	Prerequisite(s)	EN 2404

Course Description This course covers the process of identifying and quantifying market opportunities, planning, and starting a new enterprise in the Pakistani market. Students will adopt the lean model methodology and learn how to use a business model canvas to brainstorm, iterate, and develop an idea that is both viable and doable with actual figures and scenarios from the market

Equivalent Course(s) None

Course Name	Entrepreneurial Marketing	Credit Hours	3 (3,0)
Course Code	EN 3503	Prerequisite(s)	EN 2305

Course Description This course covers different methods of conventional and non-conventional marketing carried out by startups and businesses by using market intelligence, guerrilla marketing, subversive marketing, disruptive marketing, radical marketing, viral marketing, convergence marketing and expeditionary marketing. Each reflects an alternative approach to marketing for a startup.

Equivalent Course(s) None

1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Finance and Taxation for Entrepreneurs	Credit Hours	3 (3,0)
Course Code	EN 3504	Prerequisite(s)	EN 2301

Course Description	<p>This course examines the elements of entrepreneurial finance and taxation, partly focusing on start-up ventures and the early stages of company development. The course addresses key questions which challenge all entrepreneurs: how much money can and should be raised; when should it be raised and from whom; what is a reasonable valuation of the company; and how should funding, employment contracts and exit decisions be structured. It aims to prepare students for these decisions, both as entrepreneurs and venture capitalists. The other part of this course examines the elements of entrepreneurial taxation, focusing on how different taxes and understanding of changes in tax laws can change entrepreneurial activities. Key elements that would be considered from taxation point view are: income tax, sales tax, value added tax, service tax, property tax, etc and tax laws and regulation's structure. It aims to prepare students for these decisions, both as entrepreneurs and venture capitalists.</p>
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Equivalent Course(s)	None
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Course Name	Marketing Research	Credit Hours	3 (3,0)
Course Code	EN 3505	Prerequisite(s)	EN 2305

Course Description	<p>This course provides the understanding of basic research techniques. It will introduce the elements and process of conducting business research. It will build the concepts regarding problem identification, development of research problem, eliciting the theoretical framework, developing suitable research methodology, data collection and analysis tools, and report writing.</p>
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Equivalent Course(s)	BA 4707
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Course Name	Sustainability and Technology	Credit Hours	3 (3,0)
Course Code	EN 3506	Prerequisite(s)	EN 2404

Course Description	<p>This course is designed to articulate need for business growth and importance of sustainability practices in parallel. The course will introduce concepts of sustainability, significance and its role in economic, social and environmental settings. Also, the course incorporates social responsibility in value chain of business. In addition, explains role of technology and innovation in sustainable practices.</p>
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Equivalent Course(s)	None
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1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Analysis of Pakistani Industries	Credit Hours	3 (3,0)
Course Code	EN 3601	Prerequisite(s)	EN 2303

Course Description This course is designed to make student understand the characteristics, nature of competition, growth potential, current trends, history, concurrent issues and its importance in context of Pakistan's economic scenario. Also, the course identifies the impact of these prevailing trends on businesses operating in different industries.

Equivalent Course(s) None

Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	EN 3602	Prerequisite(s)	EN 2306

Course Description This course examines the role of the human resource professional, as a strategic partner, in managing startups and established businesses. The course introduces concepts, issues and practices in human resource management such as Human Resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, and rising benefit costs), and best practices of employers of choice.

Equivalent Course(s) BA 5205, BA 4804, BST 2303, AF 1204

Course Name	Launching a Venture	Credit Hours	3 (3,0)
Course Code	EN 3603	Prerequisite(s)	EN 3502

Course Description This course examines the role of the human resource professional, as a strategic partner, in managing startups and established businesses. The course introduces concepts, issues and practices in human resource management such as Human Resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, and rising benefit costs), and best practices of employers of choice.

Equivalent Course(s) Nonie

1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Logistics and Supply Chain Management	Credit Hours	3 (3,0)
Course Code	EN 3604	Prerequisite(s)	EN 2406

Course Description	This course will provide understanding of overall logistics and supply chain process for startups. Also, it will cover various activities like transportation, production, distribution, warehousing, inventory management, purchasing of raw material and handling of semi produced products, and customer services. In addition, it will equip students with various tools, models and theories to operate in a business environment.
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Equivalent Course(s)	BA 4116
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Course Name	Product Innovation and Design	Credit Hours	3 (3,0)
Course Code	EN 3605	Prerequisite(s)	EN 2404

Course Description	This course is designed to provide students with vital information on the development and launching of a new product or service. The course reviews different stages a product/service has to go through before reaching its final customer.
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Equivalent Course(s)	BA 4859
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Course Name	Capstone Project-I	Credit Hours	3 (3,0)
Course Code	EN 3609	Prerequisite(s)	EN 3505

Course Description	This course is designed to provide students with vital information on the development and launching of a new product or service. The course reviews different stages a product/service has to go through before reaching its final customer.
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Equivalent Course(s)	None
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1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Issues in Pakistan's Economy	Credit Hours	3 (3,0)
Course Code	EN 4701	Prerequisite(s)	EN 3601

Course Description	This course is designed to provide students with critical information and knowledge about Pakistan economic environment. Starting with the historical background, it covers topics such as agriculture, industry, public finance and social sector development. The course also reviews government interventions, like fiscal policy, monetary policy, trade policy, and income policies. Further, the additional topics of this course includes: institutional reforms, deregulation, privatization, denationalization, globalization and other policies/factors that affect business environment in Pakistan. The course ends with discussion on challenges ahead for the Pakistan Economy in the regional and global perspectives.
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Equivalent Course(s)	SS 4249, AF 3609, BA 3609
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Course Name	Finance a Venture	Credit Hours	3 (3,0)
Course Code	EN 4702	Prerequisite(s)	EN 3504

Course Description	This course is for aspiring or active entrepreneurs who want to understand how to secure funding for their company. This course will demystify key financing concepts to give entrepreneurs and aspiring entrepreneurs a guide to secure funding.
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Equivalent Course(s)	None
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Course Name	Emerging Media	Credit Hours	3 (3,0)
Course Code	EN 4703	Prerequisite(s)	EN 2405

Course Description	In this course students will learn how new and emerging media technologies are being integrated into advertising and public relations campaigns, and how they are being used to deliver traditional messages in novel times and spaces. In an increasingly competitive and diversifying media space, communicators are finding new ways to reach their intended audiences. This course will foster an understanding of the roles and limitations of new media for delivering messages and engaging with key audiences, public and markets while allowing students to critically analyze how to best utilize new media to connect with consumers.
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Equivalent Course(s)	BA 4125
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1.1.4 Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Capstone Project-II	Credit Hours	3 (3,0)
Course Code	EN 4709	Prerequisite(s)	EN 3609

Course Description

In this project student's will transform their ideas practically in the market. This stage is not confined to numbers, business plan or any financial statements rather it is utilizing both primary research and secondary research to develop their ideas and taking practical steps to start their company. Also, a mentor entrepreneur in the relevant field will be assigned to facilitate the students with the research and create a prototype product to test in the market for results.

Equivalent Course(s)

None

Course Name	Business Policy and Design	Credit Hours	3 (3,0)
Course Code	EN 4801	Prerequisite(s)	EN 3502

Course Description

The course focuses on creating an understanding on development of company policy and strategy. It will explore the issues faced by startups and business in matters relating sustainability, corporate governance, leadership and policy making.

Equivalent Course(s)

None

Course Name	Innovation Business Models	Credit Hours	3 (3,0)
Course Code	EN 4802	Prerequisite(s)	EN 3603

Course Description

The course introduces students to various modern and unique business models and their critical components. The course will cover traditional and web based platform business models to give insights to the students on their synergy with the business environment.

Equivalent Course(s)

None

Course Name	SME Management	Credit Hours	3 (3,0)
Course Code	EN 4803	Prerequisite(s)	EN 2404

Course Description

This course focuses on the importance and purpose of SMEs highlighting how to carry out efficient and effective small and medium business activities, in local and international markets. Students will learn the different obstacles faced by SMEs related to policy making, development of feasibility studies and interaction with both public and private sector institutions.

Equivalent Course(s)

None

Bachelor of Science in Entrepreneurship (BS Entrepreneurship)

Course Name	Capstone Project-III	Credit Hours	3 (3,0)
Course Code	EN 4809	Prerequisite(s)	EN 4709

Course Description The course will help students to implement the learnings of previous 2 capstone projects and check its success in the chosen market. The course represents the startup feasibility around six core elements, opportunity, innovation, calculated risk-taking, resource leveraging, proactive behavior, and customer intensity. A continuum is involved, to gauge the firm's external environment drive the need for a future entrepreneur to be well prepared against turbulence, discontinuities, rapid changes in technology and economy.

Equivalent Course(s) None

1.1 Bachelor

1.1.5 Bachelor of Business Studies (BBS)

Students enrolled in BBS (Bachelor of Business Studies) degree program are required to complete 22 courses and 6 credit hours Research Project within 4 years. The break-up of 22 courses (72 hours) is as follows:

- 19 Compulsory Courses (57 Credit Hours)
- 3 Elective⁴ Courses (9 Credit Hours)
- 1 Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BST 1103	English Writing Skills	66
BST 1104	Financial Accounting	66
BST 1101	Business Management and Ethics	66
BST 1106	Personal Management	67
BST 1105	Microeconomics	67
BST 1102	Computer Orientation & Packages	67
Spring Semester		
BST 1204	Macroeconomics	67
BST 1205	Marketing Principles	68
BST 1201	Business Communication	68
BST 1206	Statistics and Mathematics for Business	68
BST 1203	Introduction to Business Finance	69
BST 1202	Cost Accounting	69
Second Year		
Fall Semester		
BST 2301	Business Research Methods	69
BST 2303	Human Resource Management	70
BST 2306	Statistical Inference	70
BST 2302	Financial Management	70
BST 2305	Marketing Management	71
BST 2304	Management Information Systems	71
Spring Semester		
BST 2409	Research Project	71
BST 2401	Law and Taxation	71
BST 2xxx	Elective-I	245
BST 2xxx	Elective-II	245
BST 2xxx	Elective-III	245

⁴ List of Electives is given in Appendix B.

Bachelor of Business Studies (BBS)

The description of 19 compulsory courses and the Research Project, as required for the BBS degree, is given below:

Course Name	English Writing Skills	Credit Hours	3 (3,0)
Course Code	BST 1103	Prerequisite(s)	None

Course Description	This course covers comprehending problems and statements, developing arguments, and communicating ideas clearly and concisely. It also focuses on: grammar, forms of punctuation, forms of speech, sentence and paragraph construction, composition, comprehension, writing styles, presentations, verbal communication skills, formal and informal presentations, interactive discussions, and role-playing.
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Equivalent Course(s)	CSC 1102, MD 1122, SS 1116, BA 5317, BIO 1111, BA 1105, AF 1103
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Course Name	Financial Accounting	Credit Hours	3 (3,0)
Course Code	BST 1104	Prerequisite(s)	None

Course Description	This course includes accounting for merchandise business, classified balance sheet, simple and multiple income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, corporation and measuring cash flow statements. Also, MS Excel is used and necessary accounting software is introduced.
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Equivalent Course(s)	BA 5301, BA 1201
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Course Name	Business Management & Ethics	Credit Hours	3 (3,0)
Course Code	BST 1101	Prerequisite(s)	None

Course Description	This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future perspective of management and society. The course also introduces contemporary ethical issues faced by the business community.
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Equivalent Course(s)	BA 1203, BA 5419, EN 1204, AF 1106, BA 1203
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Bachelor of Business Studies (BBS)

Course Name	Personal Management	Credit Hours	3 (3,0)
Course Code	BST 1106	Prerequisite(s)	None

Course Description	This course teaches students to discover themselves and make positive changes to achieve greater effectiveness at work, and in personal and interpersonal relationship. Students learn the combination of factors such as personality, communication style, self-esteem, time management, conflict, negotiation and others that impact their personal effectiveness. They also learn methods, and techniques required to work effectively and confidently with others, using time management, negotiation and presentation skills with a positive mindset.
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Equivalent Course(s)	BA 1104, BA 1109, EN 1206
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Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	BST 1105	Prerequisite(s)	None

Course Description	Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production.
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Equivalent Course(s)	BA 1102, SS 1105, EN 1205, AF 2405
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Course Name	Computer Orientation and Packages	Credit Hours	3 (3,0)
Course Code	BST 1102	Prerequisite(s)	None

Course Description	This course is designed to cover topics including; computers in today's digital age, how to use computers in different professions, latest technologies and terms, and how to access information on the world wide web with the help of topics such as introduction to computers, hardware, software, different types of operating systems, and Microsoft Office.
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Equivalent Course(s)	BA 3604, BA 1103, CSC 1104, BIO 1104, AF 1102, EN 1102,
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Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	BST 1204	Prerequisite(s)	BST 1105

Course Description	This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.
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Equivalent Course(s)	BA 1102, SS 1205, EN 2303, BA 5402, AF 3505, EN 2303
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Bachelor of Business Studies (BBS)

Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	BST 1205	Prerequisite(s)	BST 1101

Course Description

This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s)

BA 2303, BA 5404, EN 2305, AF 1206

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	BST 1203	Prerequisite(s)	BST 1104

Course Description

This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.

Equivalent Course(s)

BA 2301, BA 5401, EN 2301, AF 4703

Course Name	Cost Accounting	Credit Hours	3 (3,0)
Course Code	BST 1202	Prerequisite(s)	BST 1104

Course Description

This course focuses on cost allocation, process costing systems and spoilage. Specific topics include relevancy of revenues and costs, cost allocation decisions (joint and byproducts), process costing systems, factory overhead applied, standard Costing: setting of standards, analysis of variance and controlling and costing Material.

Equivalent Course(s)

BA 5411, BA 2408, AF 2302

1.1.5 Bachelor of Business Studies (BBS)

Course Name	Business Communication	Credit Hours	3 (3,0)
Course Code	BST 1201	Prerequisite(s)	BST 1103

Course Description

This introductory course teaches students to communicate at both personal and professional levels. In addition, it develops competency in all forms of communication. This course introduces communication theories and strategies for a variety of business situations. Using a developmental approach to business communication, the course examines methods for organizing ideas, analyzing data, addressing diverse concerns, presenting information, and developing a professional communication style.

Equivalent Course(s)

BA 2406, EN 1202, BA 5418, AF 2301

Course Name	Statistics and Mathematics for Business	Credit Hours	3 (3,0)
Course Code	BST 1206	Prerequisite(s)	None

Course Description

The statistical portion of this course consists of three parts. The first part consists of the introduction to statistics, types of data, frequency distribution, graphs, and charts. The second part covers measures of central tendency, and measures of dispersion. The third part is based on the concept of curve fitting techniques, regression analysis, correlation analysis, and MS Excel tools for statistics using add-on analysis tool pack. The mathematical portion of this course is covered by three parts. The first part based on systems of linear equations and its solutions: construction of linear and quadratic equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule and inverse method. The second part develops the concept of linear and nonlinear functions, and differentiation of basic functions with applications. The third part includes, higher order differentiation, optimization of functions, linear programming, and simplex method. The aim of this course is to prepare student to solve economic and managerial research problem through quantitative tools.

Equivalent Course(s)

BA 2305, BA 5305, AF 2406, EN 2304

Course Name	Business Research Methods	Credit Hours	3 (3,0)
Course Code	BST 2301	Prerequisite(s)	BST 2306

Course Description

This course provides the understanding of basic business research methods in the field of marketing, human resource management, and finance. The subject encompasses theory and practice of research; and covers concepts, elements, and process of conducting business research. It builds the specific conceptual knowledge regarding identification and elicitation of research problem, development of research proposal, reviewing the literature, using suitable research methodology, data collection and analysis tools and writing research report. This course focuses on basic concept building and relating the research to real life business problems.

Equivalent Course(s)

SS 3504, BA 3603, AF 3609

Bachelor of Business Studies (BBS)

Course Name	Statistical Inference	Credit Hours	3 (3,0)
Course Code	BST 2306	Prerequisite(s)	BST 1206

Course Description TThe course covers probability; probability distributions; Binomial, Poisson, Hyper-geometric, Chi Square distribution, Normal distribution, Sampling Distribution; estimation; hypothesis testing; one-population test, two-populations test and analysis of variance; and computer applications in statistics.

Equivalent Course(s) BA 5405, SS 2418, BA 3605, AF 3506

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	BST 2302	Prerequisite(s)	BST 1203

Course Description Building upon the concepts already laid down in its pre-requisite, financial management helps students in exploring the depths of the relatively complex aspects of the financial world, with prime focus on the present value and opportunity cost of capital. This course covers topics such as nature, scope and function of financial decision areas, objectives of financial management, financial forecasting, working capital management, valuation of stocks, valuation of fixed income securities, project cash flow analysis, capital budgeting and decision making, determination of the required rate of return via asset pricing models, dividend policy, debt policy, introduction to financial risk management and derivatives and role of financial markets in Pakistan.

Equivalent Course(s) BA 3601, BA 5105, AF 4702

Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	BST 2303	Prerequisite(s)	BST 1101

Course Description This course examines the role of the human resource professional, as a strategic partner, in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as Human Resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, rising benefit costs), and best practices of employers of choice.

Equivalent Course(s) BA 4804, BA 5205, EN 3602, AF 1204

1.1.5 Bachelor of Business Studies (BBS)

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BST 2305	Prerequisite(s)	BST 1205

Course Description	This course introduces the concept of customer and market-driven management. Also, this course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.
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Equivalent Course(s)	BA 3602, BA 5106, AF 2403
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Course Name	Management Information Systems	Credit Hours	3 (3,0)
Course Code	BST 2304	Prerequisite(s)	BST 1102

Course Description	This course covers topics, such as; computing systems, different information technology applications in business to manage better, providing support to decision makers for strategic business decisions, and different applications (such as; hospital information systems, corporate information systems, city information systems, crime information, control systems, and transaction process system).
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Equivalent Course(s)	BA 4704, BA 5403, AF 2402
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Course Name	Law and Taxation	Credit Hours	3 (3,0)
Course Code	BST 2401	Prerequisite(s)	None

Course Description	This course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws, Sales Tax, Income Tax Law and Intellectual Property Laws. This course identifies the legal rights of persons in case of nonperformance of contracts, it also identifies the taxation system as well as kinds of taxes in Pakistan. Furthermore it identifies the intellectual property rights in Pakistan.
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Equivalent Course(s)	BA 4801, EN 2401
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Course Name	Research Project	Credit Hours	6 (6,0)
Course Code	BST 2409	Prerequisite(s)	BST 2301

Course Description	This project demands the application of the concepts, theories, models and framework studied in various courses of business administration at the Master's level. This is an independent study conducted under the supervision of an advisor belonging to the related field of interest such as; marketing, human resource, or finance/accounts fields.
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Equivalent Course(s)	None
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1.2 Masters and PhD

1.2.1 Master of Business Administration (MBA)

Students enrolled in Master of Business Administration-36 Credit Hours (MBA-36 CHs) program are required to complete 10 courses and a Business Research Project/Academic Research Project/ Thesis (6 credits) within five (5) years. The break-up of the 10 courses is as follows:

- 6 Core Courses (18 Credit Hours)
- 4 Elective Courses⁵ (12 Credit Hours)
- 1 Business Research Project/Academic Research Project//Thesis (6 Credit Hours)

MBA (36 credit hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BA 5501	Applied Research Methods	73
BA 5104	Strategic Management	73
BA 5xxx	Elective-I	246 & 248
BA 5xxx	Elective-II	246 & 248
Spring Semester		
BA 5203	Strategic Marketing	73
BA 5601	Strategic Human Resource Management	74
BA 5xxx	Elective-III	246 & 248
BA 5xxx	Elective-IV	246 & 248
Second Year		
Fall Semester		
BA 5308	International Business	74
BA 5208	Strategic Finance	74
BA 5509/	Business Research Project/	75
BA 5609/	Academic Research Project/	75
BA 5109	Thesis	75

All courses may not be offered every year. Alternate courses may be substituted as and when required.

⁵ List of Electives is given in Appendix B.

1.2.1 Master of Business Administration (MBA)

Course Name	Applied Research Methods	Credit Hours	3 (3,0)
Course Code	BA 5501	Prerequisite(s)	None

Course Description

This course equips students with the essential tools of research which forms the basis of sound decision-making. Through an applied approach using term report supplemented by classroom discussions and presentations, students gain knowledge of converting a business issue into a research problem; and applying the most appropriate methodology to solve this problem. The course provides an overview of applied research methodology and statistics. The general aims are to provide a) an advanced understanding of research methods and data analysis, b) enhanced research literacy, and c) a greater understanding of the way in which research methodology and statistics are interwoven with theory and practice.

Equivalent Course(s)

None

Course Name	Strategic Management	Credit Hours	3 (3,0)
Course Code	BA 5104	Prerequisite(s)	None

Course Description

This course covers various aspects of strategic management, information inputs, concepts of mission and objectives, strategy formulation, action plan choice, strategy selection and evaluation, function strategy evaluation, strategy implementation and strategic control.

Equivalent Course(s)

None

Course Name	Strategic Marketing	Credit Hours	3 (3,0)
Course Code	BA 5203	Prerequisite(s)	None

Course Description

This course addresses topics such as business and marketing strategies, business strategy and competitive advantage, marketing situation analysis, market segmentation, marketing target and positioning strategy, product portfolio strategy, price strategy, promotion strategy, marketing strategy implementation and control. The focus is on the analysis and decision making process from strategic point of view. Additionally, understanding of how marketing interacts with other levels of strategy and integrate with all the other departments within the organization.

Equivalent Course(s)

None

1.2.1 Master of Business Administration (MBA)

Course Name	Strategic Human Resource Management	Credit Hours	3 (3,0)
Course Code	BA 5601	Prerequisite(s)	None

Course Description

This course equips students to take strategic human resource decisions. The course is designed to involve students in practical activities ranging from assessment of the global economic environment and organizational culture to the analysis of competencies and the implementation of human resource decisions. Students carry out a detailed strategic analysis of a human resource management issue in organizations and, in doing so learn how to contribute in improving the performance, productivity, and morale.

Equivalent Course(s)

None

Course Name	International Business	Credit Hours	3 (3,0)
Course Code	BA 5308	Prerequisite(s)	None

Course Description

This course develops an understanding of the worldwide developments and foundations for international business and the cultural context for managing in an overseas environment. It provides an understanding of the macroeconomic and political changes that have taken place in the era of globalization and beyond globalization. It also helps to investigate the political economy of international business, trade and investment. In addition, describes and explains trade and the investment environment in which international business transactions occurs.

Equivalent Course(s)

None

Course Name	Strategic Finance	Credit Hours	3 (3,0)
Course Code	BA 5208	Prerequisite(s)	None

Course Description

This is an advanced course in finance that focuses upon the linkages that exist between corporate strategy and objectives, financial policy and financing strategies, corporate governance, and the creation and allocation of wealth. It also discusses the appropriate tools that can be applied to structuring and managing the business and financial affairs of a firm under varying conditions.

Equivalent Course(s)

None

1.2.1 Master of Business Administration (MBA)

Course Name	Business Research Project	Credit Hours	6 (6,0)
Course Code	BA 5509	Prerequisite(s)	BA 5501

Course Description

In Business Research Project students are required to work in teams on a specific industry challenge faced by a company. The project work usually involves carrying out research and/or performing sound strategic analysis for identifying solutions to the problem. Client organizations benefit a great deal from the solutions proposed by the students. The objectives of this project work are to enhance the practical side of the learning process, to internalize managerial concepts, and to develop creative and applicable solutions.

Equivalent Course(s)

BA 5109, BA 5609

Course Name	Academic Research Project	Credit Hours	6 (6,0)
Course Code	BA 5609	Prerequisite(s)	BA 5501

Course Description

The academic research project course is the application of the theory and concepts learned across various courses in MBA program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.

Equivalent Course(s)

BA 5109, BA 5509

Course Name	Thesis	Credit Hours	6 (6,0)
Course Code	BA 5109	Prerequisite(s)	BA 5501

Course Description

Thesis is the application of the theory and concepts learned across various courses in MBA program. It is an individual project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.

Equivalent Course(s)

BA 5509, BA 5609

1.2.1 Master of Business Administration (MBA)

MBA (72 credit hours)

Students enrolled in Master of Business Administration-72 Credit Hours (MBA-72 CHs) program are required to complete 22 courses and 1 Business Research Project/Academic Research Project/Thesis (6 credits) within five (5) years. The break-up of the 22 courses is as follows:

- 18 Core Courses (54 Credit Hours)
- 4 Elective Courses⁶ (12 Credit Hours)
- 1 Business Research Project/Academic Research Project/Thesis (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BA 5301	Financial Accounting	77
BA 5419	Business Management & Ethics	77
BA 5418	Managerial Communication	77
BA 5502	Quantitative Tools for Managers	77
BA 5404	Marketing Principles	78
BA 5207	Organizational Behavior	78
Spring Semester		
BA 5106	Marketing Management	78
BA 5205	Human Resource Management	79
BA 5411	Cost and Management Accounting	79
BA 5401	Introduction to Business Finance	79
BA 5408	Business Economics	80
BA 5501	Applied Research Methods	80
Second Year		
Fall Semester		
BA 5308	International Business	80
BA 5104	Strategic Management	81
BA 5105	Financial Management	81
BA 5203	Strategic Marketing	81
BA 5xxx	Elective-I	246 & 248
BA 5xxx	Elective-II	246 & 248
Spring Semester		
BA 5601	Strategic Human Resource Management	82
BA 5208	Strategic Finance	82
BA 5xxx	Elective-III	246 & 248
BA 5xxx	Elective-IV	246 & 248
BA 5509/	Business Research Project/	82
BA 5609/	Academic Research Project/	83
BA 5109	Thesis	83

All courses may not be offered every year. Alternate courses may be substituted as and when required.

⁶ List of Electives is given in Annexure B.

1.2.1 Master of Business Administration (MBA)

Course Name	Financial Accounting	Credit Hours	3 (3,0)
Course Code	BA 5301	Prerequisite(s)	None

Course Description This course includes accounting for merchandise business, classified balance sheet, simple and multiple income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, corporation and measuring cash flow statements. Also, MS Excel is used and necessary accounting software is introduced.

Equivalent Course(s) None

Course Name	Business Management & Ethics	Credit Hours	3 (3,0)
Course Code	BA 5419	Prerequisite(s)	None

Course Description This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future perspective of management and society. The course also introduces contemporary ethical issues faced by the business community.

Equivalent Course(s) BA 5303, BA 1203, AF 1106, EN 1204, BST 1101

Course Name	Managerial Communication	Credit Hours	3 (3,0)
Course Code	BA 5418	Prerequisite(s)	None

Course Description This course is designed to develop the application of written oral and interpersonal communication theory in the business management environment. Areas of emphasis include the role of communication in contemporary organizations, considerations of message production and reception, internal versus external audiences, communicating change, intercultural communication, and ethics.

Equivalent Course(s) BA 5304, BA 2406, AF 2301, EN 1202, BST 1201

Course Name	Quantitative Tools for Managers	Credit Hours	3 (3,0)
Course Code	BA 5601	Prerequisite(s)	None

Course Description The course is designed to provide quantitative tools and methods to managers. It encompasses descriptive statistics, probability theory and application, sampling methods and distribution, regression and correlation, testing of hypotheses for various population parameters, application Z, t, F, and Chi-square distributions, time series and index numbers, matrix algebra and applications, applications of systems of linear and quadratic equations, business and economics applications of differentiation and integrations, and linear programming.

Equivalent Course(s) None

1.2.1 Master of Business Administration (MBA)

Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	BA 5404	Prerequisite(s)	None

Course Description This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.

Equivalent Course(s) BA 2303, AF 1206, EN 2305, BST 1205

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	BA 5207	Prerequisite(s)	None

Course Description This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s) BA 3504, AF 2305, EN 2306

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BA 5106	Prerequisite(s)	BA 5404

Course Description This course introduces the concept of customer and market-driven management. This course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.

Equivalent Course(s) BA 3602, AF 2403, BST 2305

1.2.1 Master of Business Administration (MBA)

Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	BA 5205	Prerequisite(s)	BA 5419, BA 5207

Course Description This course examines the role of the human resource professional, as a strategic partner, in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as human resource planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, rising benefit costs), and best practices of employers of choice.

Equivalent Course(s) BA 4804, AF 1204, EN 3602, BST 2303

Course Name	Cost and Management Accounting	Credit Hours	3 (3,0)
Course Code	BA 5411	Prerequisite(s)	BA 5301

Course Description This course introduces cost concepts, classifications, behaviors, and assignment, usage of quantitative and qualitative tools and methods of preparing spreadsheet models to analyze data, account for specific industries and organizational structures, understand advantages, disadvantages, and appropriate usage of job-order costing, process costing, activity-based costing, variable costing, and standard costing, and computing and interpreting variances from budgets and standards.

Equivalent Course(s) BA 2408, AF 2302, BST 1202

Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	BA 5401	Prerequisite(s)	None

Course Description This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.

Equivalent Course(s) BA 2301, AF 4703, EN 2301, BST 1203

1.2.1 Master of Business Administration (MBA)

Course Name	Business Economics	Credit Hours	3 (3,0)
Course Code	BA 5408	Prerequisite(s)	None

Course Description

This course aims at imparting knowledge of basic economic principles to the business students. It covers micro-and macroeconomic issues that are essential for managers and professionals. The course starts with basic microeconomics concepts such as demand, supply, elasticity, production and cost. Having established the solid ground of the basics of microeconomics, parts of macroeconomics including national income accounts, aggregate demand, aggregate supply, concepts of inflation and unemployment, exchange rate, balance of payments, international trade, business cycles, money and banking, economic growth & major macroeconomic policy operations are dealt with. After completing the course the students will be able to apply principles of economics to understand and analyze economic problems being faced by both public and private sectors of Pakistan.

Equivalent Course(s)

None

Course Name	Applied Research Methods	Credit Hours	3 (3,0)
Course Code	BA 5501	Prerequisite(s)	None

Course Description

This course equips students with the essential tools of research which forms the basis of sound decision-making. Through an applied approach using term report supplemented by classroom discussions and presentations, students gain knowledge of converting a business issue into a research problem; and applying the most appropriate methodology to solve this problem. The course provides an overview of applied research methodology and statistics. The general aims are to provide a) an advanced understanding of research methods and data analysis, b) enhanced research literacy, and c) a greater understanding of the way in which research methodology and statistics are interwoven with theory and practice.

Equivalent Course(s)

None

Course Name	International Business	Credit Hours	3 (3,0)
Course Code	BA 5308	Prerequisite(s)	None

Course Description

This course develops an understanding of the worldwide developments and foundations for international business and the cultural context for managing in an overseas environment. It provides an understanding of the macroeconomic and political changes that have taken place in the era of globalization and beyond globalization. It also helps to investigate the political economy of international business, trade and investment, In addition describes and explains trade and the investment environment in which international business transactions occurs.

Equivalent Course(s)

None

1.2.1 Master of Business Administration (MBA)

Course Name	Strategic Management	Credit Hours	3 (3,0)
Course Code	BA 5104	Prerequisite(s)	BA 5105, BA 5106 BA 5205

Course Description This course covers various aspects of strategic management, information inputs, concepts of mission and objectives, strategy formulation, action plan choice, strategy selection and evaluation, function strategy evaluation, strategy implementation and strategic control.

Equivalent Course(s) None

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	BA 5105	Prerequisite(s)	BA 5401, BA 5301

Course Description Building upon the concepts already laid down in its pre-requisite, financial management helps students in exploring the depths of the relatively complex aspects of the financial world, with prime focus on the present value and opportunity cost of capital. This course covers topics such as nature, scope and function of financial decision areas, objectives of financial management, financial forecasting, working capital management, valuation of stocks, valuation of fixed income securities, project cash flow analysis, capital budgeting and decision making, determination of the required rate of return via asset pricing models, dividend policy, debt policy, introduction to financial risk management and derivatives and role of financial markets in Pakistan.

Equivalent Course(s) BA 3601, BA 5105, AF 4702

Course Name	Strategic Marketing	Credit Hours	3 (3,0)
Course Code	BA 5203	Prerequisite(s)	BA 5105, BA 5106 BA 5205

Course Description This course addresses topics such as business and marketing strategies, business strategy and competitive advantage, marketing situation analysis, market segmentation, marketing target and positioning strategy, product portfolio strategy, price strategy, promotion strategy, marketing strategy implementation and control. The focus is on the analysis and decision making process from strategic point of view. Additionally, understanding of how marketing interacts with other levels of strategy and integrate with all the other departments within the organization.

Equivalent Course(s) None

1.2.1 Master of Business Administration (MBA)

Course Name	Strategic Human Resource Management	Credit Hours	3 (3,0)
Course Code	BA 5601	Prerequisite(s)	BA 5205

Course Description

This course equips students to take strategic human resource decisions. The course is designed to involve students in practical activities ranging from assessment of the global economic environment and organizational culture to the analysis of competencies and the implementation of human resource decisions. Students carry out a detailed strategic analysis of a human resource management issue in organizations and, in doing so learn how to contribute in improving the performance, productivity, and morale.

Equivalent Course(s)

None

Course Name	Strategic Finance	Credit Hours	3 (3,0)
Course Code	BA 5208	Prerequisite(s)	None

Course Description

This is an advanced course in finance that focuses upon the linkages that exist between corporate strategy and objectives, financial policy and financing strategies, corporate governance, and the creation and allocation of wealth. It also discusses the appropriate tools that can be applied to structuring and managing the business and financial affairs of a firm under varying conditions.

Equivalent Course(s)

None

Course Name	Business Research Project	Credit Hours	6 (6,0)
Course Code	BA 5509	Prerequisite(s)	BA 5501

Course Description

In Business Research Project students are required to work in teams on a specific industry challenge faced by a company. The project work usually involves carrying out research and/or performing sound strategic analysis for identifying solutions to the problem. Client organizations benefit a great deal from the solutions proposed by the students. The objectives of this project work are; to enhance the practical side of the learning process, to internalize managerial concepts, and to develop creative and applicable solutions.

Equivalent Course(s)

BA 5109, BA 5609

1.2.1 Master of Business Administration (MBA)

Course Name	Academic Research Project	Credit Hours	6 (6,0)
Course Code	BA 5609	Prerequisite(s)	BA 5501

Course Description

The academic research project course is the application of the theory and concepts learned across various courses in MBA program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.

Equivalent Course(s)

BA 5109, BA 5509

Course Name	Thesis	Credit Hours	6 (6,0)
Course Code	BA 5109	Prerequisite(s)	BA 5501

Course Description

Thesis is the application of the theory and concepts learned across various courses in MBA program. It is an individual project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.

Equivalent Course(s)

BA 5509, BA 5609

1.2 Masters and PhD

1.2.2 Master of Business Administration in Banking & Finance (MBA B&F)

Students enrolled for the Master of Business Administration Banking and Finance (MBA B&F) program, are required to complete 10 courses and Academic Research Project or Business Research Project within five (5) years. The break-up of the 10 courses is as follows:

- 6 Compulsory Courses (18 Credit Hours)
- 4 Elective Courses⁷ (12 Credit Hours)
- 1 Academic Research Project or Business Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BA 5501	Applied Research Methods	85
BA 5273	Prudential Regulations	85
BA 5235	Treasury and Funds Management	85
BA 5xxx	Elective-I	249
Spring Semester		
BA 5175	Banking Operations	86
BA 5xxx	Credit Analysis and Appraisal	86
BA 5139	Financial Risk Analysis	86
BA 5xxx	Elective –II	249
Second Year		
Fall Semester		
BA 5xxx	Elective –III	
BA 5xxx	Elective –IV	249
BA 5609/	Academic Research Project/	249
BA 5509/	Business Research Project/	87
BA 5109	Thesis	87

All courses may not be offered every year. Alternative courses may be substituted as and when required.

⁷ List of Electives is given in Appendix B.

1.2.2 Master of Business Administration in Banking & Finance (MBA B&F)

Course Name	Applied Research Methods	Credit Hours	3 (3,0)
Course Code	BA 5501	Prerequisite(s)	None

Course Description	This course equips students with the essential tools of research which forms the basis of sound decision-making. Through an applied approach using term report supplemented by classroom discussions and presentations, students gain knowledge of converting a business issue into a research problem; and applying the most appropriate methodology to solve this problem. The course provides an overview of applied research methodology and statistics. The general aims are to provide a) an advanced understanding of research methods and data analysis, b) enhanced research literacy, and c) a greater understanding of the way in which research methodology and statistics are interwoven with theory and the practice.
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Equivalent Course(s)	None
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Course Name	Prudential Regulations	Credit Hours	3 (3,0)
Course Code	BA 5273	Prerequisite(s)	None

Course Description	This course focuses on the Prudential Regulations of the State Bank of Pakistan. In addition, this course introduces the current law and practices of State Bank and their implication for the banking industry stake holders like banks, consumers, and various corporate clients.
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Equivalent Course(s)	None
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Course Name	Treasury and Funds Management	Credit Hours	3 (3,0)
Course Code	BA 5235	Prerequisite(s)	None

Course Description	This course focuses on the banking aspects of treasury and funds management and it enables budding financial managers to gain insights into different treasury products and their features. The course incorporates practical aspects pertaining to the actual dealing room scenarios including but not limited to dealing ethics, and actual transaction types. It covers the understanding of Financial Institutions (FIs), financial instruments, and linkages between the financial system and the macro-economy, elaborates on how interest rates are determined, and the role of the federal reserve in formulating monetary policy.
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Equivalent Course(s)	None
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1.2.2 Master of Business Administration in Banking & Finance (MBA B&F)

Course Name	Banking Operations	Credit Hours	3 (3,0)
Course Code	BA 5175	Prerequisite(s)	None

Course Description Banking Operations areas includes, but is not limited to, various operations of commercial banks, central bank and Non-Banking Financial Institutions (NBFIs). The course covers; banking theory and practice, evolution and emerging trends in banking and financial markets, the role of central bank and other regulatory agencies, front office operations, bank payments, audit and internal control systems, financial management, compliance and reporting, operational planning, management information systems {Information and Communications Technology (ICT) & Business Processes}, products and services: deposits, credits, asset and liability management, trade finance, and asset finance.

Equivalent Course(s) None

Course Name	Credit Analysis and Appraisal	Credit Hours	3 (3,0)
Course Code	BA 5xxx	Prerequisite(s)	BA 5132

Course Description This course is focused on how corporate/commercial banking professionals evaluate the credit worthiness of potential customers. The course is designed to give students the knowledge and expertise required, to asses potential client(s) , in a financial intermediaries (FI)/banking setup The course will focus on identification of risk(s) in granting a loan as well as, financial statement analysis from a banker's perspective, how industry/sectoral analysis plays an important role while appraising an application, understanding a client's business process and its SWOT, and collateral/security analysis. Students will also get an opportunity to understand the difference in evaluating/appraising a corporate and SME customer.

Equivalent Course(s) None

Course Name	Financial Risk Analysis	Credit Hours	3 (3,0)
Course Code	BA 5139	Prerequisite(s)	BA 5132

Course Description This course focuses on the risks faced by the manager of a portfolio of financial assets. Such risks include credit, liquidity, interest rate, currency, and country risks. These risks frequently have lumpy and unpredictable characteristics. Elements of immeasurability often frustrate the empirical estimation of the potential impacts of such risks. The course examines the various risk management techniques used by financial managers to address these problems, and the strengths and limitations of each of the techniques within an operational business setting.

Equivalent Course(s) None

1.2.2 Master of Business Administration in Banking & Finance (MBA B&F)

Course Name	Academic Research Project	Credit Hours	6 (6,0)
Course Code	BA 5509	Prerequisite(s)	BA 5501

Course Description	The Academic research project course is the application of the theory and concepts learned across various courses in MBA program. It is a team-based project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. management, marketing, finance, or human resource management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.
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Equivalent Course(s)	BA 5109, BA 5509
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Course Name	Business Research Project	Credit Hours	6 (6,0)
Course Code	BA 5509	Prerequisite(s)	BA 5501

Course Description	In Business Research Project students are required to work in teams on a specific industry challenge faced by a company. The project work usually involves carrying out research and/or performing sound strategic analysis for identifying solutions to the problem. Client organizations benefit a great deal from the solutions proposed by the students. The objectives of this project work are to enhance the practical side of the learning process, to internalize managerial concepts, and to develop creative and applicable solutions.
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Equivalent Course(s)	BA 5109, BA 5609
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Course Name	Thesis	Credit Hours	6 (6,0)
Course Code	BA 5109	Prerequisite(s)	BA 5501

Course Description	Thesis is the application of the theory and concepts learned across various courses in MBA program. It is an individual project to demonstrate the understanding of interdisciplinary knowledge and soft skills. It is based on identifying and solving a problem from any one specific field of business e.g. Management, Marketing, Finance, or Human Resource Management. It consists of understanding the real life business and industry problem, formulating the research questions, identifying appropriate methodology to answer the research questions, collecting and analyzing data from the field, and reporting the findings, by using the scientific methods of research.
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Equivalent Course(s)	BA 5609, BA 5509
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1.2 Masters and PhD

1.2.3 Master in Project Management (MPM)

Students enrolled in the Master in Project Management (MPM) program are required to complete 33 credit hours within five (5) years. The breakup of the courses is as follows:

- 8 Compulsory Courses (24 Credit Hours)
- 2 Elective Courses⁸ (6 Credit Hours)
- 1 Project (3 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
PM 5102	Fundamentals of Project Management	89
PM 5104	Cost and Financial Management for Project Management	89
PM 5105	Project Scope	89
PM 5310	SAP Training*	90
Spring Semester		
PM 5201	Project Scheduling, Planning and Time Management	90
PM 5351	Project Risk Management	91
PM 5309	Project in Primavera	91
PM 5xxx	Elective-I	249
PM 5xxx	Elective-II	249
Summer Semester		
PM 5301	Project Quality Management	91
PM 5209	Project	92

* May alternatively be exchanged with "IT Tools for Project Management" or "Enterprise Project Management".

All courses may not be offered every year. Alternative courses may be substituted as and when required.

8- List of Electives is given in Appendix B.

9- The course description is given on page # 89

1.2.3 Master in Project Management (MPM)

Course Name	Fundamentals of Project Management	Credit Hours	3 (3,0)
Course Code	PM 5102	Prerequisite(s)	None

Course Description This introductory course provides basic knowledge regarding; organization, planning, and controlling of projects, and practical knowledge on managing project scope, schedule, and resources. It includes various topics like project life cycle, work break-down structure and Gantt charts, network diagrams, scheduling techniques, and resource allocation decisions. Also, theoretical concepts are supplemented through practical team projects and tutorials using project management software. The purpose of this course is to familiarize students with all terms and processes of project management and to let them have an enriched flavor of working in teams.

Equivalent Course(s) None

Course Name	Cost and Financial Management for Project Management	Credit Hours	3 (3,0)
Course Code	PM 5104	Prerequisite(s)	None

Course Description This course is intended to provide the general approaches to cost management, such as the methods used to estimate costs, preparing budgets and controlling/monitoring a project's finances. It will help to understand the interrelationship of various cost control concepts and possible responses a project management team might make if a project is falling behind schedule or overrunning its budget in real time. Further, the course would introduce the concept of project finance, which includes financing of projects based upon the projected cash flows of the project. It helps in understanding the strategic and technical components of project finance. Strategic elements of project financing include an understanding of project screening, value-for-money analysis, and risk mitigation and allocation. Technical elements of project financing include an understanding of the data and relevant assumptions, sensitivity analyses, tariffs, projecting cash flow, NPV & IRR returns, and cost of capital all critical in building and interpreting the actual financial model.

Equivalent Course(s) None

Course Name	Project Scope	Credit Hours	3 (3,0)
Course Code	PM 5105	Prerequisite(s)	None

Course Description This course will provide participants with the skills and knowledge required to gather requirements, accurately define project scope, create a Work Breakdown Structure (WBS) that details all work components, and learn the elements involved in verifying and controlling scope. Scope Management techniques allow project managers and supervisors to allocate just the right amount of work necessary to complete a project successfully.

Equivalent Course(s) None

1.2.3 Master in Project Management (MPM)

Course Name	SAP Training	Credit Hours	3 (3,0)
Course Code	PM 5310	Prerequisite(s)	None

Course Description This course is designed to provide participants an overview of the basic functions in SAP Project System for structuring, planning, executing, and monitoring projects. It is based on software release SAP ERP 6.0 with Enhancement Package 5. The course covers work breakdown structure, network, project builder, project planning board, progress tracking, access control list, scheduling, resource and material planning, cost and revenue planning, cash management, budgeting, reporting, and integration with other applications.

Equivalent Course(s) None

Course Name	IT Tools for Project Management	Credit Hours	3 (3,0)
Course Code	PM 5107	Prerequisite(s)	None

Course Description The role and vitality of present and future project managers significantly depends on how they are able to handle and use the contemporary technological tools available around them for effective project planning and execution. As such the use of IT enabled platforms becomes imperative and gaining hands on experience on both Stand Alone and Server Based Project Management applications is a must. This course addresses this important aspect of Project Management (PM) by imparting HANDS-ON trainings to the participants on the latest available IT platforms through interactive discussions and realistic scenario building.

Equivalent Course(s) None

Course Name	Project Scheduling, Planning and Time Management	Credit Hours	3 (3,0)
Course Code	PM 5201	Prerequisite(s)	None

Course Description This course utilizes PMI's industry standard for the schedule management process and the Microsoft Project Scheduling Application which can be applied immediately to real-life projects. The course begins with the process of planning and developing of the right size schedule and making sure that it aligns with the current Work Breakdown Structure (WBS). By utilizing the Precedence Diagramming Method (PDM) the learners are able to develop the activity list, apply activity sequencing methodology, perform activity duration estimating with risk infusion, and even perform schedule optimization using Critical Path Methodology (CPM). The course also provides different techniques to evaluate impact of time delays of different activities through Project Evaluation and Review Technique (PERT).

Equivalent Course(s) None

1.2.3 Master in Project Management (MPM)

Course Name	Project Risk Management	Credit Hours	3 (3,0)
Course Code	PM 5351	Prerequisite(s)	None

Course Description This course utilizes PMIs standards for Project Risk Management. The course is designed in a way that it enhances expertise and competency of Project Professionals in assessing and identifying project risks, mitigating threats and capitalizing on opportunities, while still possessing a core knowledge and practical application in all areas of project management.

Equivalent Course(s) None

Course Name	Project in Primavera	Credit Hours	3 (3,0)
Course Code	PM 5309	Prerequisite(s)	None

Course Description This course provides hands-on training for Primavera's client/server based solution. Participants gain a thorough background in the concepts of planning and scheduling, resource and cost management. It is based on hands-on workshops that create and track an entire project to completion. The major areas covered in this training course are; maintaining the project documents library, assigning and analyzing resources and costs, optimizing project plan, project execution and control, reporting performance, top-down budgeting and estimating, Primavera report wizard, Primavera report editor, exporting data directly to other applications, and publishing Primavera data.

Equivalent Course(s) None

Course Name	Project Quality Management	Credit Hours	3 (3,0)
Course Code	PM 5301	Prerequisite(s)	None

Course Description This course aims to give a broad understanding of various concepts and techniques used in project quality management such as quality concept in project management, quality planning, tools of quality management, quality assurance, quality monitoring and control, quality partnership, and customer satisfaction indices. The course also equips the students regarding different quality standards like, ISO 9000:2008, and six-sigma. Also, the course covers quality implementation and review techniques in project management with practical approaches to project quality planning, project quality assurance, continuous quality improvement and project performance measurement through various quality metrics.

Equivalent Course(s) None

1.2.3 Master in Project Management (MPM)

Course Name	Project	Credit Hours	3 (3,0)
Course Code	PM 5209	Prerequisite(s)	None

Course Description This course is based upon industry-linked project that emphasizes to utilize concepts, theories, tools, and techniques learned in various courses of project management. The course is based on teams that undertake a real-life project from the industry, government or non-governmental organizations. Major emphasis is placed on utilization of project management skill and tools learned in the classroom, communication skills, technical writing, and regular interaction with industry representatives along with the course facilitator. The overall goal of the course is to experience modern project management practices and develop interpersonal skills to handle real projects under real constraints by realizing the contextual information.

Equivalent Course(s) None

1.2.4 Executive Master of Business Administration (EMBA)

Students enrolled in the Executive Master of Business Administration (EMBA) program are required to complete 20 Course and 01 Business Project & Research Project within five (5) years. The break-up of 20 courses & projects (66 Credit Hours) is as follows:

- 17 Compulsory Courses (51 Credit Hours)
- 3 Elective Courses¹⁰ (9 Credit Hours)
- 1 Business Project (3 Credit Hours)
- 1 Research Project (3 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BE 417	Accounting for Business	94
BE 447	Managerial Communication	94
BE 451	Business Application of IT	94
BE 492	Business Management	95
Spring Semester		
BE 413	Quantitative Analysis for Decision Making	95
BE 415	Contemporary Marketing	95
BE 416	Organizational Behavior	96
BE 421	Economics for Business	96
BE 444	Ethics and Corporate Governance	96
Summer Semester		
BE 414	Business Finance	97
BE 406	Applied Research Methods	97
Second Year		
Fall Semester		
BE 423	Human Resource Management	97
BE 434	Marketing Management	98
BE 478	Business Project	98
BE 4xx	Elective-I (Marketing, HR, Finance and Supply Chain)	250 & 251
Spring Semester		
BE 419	Strategic Management	98
BE 443	Entrepreneurship and Family Businesses	98
BE 445	Managerial Accounting and Control	99
BE 4xx	Elective-II	250 & 251
BE 4xx	Elective-III	250 & 251
Summer Semester		
BE 448	Research Project	99
BE 449	Operations and Supply Chain Management	99

All courses may not be offered every year. Alternate courses may be substituted as and when required.

10- List of Electives is given in Appendix B.

1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Accounting for Business	Credit Hours	3 (3,0)
Course Code	BE 417	Prerequisite(s)	None

Course Description This course covers the basic accounting principles and concepts of financial accounting. The topics include accounting for merchandise business, classified balance sheet, simple and multiple steps income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, and stockholders equity.

Equivalent Course(s) None

Course Name	Managerial Communication	Credit Hours	3 (3,0)
Course Code	BE 447	Prerequisite(s)	None

Course Description This course is designed to develop the application of written, oral, and interpersonal communication theory in the business management environment. Areas of emphasis include the role of communication in contemporary organizations, considerations of message production and reception, internal versus external audiences, communicating change, intercultural communication, and ethics.

Equivalent Course(s) BA 5418

Course Name	Business Application of IT	Credit Hours	3 (3,0)
Course Code	BE 451	Prerequisite(s)	

Course Description This course discusses why technology and IT systems are needed in organizations and how they help improve on business model enablement, process rationalization and improvement, and customer product/service delivery. The course introduces students to computer software system development, life-cycle, and highlight the problems and enhancements that business organizations are facing with in this changing day and age. Solutions are formulated through analysis of operations, business goals and 'business modeling', while product and services roadmaps are analyzed for possible technological solutions.

Equivalent Course(s) None

1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Business Management	Credit Hours	3 (3,0)
Course Code	BE 492	Prerequisite(s)	None

Course Description This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future perspective of management and society. The course also introduces contemporary ethical issues faced by the business community.

Equivalent Course(s) BA 5419

Course Name	Quantitative Analysis for Decision Making	Credit Hours	3 (3,0)
Course Code	BE 413	Prerequisite(s)	None

Course Description The fundamental aim of this course is to develop students' ability to use quantitative techniques for decision making. This course contains tools of statistical analysis, both descriptive and inferential, to make decisions about parameters of a population. The technique of testing hypothesis would help to make decision concerning selection between alternatives. The regression analysis and the analysis of variance included in the outline helps in precise prediction, as well as, formulation of strategies objectively. Moreover, linear programming technique helps in the optimum allocation of resources.

Equivalent Course(s) None

Course Name	Contemporary Marketing	Credit Hours	3 (3,0)
Course Code	BE 415	Prerequisite(s)	None

Course Description This course is designed for professionals to share the current and future development in the field of marketing and to bring students at a level where they will be able to apply experiential learning, problem solving, analytical, and decision-making skills to real situations. This course promotes the capacity to take initiatives and develop independence of thought in a supportive framework-qualities universally identified as being essential to industrial and commercial needs.

Equivalent Course(s) BA 5404

1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	BE 416	Prerequisite(s)	BE 492

Course Description

This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s)

BA 5207

Course Name	Economics for Business	Credit Hours	3 (3,0)
Course Code	BE 421	Prerequisite(s)	None

Course Description

This course aims at imparting knowledge of basic economic principles to the business students. It covers micro-and macroeconomic issues that are essential for managers and professionals. The course starts with basic microeconomics concepts such as demand, supply, elasticity, production and cost. Having established the solid ground of the basics of microeconomics, parts of macroeconomics including national income accounts, aggregate demand, aggregate supply, concepts of inflation and unemployment, exchange rate, balance of payments, international trade, business cycles, money and banking, economic growth & major macroeconomic policy operations are dealt with. After completing the course the students will be able to apply principles of economics to understand and analyze economic problems being faced by both public and private sectors of Pakistan.

Equivalent Course(s)

BA 5408

Course Name	Ethics and Corporate Governance	Credit Hours	3 (3,0)
Course Code	BE 444	Prerequisite(s)	BE 492

Course Description

This course is designed so students can gain knowledge about the area of Corporate Governance & Business Ethics from different perspectives and its application. To understand and apply the concepts learned from various models to different corporate environment and to understand the mechanisms of controls, accountability and compliance. To provide effective management and decision-making skills.

Equivalent Course(s)

None

1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Business Finance	Credit Hours	3 (3,0)
Course Code	BE 414	Prerequisite(s)	BE 417

Course Description	This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.
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Equivalent Course(s)	BA 5105
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Course Name	Applied Research Methods	Credit Hours	3 (3,0)
Course Code	BE 406	Prerequisite(s)	BE 413

Course Description	This course equips students with the essential tools of research which forms the basis of sound decision-making. Through an applied approach using term report supplemented by classroom discussions and presentations, students gain knowledge of converting a business issue into a research problem; and applying the most appropriate methodology to solve this problem. The course provides an overview of applied research methodology and statistics. The general aims are to provide a) an advanced understanding of research methods and data analysis, b) enhanced research literacy, and c) a greater understanding of the way in which research methodology and statistics are interwoven with theory and practice.
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Equivalent Course(s)	None
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Course Name	Human Resource Management	Credit Hours	3 (3,0)
Course Code	BE 423	Prerequisite(s)	BE 416

Course Description	This course examines the role of the human resource professional as a strategic partner in managing contemporary organizations. The course introduces concepts, issues and practices in human resource management such as Human Resource (HR) planning, job design and analysis, recruitment and selection, training and development, performance appraisal, compensation and benefit management, career planning and development, employee relations, appraising the implications of legal and global environments and analyzing the current issues (such as diversity training, sexual harassment policies, rising benefit costs), and best practices of employers of choice.
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Equivalent Course(s)	BA 5205
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1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BE 434	Prerequisite(s)	BE 415

Course Description

This course introduces the concept of customer and market-driven management. This course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.

Equivalent Course(s)

BA 5106

Course Name	Business Project	Credit Hours	3 (3,0)
Course Code	BE 478	Prerequisite(s)	BE 418

Course Description

This course is designed to ensure that the students demonstrate their understanding to develop a business strategy for the existing or new business organization by utilizing the theories, concepts, and knowledge learnt during the whole program. It also ensures students' ability to critically evaluate the process of business innovation with particular reference to the groups work and experience and to generate business ideas, to screen these ideas, and to develop a realistic plan for development and implementation of a selected idea

Equivalent Course(s)

None

Course Name	Strategic Management	Credit Hours	3 (3,0)
Course Code	BE 419	Prerequisite(s)	BE 414, BE 423, BE 492

Course Description

This course covers strategic management, information inputs, concepts of mission and objectives, strategy formulation, action plan choice, strategies selection and evaluation, function strategy evaluation, strategy implementation, and strategic control.

Equivalent Course(s)

BA 5104

Course Name	Entrepreneurship and Family Businesses	Credit Hours	3 (3,0)
Course Code	BE 443	Prerequisite(s)	BE 492

Course Description

This course is designed to teach the conceptual foundations of entrepreneurship, strategic areas of business, entrepreneurial perspective, process, ventures, practices, characteristics, entrepreneurship and new free enterprise, product and service concepts, marketing and new venture development, entrepreneurial team and business formation, and applying various tools and analytical techniques to the new venture creation process in domestic and international settings.

Equivalent Course(s)

BA 5406

1.2.4 Executive Master of Business Administration (EMBA)

Course Name	Managerial Accounting and Control	Credit Hours	3 (3,0)
Course Code	BE 445	Prerequisite(s)	BE 417, BE 414

Course Description This course includes the study of management accounting for internal reporting and decision making. The course introduces a business management approach for the development and use of accounting information. Major topics include cost behavior, cost analysis, profit planning, and control measures.

Equivalent Course(s) None

Course Name	Research Project	Credit Hours	3 (3,0)
Course Code	BE 448	Prerequisite(s)	BE 418

Course Description The research has to be based on scientific study in a specialized field of business, such as marketing, finance, Human Resource Management, Management Information System etc. The course consists of understanding the real-life business problems and formulating the research techniques to solve them by using the scientific tools. It also helps to comprehend the research tools along with their application in specific areas.

Equivalent Course(s) None

Course Name	Operations and Supply Chain Management	Credit Hours	3 (3,0)
Course Code	BE 449	Prerequisite(s)	BE 492

Course Description This course serves as the macro perspective for operations. Students' learning is rounded in this course where they see how Strategy, Operations, Marketing, Sales, Finance, IT and Accounting work together to add to Operational Efficiency, Customer intimacy, and Product Innovation for companies. Understanding key supply chain foundations is crucial to any company's success and profitability. In this class students learn that supply chain and its significant impact on all aspects of business while gaining an understanding of the synchronism and synergies of all its components.

Equivalent Course(s) BA 3607

1.2 Masters and PhD

1.2.5 Master of Science in Project Management (MSPM)

Students enrolled in the Master of Science in Project Management (MSPM) program are required to complete 30 credit hours within five (5) years. The breakup of the courses is as follows:

- 4 Core Courses (12 Credit Hours)
- 2 Elective Courses¹¹ (6 Credit Hours)
- 2 Independent Study (6 Credit Hours)
- 1 Thesis (6 Credit Hours) OR 2 Additional Electives (3 Credit Hours Each)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MP 5xxx	Fundamentals of Project Management	101
MP 5103	Research Methodology	101
MP 5202	Quantitative Tools for Research	101
MP 5xxx	Advanced Project Management	102
Spring Semester		
MP 5xxx	Elective-I	251
MP 5xxx	Elective-II	251
MP 5108	Independent Study-I	-
MP 5208	Independent Study-II	-
Second Year		
Fall Semester		
MP 5xxx	Thesis/Elective-III*	251
MP 5xxx	Thesis/Elective-IV*	251

All courses may not be offered every year. Alternative courses may be substituted as and when required. Thesis may be substituted by the electives.

11- List of Electives is given in Appendix B.

1.2.4 Master of Science in Management Sciences (MSPM)

Course Name	Fundamentals of Project Management	Credit Hours	3 (3,0)
Course Code	MP 5xxx	Prerequisite(s)	None

Course Description This is an introductory course that will provide the broad knowledge regarding basic concepts and techniques used in Project Management. It will provide practical knowledge on managing project scope, schedule and resources. It includes various topics like: Project life cycle, work breakdown structure and Gantt charts, network diagrams, scheduling techniques and resource allocation decisions.

Equivalent Course(s) None

Course Name	Research Methodology	Credit Hours	3 (3,0)
Course Code	MP 5103	Prerequisite(s)	None

Course Description This course familiarizes participants with a range of approaches used in the management and project management research, with an emphasis on approaches commonly used in practical settings. The advantages and limitations of different research approaches are examined, as well as their applicability in different organizational contexts. Experience is provided in the design of research studies, analysis and interpretation of data, and report writing and presentation. Participants acquire skills which will be useful in doing academic research independently in their chosen area of interest.

Equivalent Course(s) MS 5137

Course Name	Quantitative Tools for Research	Credit Hours	3 (3,0)
Course Code	MP 5202	Prerequisite(s)	None

Course Description Quantitative Tools for Research course is designed to introduce students to some of the statistical and mathematical techniques that are widely used in empirical work in management and other related disciplines. It covers the basics of estimation and inference in the context of the single-equation linear regression model and simultaneous equation models

Equivalent Course(s) MS 5204

1.2.4 Master of Science in Management Sciences (MSPM)

Course Name	Advanced Project Management	Credit Hours	3 (3.0)
Course Code	MP 5xxx	Prerequisite(s)	None

Course Description This course would cover broad knowledge regarding concepts in Project Management and techniques used in project management ranging from Change Management in Projects, Project Risk, Risk Analysis, Procurement, Project Human Resource, Communication, Stockholder Management, and Integration Management. The course includes a number of case studies to integrate the broad areas and emphasize application in project management.

Equivalent Course(s) None

1.2 Masters and PhD

1.2.6 Master of Science in Management Sciences (MSMS)

Students enrolled in the Master of Science in Management Sciences (MSMS) program are required to complete 30 credits hours within five (5) years. Minimum time to complete MS is 1½ years.

A student can take six courses (18 credit hours), two Independent Research Studies (6 credit hours) and a thesis (6 credit hours) to complete MS degree with minimum 30 credit hours. In lieu of thesis two elective courses can be taken to complete the credit hours requirement. Break-up of 30 credit hours courses is as follows:

- 4 Compulsory Courses (12 Credit Hours)
- 2 Elective Courses¹² (6 Credit Hours)
- 2 Independent Research Studies (6 Credit Hours)
- 1 Thesis (6 Credit Hours) or 2 additional courses instead of Thesis (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MS 5204	Quantitative Tools for Research	104
MS 5137	Research Methods and Techniques	104
MS 5416	Research Philosophy	104
MS 5xxx	Elective-I	252
Spring Semester		
MS 5xxx	Elective-II	252
MS 5131	Qualitative Research Methods	105
MS 5119	Independent Research Study-I	-
MS 5219	Independent Research Study-II	-
Second Year		
Fall Semester		
MS 5xxx	Electives III/Thesis	252
MS 5xxx	Electives IV/Thesis	252

Summer is not a regular semester. Students can however register in IS/Thesis/Dissertation in 3 credit hours only.

All courses may not be offered every year. Alternate courses may be substituted as and when require

1.2.6 Master of Science in Management Sciences (MSMS)

Course Name	Quantitative Tools for Research	Credit Hours	3 (3,0)
Course Code	MS 5204	Prerequisite(s)	None

Course Description

Quantitative Tools for Research is a compulsory course at the MS level. It introduces students to the concepts of inferential statistics and quantitative research techniques in scientific investigation. The major areas of learning in this course include identification and application of quantitative tools in the scientific enquiry, quantitative analytical framework, data presentations, and interpretations of quantitative results of the research.

Equivalent Course(s)

MP 5205

Course Name	Research Methods and Techniques	Credit Hours	3 (3,0)
Course Code	MS 5137	Prerequisite(s)	None

Course Description

This course is designed to introduce the methods and techniques of quantitative research. It covers the philosophical underpinning, research designing, proposal development, method selection, sampling techniques, primary data collection tools, measurement and scaling, reliability and validity of the measurement tools, and reporting the research findings. A special emphasis will be given to the applications of business and economics in real life situations. The course is developed, designed, and delivered by process approach to inculcate the competences and skills to write and present the research articles.

Equivalent Course(s)

EDU 5303

Course Name	Research Philosophy	Credit Hours	3 (3,0)
Course Code	MS 5416	Prerequisite(s)	None

Course Description

This course stems from the belief that an examination of the intimate relationship between philosophy and research is important and useful. One area where philosophical ideas and contemporary research practices have come together is related to discussions about the epistemological and ontological underpinnings of qualitative and quantitative research methods. This discussion can be understood through different positions labeled as positivist or naturalist on the one hand and phenomenological, hermeneutical, interpretivist or discourse and narrative analyst on the other. This course aims at communicating the relevance of philosophical ideas in conducting research today. Through a selection of readings it provides a historical overview of the development of philosophical thought which is indispensable for the understanding of the contemporary world and its fundamental theoretical bases.

Equivalent Course(s)

None

1.2.6 Master of Science in Management Sciences (MSMS)

Course Name	Qualitative Research Methods	Credit Hours	3 (3,0)
Course Code	MS 5131	Prerequisite(s)	None

Course Description This course is designed to provide master's students with a strong introduction to the philosophical foundations, approaches and methods associated with qualitative research; and to acquaint them with setting, design, issues, and debates related to qualitative research. This course will enhance students' capacities to understand and evaluate qualitative research in business and related fields. The focus of this course is to introduce the field of qualitative research and prepare students in the skills, techniques, and knowledge necessary to undertake independent research using qualitative research methodology.

Equivalent Course(s) None

1.2 Masters and PhD

1.2.7 Doctor of Philosophy in Management Sciences (PhD MS)

Students enrolled in Doctor of Philosophy in Management Sciences (PhD MS) program are required to complete 54 credit hours within seven (7) years. Following is the breakup of the 54 Credit Hour courses.

- 4 Compulsory Courses (12 Credit Hours)
- 2 Elective Course¹³ (6 Credit Hours)
- 2 Independent Research Studies (6 Credit Hours)
- 1 Dissertation (30 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MS 6106	Advanced Research Methods and Techniques	107
MS 6216	Advanced Quantitative Tools for Research	107
MS 6217	Advanced Research Philosophy	108
MS 6xxx	Elective-I	253
Spring Semester		
MS 6xxx	Elective-II	253
MS 6117	Advanced Qualitative Research Methods	108
MS 6119	Independent Research Study-I	-
MS 6219	Independent Research Study-II	-
Second Year		
Fall Semester		
MS 6xxx	Dissertation (Proposal)	-
Spring Semester		
MS 6xxx	Dissertation	-
Third Year		
Fall Semester		
MS 6xxx	Dissertation	-
Spring Semester		
MS 6xxx	Dissertation	-

All courses may not be offered every year. Alternate courses may be substituted as and when required

13- List of Electives is given in Appendix B.

1.2.7 Doctor of Philosophy in Management Sciences (PhD MS)

Course Name	Advanced Research Methods and Techniques	Credit Hours	3 (3,0)
Course Code	MS 6106	Prerequisite(s)	None

Course Description The course of ARMT covers advanced research methods and techniques that include role of philosophy in research, research paradigms, role of theory in research, advanced research strategies and approaches, gap identification in literature, research tools development process and techniques, and inference through qualitative, quantitative, and mixed data analysis. The emphasis of the course is on quality criteria in research through rigorous analysis and in depth understanding of the phenomenon.

Equivalent Course(s) None

Course Name	Advanced Quantitative Tools for Research	Credit Hours	3 (3,0)
Course Code	MS 6216	Prerequisite(s)	MS 5204

Course Description This course is designed for PhD students and requires an understanding of quantitative tools for research. It covers advanced topics in quantitative research like: multivariate model building, multiple regression analysis, multiple discriminant analysis, MANOVA, ANCOVA, canonical correlations, factor analysis, cluster analysis, conjoint analysis, structured equation modelling. The emphasis of course is using advanced techniques for research with concept building and software application.

Equivalent Course(s) None

1.2.7 Doctor of Philosophy in Management Sciences (PhD MS)

Course Name	Advanced Research Philosophy	Credit Hours	3 (3,0)
Course Code	MS 6217	Prerequisite	MS 5416

Course Description	<p>This course stems from the belief that an examination of the intimate relationship between philosophy and research is an important and fruitful one. One area where philosophical ideas and contemporary research practices have come together is related to discussions about the epistemological and ontological underpinnings of qualitative and quantitative research methods. This discussion can be understood through different positions labeled as positivist or naturalist on the one hand and phenomenological, hermeneutical, interpretivist or discourse and narrative analyst on the other hand. The former position attempts to apply the principles of the natural sciences to the study of people and the society we inhabit. While the latter rejects such a perspective because human beings are primarily agents (autonomous beings) and are capable to engage in self-reflection and their peculiar surroundings. Moreover, every research framework is ineluctably embedded in some kind of conception of the world and to knowing that world. Research tools or procedures like questionnaire, attitude scale, random sample, and so on are essentially premised upon different views and orientations towards the world that are antecedently conditioned and always prior to these instruments to be used in the first place. Research methods are not part of some single and absolute algorithm of 'how to conduct research' but are the outcome of human pursuits of knowledge, thereby rooted in philosophical paradigms and various research traditions. Research methods are primordially based upon metaphysical and epistemological assumptions which must be understood and scrutinized in executing research plans. This course presents philosophical ideas relevant to the conduct and practices of research methods which are useful not only as 'a rite de passage' for research students but as a way of developing and sharpening their understanding about research. Thus, philosophy plays a pivotal role in developing our thinking of the overall context of our research projects and our findings. It can also help us to avoid fallacious reasoning and illegitimate inferences from data.</p>
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Equivalent Course(s)	None
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Course Name	Advanced Qualitative Research Methods	Credit Hours	3 (3,0)
Course Code	MS 6117	Prerequisite(s)	MS 5131

Course Description	<p>This course will familiarize students with principal research methods used in qualitative research in Business Management, Social Science and Human Behavior. From reviewing the most common stances on qualitative research, and knowledge claims made from qualitative research methods, students will be engaged into diverse traditions of qualitative inquiry viz. narrative research, ethnography, phenomenology, grounded theory, case study, and action research. A comparison of philosophy, theory, concepts, inquiry modes, settings, analyses, and reporting styles will be revealed through small cases and research articles.</p>
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Equivalent Course(s)	None
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Department of Computer Science

2.1 Bachelor of Science

2.1 Bachelor of Science in Computer Science (BSCS)

The Bachelor of Science in Computer Science (BSCS) program is offered through a well-trained foreign qualified faculty. It consists of 40 courses (five courses per semester) with a total of 130 credit hours. BS (CS) Program is accredited by NCEAC. The maximum time to complete the degree is 7 years. The breakup of 40 courses is as follow:

- 29 Compulsory Course (97 Credit Hours)
- 2 University Electives¹⁴ (6 Credit Hours)
- 7 CS Electives¹⁵ (21 Credit Hours)
- 2 Final Year Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
CSC 1101	Calculus and Analytical Geometry	113
CSC 1102	English Composition and Comprehension	113
CSC 1103	Fundamentals of Programming	113
CSC 1104	Introduction to Computing	114
CSC 1105	Islamiat and Pakistan Studies/Humanities	114
		Total Credit Hrs. 16
Spring Semester		
CSC 1201	Discrete Mathematical Structures	114
CSC 1202	Multivariate Calculus	115
CSC 1203	Object Oriented Programming	115
CSC 1204	Physics	115
CSC 1205	Technical and Business Writing	116
		Total Credit Hrs. 16
Second Year		
Fall Semester		
CSC 2101	Communication & Presentation Skills	116
CSC 2102	Data Structures and Algorithms	116
CSC 2103	Digital Logic Design	117
CSC 2104	Linear Algebra & Differential Equations	117
CSC 2105	Statistics & Probability	117
		Total Credit Hrs. 18
Spring Semester		
CSC 2201	Computer Organization and Assembly Language	118
CSC 2202	Data Communications and Computer Networks	118
CSC 2203	Database Systems	118
CSC 2204	Finite Automata Theory and Formal Languages	119
CSC 2205	Operating Systems	119
		Total Credit Hrs. 18

¹⁴ List of University Electives is given in Appendix B.

¹⁵ List of CS Electives is given in Appendix B.

2.1 Bachelor of Science in Computer Science (BSCS)

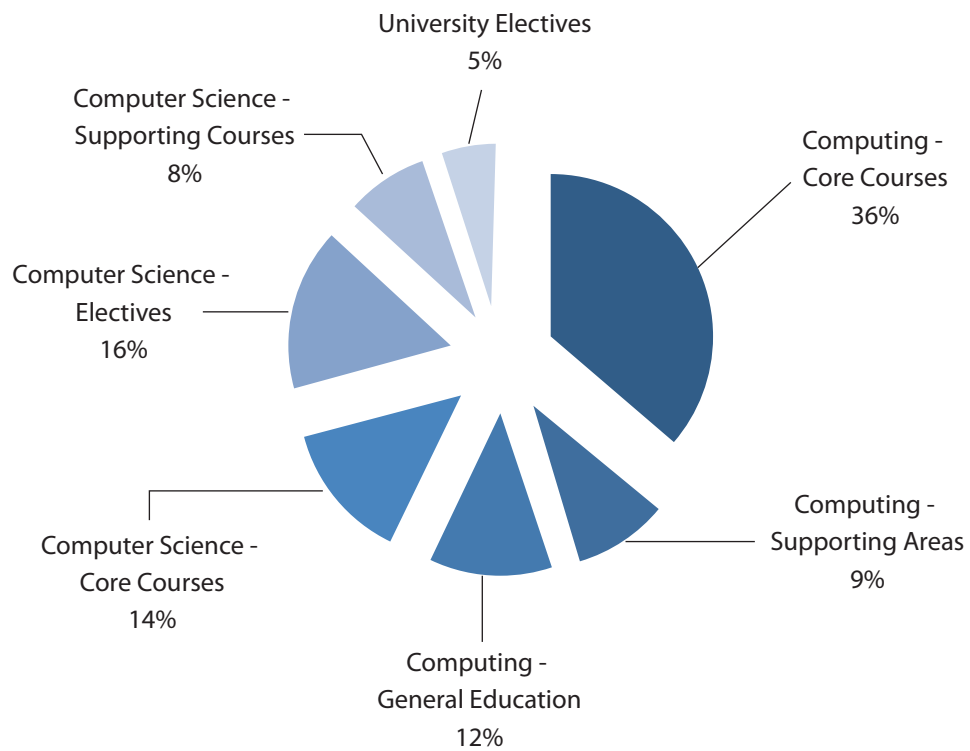
Course Code	Course Title	Page #
Third Year		
Fall Semester		
CSC 3101	Computer Architecture	119
CSC 3102	Human Computer Interaction	120
CSC 3103	Introduction to Software Development	120
CSC 3104	Software Engineering-I	120
CSC 4xx	University Elective-1	254
Total Credit Hrs. 17		
Spring Semester		
CSC 3201	Compiler Construction	121
CSC 3202	Design & Analysis of Algorithms	121
CSC 3203	Numerical Computing	121
CSC 4xx	CS Elective-I	254
CSC 4xx	CS Elective-II	254
Total Credit Hrs. 15		
Fourth Year		
Fall Semester		
CSC 4101	Artificial Intelligence	122
CSC 4102	Professional Practices	122
CSC 4105	Final Year Project-I	122
CSC 4xx	CS Elective-III	254
CSC 4xx	CS Elective-IV	254
Total Credit Hrs. 15		
Spring Semester		
CSC 4205	Final Year Project-II	122
CSC 4xx	CS Elective-V	254
CSC 4xx	CS Elective-VI	254
CSC 4xx	CS Elective-VII	254
CSC 4xx	University Elective-II	254
Total Credit Hrs. 15		

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

2.1 Bachelor of Science in Computer Science (BSCS)

DISTRIBUTION OF CREDIT HOURS

Course Group		Cr. Hrs.	%
Computing	Core Courses	47	36%
	Supporting Areas	12	9%
	General Education	15	12%
Computer Science	Core Courses	18	14%
	Electives	21	16%
	Supporting Courses	11	8%
University Electives		6	5%
Total		130	100%



2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Calculus and Analytical Geometry	Credit Hours	3 (3,0)
Course Code	CSC 1101	Prerequisite(s)	None

Course Description

This course begins with a review of algebra and trigonometry; then the idea of limits and continuity is introduced. With the knowledge of limits and continuity the student develops the concept of the derivative and its applications. At the end, the student studies the anti-derivative of elementary functions and the applications of the definite integral in geometry, science, and engineering. Applicable toward graduation where program structure permits. Topics include (but are not limited to) the following: limits and continuity; definition of derivative; rate of change, slope; derivatives of polynomial and rational functions; the chain rule; implicit differentials; approximation by differentials; higher order derivatives; Rolle's Theorem; mean value theorem; applications of the derivative; anti-derivative; the definite integral; the fundamental theorem of calculus; area, volume, other applications of the integral; the calculus of the trigonometric functions; logarithmic and exponential functions and techniques of integration

Equivalent Course(s)

BA 2404, ME 1104

Course Name	English Composition and Comprehension	Credit Hours	3 (3,0)
Course Code	CSC 1102	Prerequisite(s)	CSC 2101

Course Description

This course will provide students with the basic skills needed to organize, develop and deliver effective communication. It will also empower the students to determine the appropriate purpose, audience, and mode of communication based on the context. The course focuses on paragraph and essay writing, comprehension and reading as well as cause and effect, descriptive, comparative writing skills. The students will also be able to design their own CVs and cover letters which would help them in their future job search.

Equivalent Course(s)

ME 1205, MD 1222, SS 2316, BIO 1211

Course Name	Fundamentals of Programming	Credit Hours	4 (3,1)
Course Code	CSC 1103	Prerequisite(s)	None

Course Description

This course is about learning the basics of programming languages. It provides Principles of Structured and Modular Programming and Overview of Structured Programming, and subsequently targets the development of coding abilities in a student. Later, it develops skills to identify errors, troubleshoot and finally, to analyze a C programming code. To do so, the following technical topics are covered: Constructs, Data Types; Basics of Input and Output, Selection and Decision (If, If-Else, Nested If-Else, Switch Statement and Condition Operator), Repetition (While and For Loop, Do-While Loops), Break Statement, Continue Statement, Control Structures, Functions, Arrays, Pointers, Records, Files (Input-Output), Testing & Debugging.

Equivalent Course(s)

None

2.11 Bachelor of Science in Computer Science (BSCS)

Course Name	Introduction to Computing	Credit Hours	3 (2,1)
Course Code	CSC 1104	Prerequisite(s)	None

Course Description	This course introduces fundamental computer concepts, including basic functions and operations of the computer. Course will cover topics that include identification of hardware components, computer software and architecture, operating system and network technologies, basic computer operations, internet and the world wide web, databases and information systems.
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Equivalent Course(s)	BA 1108, BA 1103, BIO 1104, AF 1102, EN 1102, BST 1102
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Course Name	Islamiat and Pakistan Studies/Humanities	Credit Hours	3 (3,0)
Course Code	CSC 1105	Prerequisite(s)	None

Course Description	This course covers the fundamentals of Islam (Aqaid, Ibadat, Islamic Dawah etc); ethical values of Islam; seerah of the Holy Prophet (PBUH); Islamic civilization and its effects on humanity, study of other prominent world religions and ethical systems in comparison with Islamic viewpoint; Multicultural societies, historical background of Pakistan: Muslim society in Indo-Pakistan, the movement led by the societies, the downfall of Islamic society, the establishment of British Raj- causes and consequences. It also covers political evolution of Muslims in the twentieth century: Sir Syed Ahmed Khan; Muslim League; Nehru; Allama Iqbal: independence movement; Lahore Resolution; Pakistan culture and society, constitutional and administrative issues, Pakistan and its geo-political dimension, Pakistan and international affairs, Pakistan and the challenges ahead.
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Equivalent Course(s)	BA 1106, MD 2402, SS 1109, BIO 2303, EN 1105
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Course Name	Discrete Mathematical Structures	Credit Hours	3 (3,0)
Course Code	CSC 1201	Prerequisite(s)	None

Course Description	This course introduces the applications of discrete mathematics in the field of computer science. It covers sets, logic, proving techniques, combinatorics, functions, relations, graph theory and algebraic structures. These basic concepts of sets, logic functions and graph theory are applied to Boolean Algebra and logic networks, while the advanced concepts of functions and algebraic structures are applied to finite state machines and coding theory.
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Equivalent Course(s)	None
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2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Multivariate Calculus	Credit Hours	3 (3,0)
Course Code	CSC 1202	Prerequisite(s)	CSC 1101

Course Description	The objective of this course is to examine functions of several variables, define and compute limits of functions at points and define and determine continuity, define and compute partial derivatives, directional derivatives and differentials of multivariable functions and examine conditions of differentiability; find the equation of the tangent plane to a surface at a point. Also, find local extreme values of functions of several variables, test for saddle points, examine the conditions for the existence of absolute extreme values, solve constraint problems using Lagrange multipliers, and solve related application problems and use rectangular, cylindrical and spherical coordinates systems to define space curves and surfaces in Cartesian and parametric forms.
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Equivalent Course(s)	None
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Course Name	Object Oriented Programming	Credit Hours	3 (2,1)
Course Code	CSC 1203	Prerequisite(s)	CSC 1103

Course Description	The object oriented paradigm presents a conceptual and practical introduction to imperative and object oriented programming, exemplified by Java. Along with providing grounding in the use of Java, the course will cover general principles of programming in imperative and object oriented frameworks. The course would enable students to develop programs that support experimentation, simulation and exploration in other parts of the Information curriculum (e.g. the capacity to implement, test and observe a particular algorithm).
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Equivalent Course(s)	None
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Course Name	Physics	Credit Hours	4 (3,1)
Course Code	CSC 1204	Prerequisite(s)	None

Course Description	The topics covered in this course include particle kinematics and dynamics; conservation of energy and linear momentum; rotational kinematics; rigid body dynamics; conservation of angular momentum; simple harmonic motion; the static and dynamics of fluids. This course also includes basic electronics concepts that help students to understand all essential electronics used for computing.
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Equivalent Course(s)	None
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2.11 Bachelor of Science in Computer Science (BSCS)

Course Name	Technical and Business Writing	Credit Hours	3 (3,0)
Course Code	CSC 1205	Prerequisite(s)	CSC 1102

Course Description	Technical and Business Writing/Business and Electronic Communications aims to teach the principles and methodology of written and oral communication in the workplace. As business communicators you will be required to draft messages using a variety of communication channels and integrated electronic media. This course will prepare students to communicate knowledge and information to different audiences ranging from experts, to coworkers, to customers and to laypersons and to make the best use of electronic media.
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Equivalent Course(s)	BIO 2411
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Course Name	Communication and Presentation Skills	Credit Hours	3 (3,0)
Course Code	CSC 2101	Prerequisite(s)	None

Course Description	This course is aimed at improving English language communication and presentation skills of students. With a multidimensional approach, the course enables the students to practice the use of English in everyday situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to participate in seminars and discussions and make effective presentations, with an awareness of the audience and effective use of verbal and non-verbal communication. The course addresses the basic English language issues faced by the learners, while also aiming to foster in them, critical skills to develop a concise and clear argument, respond to others' comments and negotiate their own point of view persuasively. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in everyday communication in formal and informal contexts.
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Equivalent Course(s)	ME 1101, MD 1122, SS 1116, BIO 1111, AF 1203, EN 1106
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Course Name	Data Structures and Algorithms	Credit Hours	4 (3,1)
Course Code	CSC 2102	Prerequisite(s)	None

Course Description	This course covers the concept of specification, design, implementation, and use of the basic data types; important programming techniques, data abstraction techniques, object oriented programming and sorting; data types: sets, bags, sequential lists, order lists, stacks, queues, and trees; types of searching such as linear and binary search, and different techniques of sorting; linear data structures and implementation each with C++/Java and non-linear data structures with implementation and the complexity of an algorithm of search and sorting.
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Equivalent Course(s)	None
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2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Digital Logic Design	Credit Hours	4 (3,1)
Course Code	CSC 2103	Prerequisite(s)	None

Course Description	This course teaches theoretical concepts, well supported through practical work, systematic synthesis of the applied techniques for the design of practical digital systems. Topics include; introduction to various numbering systems, various design techniques, minimization techniques for designing efficient combinational and sequential logic circuits, basic digital circuit building blocks, such as, decoders, multiplexers, shift registers, flip flops, etc. Modern methods of designing digital circuits; designing of autonomous and input-controlled counters & shift-registers and concept of finite state machine are also introduced.
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Equivalent Course(s)	None
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Course Name	Linear Algebra and Differential Equations	Credit Hours	4 (4,0)
Course Code	CSC 2104	Prerequisite(s)	None

Course Description	The objective of this course is to provide a rigorous approach towards the solutions of linear models which involves more than one variable. The techniques discussed in this course can be implemented on a wide range of applications from physical world. The matrix algebra will be helpful in performing and understanding of matrix computations on a machine. The eigenvalues, eigenvectors, inner product spaces, orthogonally are useful concepts for the analysis of dynamical systems.
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Equivalent Course(s)	ME 1202
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Course Name	Statistics and Probability	Credit Hours	3 (3,0)
Course Code	CSC 2105	Prerequisite(s)	CSC 1101

Course Description	The course "Statistics and Probability" emphasizes the probabilistic foundations required to understand probability models and statistical methods. Topics covered will include the introduction to statistical methods (understanding data and its importance, data classification, tabulation, graphical representation), Central Tendencies, dispersion. Probability axioms, basic combinatory, discrete and continuous random variables, probability distributions, mathematical expectation, common families of probability distributions and introduction to correlation and regression. Brief discussion on Statistical Inferences and real life case studies will be included to further enhance students' understanding on the subject matter.
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Equivalent Course(s)	BA 3605, BA 5405
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2.1.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Computer Organization and Assembly Language	Credit Hours	3 (3,0)
Course Code	CSC 2201	Prerequisite(s)	CSC 2103

Course Description	This course teaches: Microprocessor Bus Structure: Addressing, Data and Control, Memory Organization and Structure (Segmented and Linear Models), Introduction to Registers and Flags, Data Movement, Arithmetic and Logic, Programmer Control, Subroutines, Stack and its operation, Peripheral Control Interrupts, Interfacing with high level languages, Real-time application. Objectives and Perspectives of Assembly Language, Addressing Modes, Introduction to the Assembler and Debugger, Manipulate and translate machine and assembly code, describe actions inside the processing chip, Discuss operations performed by an instruction set, Write a fully documented program, Using an assembler of choice.
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Equivalent Course(s)	None
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Course Name	Data Communications and Computer Networks	Credit Hours	4 (3,1)
Course Code	CSC 2202	Prerequisite(s)	None

Course Description	This course provide students with an overview of the concepts and fundamentals of data communication and computer networks. Topics includes: data communication concepts and techniques in a layered network architecture, communications switching and routing, types of communication, network congestion, network topologies, network configuration and management, network model components, layered network models (OSI reference model, TCP/IP networking architecture) and their protocols, various types of networks (LAN, MAN, WAN and Wireless networks) and their protocols.
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Equivalent Course(s)	None
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Course Name	Database Systems	Credit Hours	4 (3,1)
Course Code	CSC 2203	Prerequisite(s)	None

Course Description	This course covers: Basic database concepts; Entity Relationship modelling, Relational data model and algebra, Structured Query language; RDBMS; Database design, functional dependencies and normal forms; Transaction processing and optimization concepts; concurrency control and recovery techniques; and Database security and authorization. It also covers Small Group Project implementing a database; Physical database design; Storage and file structure indexed files, b-trees; files with dense index, files with variable length records, database efficiency and tuning.
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Equivalent Course(s)	None
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2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Finite Automata Theory and Formal Languages	Credit Hours	3 (3,0)
Course Code	CSC 2204	Prerequisite(s)	CSC 1201

Course Description

In this course we are primarily concerned with what computers can do. It turns out that there are problems that cannot be solved by computer, or, at least, by machines corresponding to the mathematical models of computers we shall present. Finite Automata is the theoretical study of capabilities and limitations of Computers. This course introduces finite automata, formal languages and computability, including regular and context-free languages, context-free grammar, Pushdown Automata, and Turing Machine.

Equivalent Course(s)

None

Course Name	Operating Systems	Credit Hours	4 (3,1)
Course Code	CSC 2205	Prerequisite(s)	None

Course Description

This course involves study of concepts and components of general purpose operating systems. These include the study of processes and process synchronization, multithreaded applications, deadlocks, memory management, and file systems. UNIX and Windows NT are general purpose operating systems used as examples when studying these concepts. Laboratory assignments of process/thread synchronization, process communication, and file systems are given.

Equivalent Course(s)

None

Course Name	Computer Architecture	Credit Hours	3 (3,0)
Course Code	CSC 3101	Prerequisite(s)	CSC 2103

Course Description

This course will introduce student to computer organization and computer architecture. Computer organization is concerned with the way hardware components are connected together to form a computer system, while computer architecture is concerned with the structure and behavior of the various functional modules of the computer and how they interact. Topics may include: Basic Computer Organization and Design, Programming the Basic Computer, Micro-programmed Control, Central Processing Unit, Pipeline and Array Processing, Memory Organizations and Multi Processors.

Equivalent Course(s)

None

2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Human Computer Interaction	Credit Hours	3 (3,0)
Course Code	CSC 3102	Prerequisite(s)	None

Course Description Human-computer interaction is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. The course is intended to introduce the student to the basic concepts of human-computer interaction. It will cover basic theory and methods that exist in the field. The course will unfold by examining design and evaluation. Case studies are used throughout the readings to exemplify the methods presented and to lend a context to the issues discussed.

Equivalent Course(s) None

Course Name	Introduction to Software Development	Credit Hours	4 (3,1)
Course Code	CSC 3103	Prerequisite(s)	CSC 1203

Course Description This hands-on course is designed for those with no previous programming experience and is also appropriate for experienced developers who want to learn modern Object-Oriented (OO) languages such as Java and C#. By using an "objects first" approach, students receive an intensive introduction to object-oriented programming. Topics include classes and objects and their relationship, primitive data types, constructors, methods, repetition and selection, collections, abstraction and modularization. Upon successful completion, participants will have a basic understanding of programming concepts and objects, and be prepared to move on to higher level OO programming language courses.

Equivalent Course(s) None

Course Name	Software Engineering-I	Credit Hours	4 (3,1)
Course Code	CSC 3104	Prerequisite(s)	None

Course Description The topics covered in this course includes: Introduction to Software Process Models; Programming in the Large vs. Individual Programming; Evaluation of Software Process Models; Requirements Analysis and Design Modeling Tools; Testing Tools; Programming Environments that Automate Parts of Program Construction Processes; Tool Integration Concepts and Mechanisms; Functional Requirements; Properties of Requirements; Software Requirements Elicitation; Describing System Data; Non-Functional Requirements; Requirements Specifications; System Design Principles; Design Paradigms; Structural and Behavioral Models of Software Designs; Design Patterns; Relationships between Requirements and Designs; Software Architecture; Refactoring Designs using Design Patterns; The Use of Components in Design; Coding Practices; Coding Standards; Integration Strategies; Verification and Validation; Inspections; Reviews; Audits; Testing Types; Testing Fundamentals; Defect Tracking; and Limitations of Testing.

Equivalent Course(s) None

2.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Compiler Construction	Credit Hours	3 (3,0)
Course Code	CSC 3201	Prerequisite(s)	CSC 2204

Course Description This course provides a thorough understanding of the basic structure of compilers for programming languages. A major part of the course consists of the implementation of a compiler for a simplified Pascal-like language. The course will acquaint students with software tools and techniques for developing compilers.

Equivalent Course(s) None

Course Name	Design and Analysis of Algorithms	Credit Hours	3 (3,0)
Course Code	CSC 3202	Prerequisite(s)	CSC 2102

Course Description This course will cover the basic approaches and mindsets for analyzing and designing algorithms and data structures. Topics will range from time space complexity to sorting, searching, and selection algorithms. Algorithm design techniques: divide-and-conquer, dynamic programming, greedy algorithms and others will be covered along with fundamental graph problems: minimum-cost spanning tree, connected components, topological sort, and shortest paths.

Equivalent Course(s) None

Course Name	Numerical Computing	Credit Hours	3 (3,0)
Course Code	CSC 3203	Prerequisite(s)	CSC 1101

Course Description The concepts of efficiency, reliability and accuracy of a method; Minimizing computational errors; Theory of Differences; Difference Operators, Difference Tables, Forward Differences, Backward Differences and Central Differences; Mathematical Preliminaries; Solution of Equations in one variable; Interpolation and Polynomial Approximation; Numerical Differentiation and Numerical Integration; Initial Value Problems for Ordinary Differential Equations; Direct Methods for Solving Linear Systems; Iterative Techniques in Matrix Algebra; and Solution of non-linear equations are covered in this course.

Equivalent Course(s) None

2.1.1 Bachelor of Science in Computer Science (BSCS)

Course Name	Artificial Intelligence	Credit Hours	3 (3,0)
Course Code	CSC 4101	Prerequisite(s)	CSC 2102, CSC 2204

Course Description	This course covers Artificial Intelligence: Introduction, Intelligent Agents. Problem-solving: Solving Problems by Searching, Informed Search and Exploration, Constraint Satisfaction Problems, Adversarial Search. Knowledge and reasoning: Logical Agents, First-Order Logic, Inference in First-Order Logic, Knowledge Representation. Planning and Acting in the Real World. Uncertain knowledge and reasoning: Uncertainty, Probabilistic Reasoning, Probabilistic Reasoning over Time, Making Simple Decisions, Making Complex Decisions. Learning: Learning from Observations, Knowledge in Learning, Statistical Learning Methods, Reinforcement Learning. Communicating, perceiving, and acting: Communication, Probabilistic Language Processing, Perception and Robotics. Introduction to LISP/PROLOG and Expert Systems (ES) and Applications.
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Equivalent Course(s)	None
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Course Name	Professional Practices	Credit Hours	3 (3,0)
Course Code	CSC 4102	Prerequisite(s)	None

Course Description	This course provides an introduction to and an overview of the professional practices of software engineers. Also it provides necessary knowledge and set of skills/ tools to aid understanding at a strategic level and the day to day tasks of technology professionals. This will be done by encouraging professionalism and professional practice methods cases to understand the huge horizons. In addition students will identify ethical conflicts, identify their responsibilities and options, and think through the implications of possible solutions to ethical conflicts.
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Equivalent Course(s)	None
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Course Name	Final Year Project-I	Credit Hours	3 (0,3)
Course Code	CSC 4105	Prerequisite(s)	CSC 3103

Course Description	This is the project that final year students carry out as part of their degree requirement. Part-I generally carries to build concept and prototype model. The objective of the course is to implement and demonstrate the software engineering processes and principles which include; project analysis, design, implementation and evaluation of a large-scale problem involving computer and computational systems. The project is supervised by a faculty member, under whose guidance each project team will research the solution. The mid evaluation is performed by a team of experts at the conclusion of part-1.
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Equivalent Course(s)	None
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Course Name	Final Year Project-II	Credit Hours	3 (0,3)
Course Code	CSC 4205	Prerequisite(s)	CSC 4105

Course Description	This is in continuation to FYP-I taken in the previous semester. In this phase, students build the actual project after duly completing the prototype in part-I. The complete project is evaluated by a team of experts at the conclusion of part-II.
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Equivalent Course(s)	None
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2.2 Master of Science and PhD

2.2.1 Master of Science in Computer Science (MSCS)

SZABIST offers Master of Science in Computer Sciences (MSCS) degree in three domains: Core Computer Science and two specialization tracks, i.e., Software Engineering (SE) and Networks and Security (N&S). Students have to complete 4 focused courses in any specific domain. The program is of 2-year duration and is offered in the evening. It requires 33 credit hours to complete the degree with 9 courses (27 credit hours) and Thesis/Research Work (6 credit hours).

The following is the break-up of the minimum credit hours requirements to be fulfilled by the students enrolled in this program:

- 5 Compulsory/Core Courses (15 Credit Hours)
- 4 Electives Courses¹⁶ (12 Credit Hours)
- 1 Thesis (6 Credit Hours) or 2 Course (3 Credit Hours each)

Course Code	Course Title	Page #
MSCS		
First Year		
First Semester		
CSC 5105	Research Methodology	124
CSC 5101	Advanced Algorithms Analysis	124
CSC 5102	Theory of Computation	125
Second Semester		
CSC 5201	Advanced Operating Systems	125
CSC 5202	Advanced Computer Architecture	125
CSC 5xxx	Elective I (Independent Study-Topic related to CS/SE/N&S Stream-I or II)	255
Second Year		
Third Semester		
CSC 5xxx	Thesis or Course work (from CS/SE/N&S Stream –II)	255
CSC 5xxx	Elective-II (from CS/SE/N&S-Stream-I)	255
CSC 5xxx	Elective-III (from CS/SE/N&S-Stream-I)	255
Fourth Semester		
CSC 5xxx	Thesis or Course Work (from CS/SE/N&S-Stream-II)	255
CSC 5xxx	Elective-IV (from CS/SE/N&S-Stream-I)	255

All courses may not be offered every year. Alternate courses may be substituted as and when required.

0- List of Electives is given in Appendix B

2.2 | Master of Science in Computer Sciences (MSCS)

Course Name	Research Methodology	Credit Hours	3 (3,0)
Course Code	CSC 5105	Prerequisite(s)	None

Course Description

This course covers international ethical, professional and legal issues in computing research including concept of research, definitions, quantitative and qualitative approaches, proposal for research, forming hypotheses, originality, critical analysis methods; also reading for research; data collection, information gathering; literature surveys and questionnaires data analysis, presentation of information, writing academic papers, content and referencing. The students have to perform meta analyses of 25-30 research papers selected in current research topics in International Journals. Topic and papers are selected with approval from the instructor. Conference papers are not allowed for review. Students have to read all such papers and prepare the analysis related to model, methods, findings and come up with what has been done related to selected area of research and research gaps if any are explicitly identified with future work.

Equivalent Course(s)

CSC 6101

Course Name	Advanced Algorithms Analysis	Credit Hours	3 (3,0)
Course Code	CSC 5101	Prerequisite(s)	None

Course Description

Advanced Algorithm Analysis includes the introduction of formal techniques and the underlying mathematical theories like NP-completeness, search techniques, randomized algorithms and heuristic and approximation algorithms. Topics include: asymptotic analysis of upper and average complexity bounds using big-O, little-o, and theta notation. Fundamental algorithmic strategies (brute-force, greedy, divide-and-conquer, backtracking, branch-and-bound, pattern matching, and numerical approximations) are covered. It also covers standard graph and tree algorithms, standard complexity classes, time-space tradeoffs in algorithms, using recurrence relations to analyze recursive algorithms, non-computable functions, the halting problem, and the implications of non-computability. Algorithmic animation is used to reinforce theoretical results. Upon completion of the course, students should be able to explain the mathematical concepts used in describing the complexity of an algorithm, and select and apply algorithms appropriate to a particular situation.

Equivalent Course(s)

None

2.2.1 Master of Science in Computer Sciences (MSCS)

Course Name	Theory of Computation	Credit Hours	3 (3,0)
Course Code	CSC 5102	Prerequisite(s)	None

Course Description

This course includes set theory, sequences, tuples, functions, relations and graphs; Turing machine; language, designing variants of Turing machines, enumerators, dovetailing, Church-Turing Thesis, Hilbert's Tenth problem, decidable languages, acceptance problem for DFAs, the halting problem, reducibility, recursion theorem, logical theories, complexity theory; time complexity, non-deterministic time, Class P, Class NP, NP-completeness, space complexity, relationship between Space and Time complexity, P-SPACE-completeness, Class L, Class NL and NL-completeness.

Equivalent Course(s)

None

Course Name	Advanced Operating Systems	Credit Hours	3 (3,0)
Course Code	CSC 5201	Prerequisite(s)	None

Course Description

This course covers characterization of modern operating systems; file systems, memory management techniques, process scheduling and resource management; system models; architectural models; inter process communication; issues of security in distributed systems (partial coverage); distributed file system; concurrency control in distributed systems; problems of coordination and agreement in distributed systems; replication-advantages and requirements; fault-tolerant services and mobile and ubiquitous computing.

Equivalent Course(s)

None

Course Name	Advanced Computer Architecture	Credit Hours	3 (3,0)
Course Code	CSC 5202	Prerequisite(s)	None

Course Description

This course covers architectural and organizational attributes of computer architecture like Flynn's classifications; SISD, SIMD, MISD and MIMD systems and their working principles, shared versus distributed memory architectures, Bernstein conditions, performance measurements of computers, open architecture versus close architectures, CISC, RISC, conventional versus super-scalar (K-Issue) processors and WINTEL architecture are studied. Furthermore, cache memory, techniques to reduce cache misses, multi-level caches, cache-look-ahead processor, micro-programmed controller versus hardwired controller, CPU performance metrics, pipelining, multiprogramming and time-sharing operating systems, design of a generic processor and its architecture, designing of executable versus hardwired instructions, microcode versus macro code, concept of control word (microinstructions), parallel computing, taxonomy of parallel architectures, parallel applications, synchronization mechanisms, data level parallelism (Vector Processing, Multimedia Applications, Graphics Processing Units) are also covered in the course.

Equivalent Course(s)

None

2.2 Master of Science and PhD

2.2.2 Doctor of Philosophy in Computing (PhD Computing)

Doctor of Philosophy in Computing (PhD Computing) program requires completion of a total of 48 credit hours with 4 courses, 2 Independent Studies (IS) and a dissertation. The following is the break-up of the credit hours requirements to be fulfilled by the students enrolled in this program in three (3) years.

- 4 Elective Courses¹⁷ (12 Credit Hours)
- 2 Independent Studies (06 Credit Hours)
- 1 Dissertation (30 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
CSC 6101	Research Methodology ¹⁸ (Elective-I)	105
CSC 6xxx	Elective-II	256
CSC 6xxx	Elective-III	256
Spring Semester		
CSC 6xxx	Independent Research Study	-
CSC 6xxx	Elective-IV	256
CSC 6xxx	Elective-V	256
Second Year		
Fall Semester		
CSC 6xxx	Dissertation	-
Spring Semester		
CSC 6xxx	Dissertation	-
Third Year		
Fall Semester		
CSC 6xxx	Dissertation	-
Spring Semester		
CSC 6xxx	Dissertation	-

All courses may not be offered every year. Alternate courses may be substituted as and when required.

17- List of Electives is given in Appendix B.

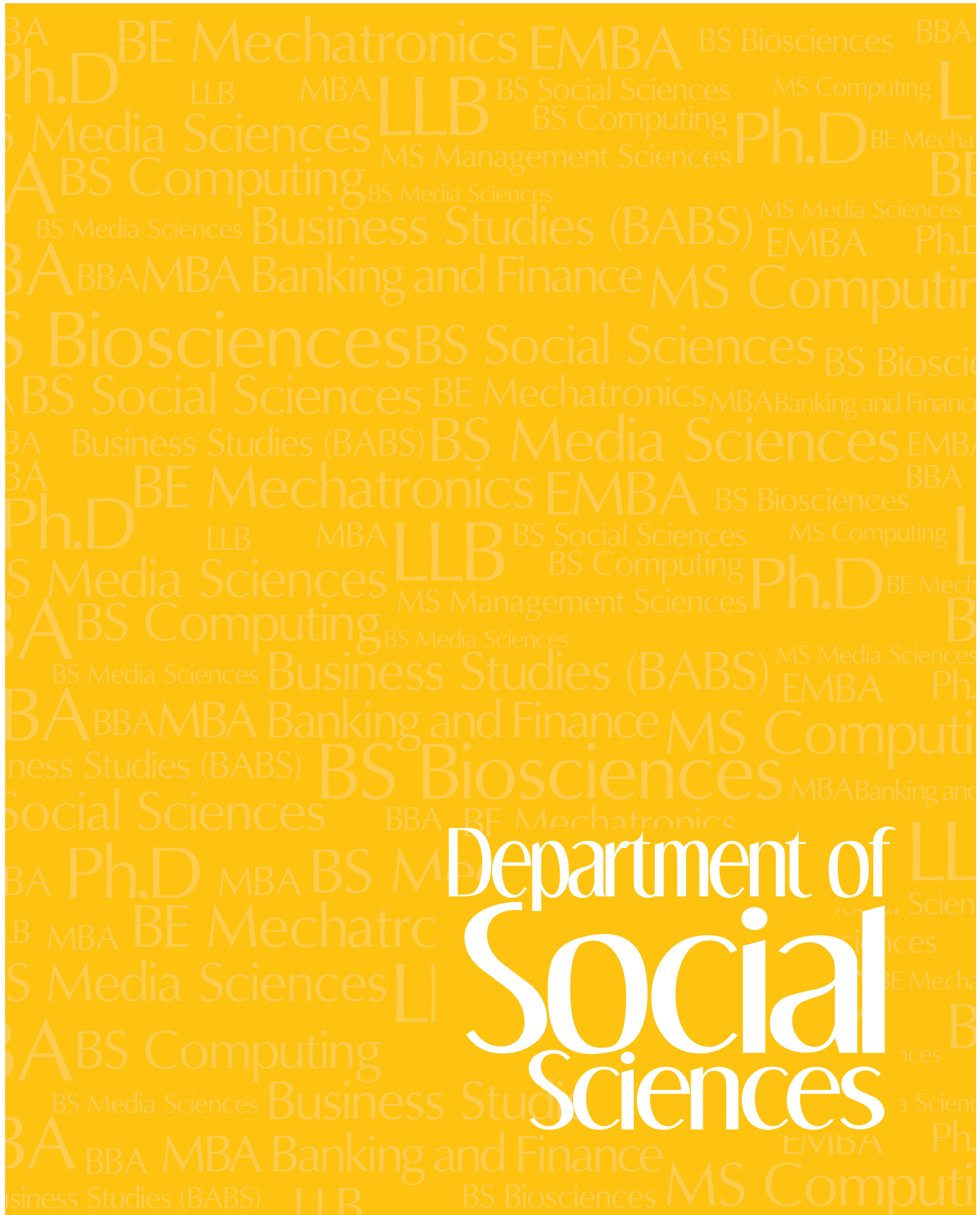
18- The course of Research Methodology is compulsory if not done earlier in Masters.

2.2.2 Doctor of Philosophy in Computing (PhD Computing)

Course Name	Research Methodology	Credit Hours	3 (3,0)
Course Code	CSC 6101	Prerequisite(s)	None

Course Description This course covers international ethical, professional and legal issues in computing research including concept of research, definitions, quantitative and qualitative approaches, proposal for research, forming hypotheses, originality, critical analysis methods; also reading for research; data collection, information gathering; literature surveys and questionnaires data analysis, presentation of information, writing academic papers, content and referencing. The students have to perform meta analyses of 25-30 research papers selected in current research topics in International Journals. Topic and papers are selected with approval from the instructor. Conference papers are not allowed for review. Students have to read all such papers and prepare the analysis related to model, methods, findings and come up with what has been done related to selected area of research and research gaps if any are explicitly identified with future work.

Equivalent Course(s) CSC 5105



Department of Social Sciences

3.1 Bachelor of Science

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Students enrolled in Bachelor of Science in Social Sciences (BSSS) program are required to complete a total of 144 credit hours within seven (7) years. The course break-up is as follows:

- 32 Compulsory Courses (96 Credit Hours)
- 12 Major Courses¹⁹ (36 Credit Hours)
- 2 Elective Courses²⁰ (6 Credit Hours)
- 1 Research Project (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
SS 1117	Computer and Web Skills	131
SS 1116	English for General Purposes (EGP)	131
SS 1109	Islamiat / Ethics and Pakistan Studies	131
SS 1105	Microeconomics	132
SS 1115	Community Services	132
SS 1201	Introduction to Social Sciences	132
Spring Semester		
SS 2306	Psychology	132
SS 1205	Macroeconomics	133
SS 2307	Sociology	133
SS 1155	Introduction to Political Science	133
SS 2412	International Relations	133
SS 4705	Sindh Studies	134
Second Year		
Fall Semester		
SS 2314	Study of Anthropology	134
SS 2316	English for Academic Purposes (EAP)	134
SS 2313	Introduction to Social Psychology	135
SS 2318	Mathematics and Statistics	135
SS 2413	Philosophy	135
SS 1xxx	Elective-I	257
Spring Semester		
SS 2406	Gender Studies	136
SS 2418	Statistical Inferences	136
SS 2414	Introduction to Organizational Psychology	136
SS 2411	Environmental Studies	137
SS 1209	Social Policy	137
SS 1xxx	Elective-II	257

19- List of Major Courses is given in Appendix C.
20- List of Electives is given in Appendix B.

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
SS 2312	Culture, Art and Society	137
SS 3509	Language-I	137
SS 3606	Political Economy	138
SS 4xxx	Major-I	267-269
SS 4xxx	Major-II	267-269
SS 4xxx	Major-III	267-269
Spring Semester		
SS 3504	Research Methods	138
SS 3605	International Law and Human Rights	138
SS 3609	Language-II	139
SS 4xxx	Major-IV	267-269
SS 4xxx	Major-V	267-269
SS 4xxx	Major-VI	267-269
Fourth Year		
Fall Semester		
SS 3503	Development Studies	139
SS 4707	Introduction to Health Psychology	139
SS 4709	Research Project-I	139
SS 4xxx	Major-VII	267-269
SS 4xxx	Major-VIII	267-269
SS 4xxx	Major-IX	267-269
Spring Semester		
SS 4804	Public Policy	140
SS 4809	Research Project-II	140
SS 2405	Enlightenment	140
SS 4xxx	Major-X	267-269
SS 4xxx	Major-XI	267-269
SS 4xxx	Major-XII	267-269

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Computer and Web Skills	Credit Hours	3 (3,0)
Course Code	SS 1117	Prerequisite(s)	None

Course Description This course provides understanding on computer systems and their applications. The course focuses on discussing the desktop environment, word processing, spreadsheets, graphics packages, the internet, computer programming, Microsoft Access, Microsoft Visio, html, and webpage developments.

Equivalent Course(s) BA 1103, BA 1108, CSC 1104, BIO 1104, AF 1102, BST 1102

Course Name	English for General Purposes (EGP)	Credit Hours	3 (3,0)
Course Code	SS 1116	Prerequisite(s)	None

Course Description This course is aimed at improving English language communication and presentation skills of students. With a multidimensional approach, the course enables the students to practice the use of English in everyday situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to participate in seminars and discussions and make effective presentations, with an awareness of the audience and effective use of verbal and non-verbal communication. The course addresses the basic English language issues faced by the learners, while also aiming to foster in them, critical skills to develop a concise and clear argument, respond to others' comments and negotiate their own point of view persuasively. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in everyday communication in formal and informal contexts.

Equivalent Course(s) ME 1101, MD 1122, CSC 2101, BIO 1111, AF 1203, EN 1106

Course Name	Islamiat/Ethics and Pakistan Studies	Credit Hours	3 (3,0)
Course Code	SS 1109	Prerequisite(s)	None

Course Description This course discusses the fundamental Islamic concepts and a concise history of Pakistan. Topics include pillars of Islam, the Shariah, discourses on Fiqh, the progression of Muslim society (from the advent of Islam up to the independence of the Indian sub-continent), and post-independence events in Pakistan.

Equivalent Course(s) BA 1106, CSC 1105, MD 2402, BIO 2303, AF 1205

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	SS 1105	Prerequisite(s)	None

Course Description Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, the product markets and the resource markets. It also deals with application of demand and supply, cost analysis and factors of production.

Equivalent Course(s) BA 1102, BA 5302, AF 2405, BST 1105

Course Name	Community Services	Credit Hours	3 (3,0)
Course Code	SS 1115	Prerequisite(s)	None

Course Description This course is comprised of two components. First, it introduces students to community-based environment, development and application of social policies, the scope of volunteer work in general and non-governmental organizations (NGOs) in particular, cultural and social aspects of community work, and formulating social processes and procedures. In addition, the second component of this course consist of Application of concepts and perspectives learnt in first component. Furthermore, students would be required to engage in a community-based project through an NGO.

Equivalent Course(s) None

Course Name	Introduction to Social Sciences	Credit Hours	3 (3,0)
Course Code	SS 1201	Prerequisite(s)	None

Course Description This course covers the fundamental concepts of social science, definition of social science, its scope and applicability and the various branches of social sciences.

Equivalent Course(s) None

Course Name	Psychology	Credit Hours	3 (3,0)
Course Code	SS 2306	Prerequisite(s)	None

Course Description This course covers themes such as introduction to psychology, methods of psychology, biological basis of behavior, sensation, perception, attention, memory, emotions, learning, thinking and individual differences.

Equivalent Course(s) BA 2312, BIO 2306, MD 2424, BA 2306, AF 2303

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	SS 1205	Prerequisite(s)	SS 1105

Course Description	This course introduces students to key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth and development.
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Equivalent Course(s)	BA 5402, BA 1202, BST 1204, AF 3505
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Course Name	Sociology	Credit Hours	3 (3,0)
Course Code	SS 2307	Prerequisite(s)	None

Course Description	The course covers an overview of sociology. Topics include introduction to sociology, basic concepts of sociology, social groups, culture, Socialization and personality, social control and collective behavior.
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Equivalent Course(s)	BA 2307, BA 2306, MD 1104, AF 2304
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Course Name	Introduction to Political Science	Credit Hours	3 (3,0)
Course Code	SS 1155	Prerequisite(s)	None

Course Description	This course provides students introduction to major concept of political systems including system of governance, nature of political and social fabrics. Also, constitutions and rule of business for the success of political system will be taught to students. In addition, different political ideologies and political systems will be part of this course.
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Equivalent Course(s)	None
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Course Name	International Relations	Credit Hours	3 (3,0)
Course Code	SS 2412	Prerequisite(s)	None

Course Description	The course introduces students to key issues, questions, and theories about international relations in historical context. Course covers world politics since the First World War, and the lessons learnt by the academic, political, and military elites in the context of international relations since that time. The themes include power politics, liberal internationalism, statecraft, diplomacy, international political economy, international law, international organizations, foreign policy making and policy analysis, security and defense, hegemony and empire, globalization and civil society, and the future of the state.
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Equivalent Course(s)	None
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3.11 Bachelor of Science in Social Sciences (BSSS)

Course Name	Sindh Studies	Credit Hours	3 (3,0)
Course Code	SS 4705	Prerequisite(s)	None

Course Description

In this course students explore the civilizations of the Indus Valley from a geographic, historical, anthropological, and archaeological perspective. They study modern Sindh from the viewpoint of several disciplines, as for example, culture, literature, ethnomusicology etc. The course gives students the foundation to understand Sindh in interdisciplinary paradigms and prepares them for further aspects of area studies in Sindh. One underlying aim of Sindh Studies is to encourage students to think critically about societal development and interethnic harmony in Sindh.

Equivalent Course(s)

None

Course Name	Study of Anthropology	Credit Hours	3 (3,0)
Course Code	SS 2314	Prerequisite(s)	None

Course Description

This course introduces the discipline of Anthropology and its four major fields. It shall be discussed what is the Anthropological understanding of human associations and groups (families, marriages, ethnic and racial groups), and of systems humans have evolved to order their social lives (political, and economic systems).

Equivalent Course(s)

None

Course Name	English-II: English for Academic Purposes (EAP)	Credit Hours	3 (3,0)
Course Code	SS 2316	Prerequisite(s)	SS 1116

Course Description

This course is designed to improve academic English language and study skills of students. The course follows a multidimensional approach based on the four language skills with a specific focus on reading and writing skills that are required in research-based study at university level. The course includes listening and note taking skills, library and internet use for locating and evaluating research articles. In addition, the course seeks to enable the students to of speed read, skim, scan and infer from written text. The course specifically focuses on enabling the students to experiment with complex grammatical forms, sentence structures and logical paragraph development, to present coherent, cohesive and effective arguments clearly in research-based writing according to the requirements of their specific discipline.

Equivalent Course(s)

MD 1222, ME 1205, CSC 1102, BIO 1211

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Introduction to Social Psychology	Credit Hours	3 (3,0)
Course Code	SS 2313	Prerequisite(s)	SS 2306

Course Description	This course provides an understanding on how human behavior, feelings and thoughts are affected by social factors of environment and vice versa. Topics include group behavior, social perception, nonverbal behaviors, self-concept, cognitive dissonance, attitudes, conformity, aggression and prejudices.
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Equivalent Course(s)	None
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Course Name	Mathematics and Statistics	Credit Hours	3 (3,0)
Course Code	SS 2318	Prerequisite(s)	None

Course Description	This course introduces basic statistical concepts and techniques. Topics include; sampling and experimentation, descriptive statistics, probability, binomial and normal distributions, estimation, single sample and two sample hypothesis tests for means and proportions. Mathematical methods consists of; matrices, system of linear equations, differentiation and optimization, linear programming, and simplex method. Additional topics cover descriptive methods in regression and correlation, or contingency table analysis.
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Equivalent Course(s)	BA 5305, BA 2305, BIO 1208, BA 2311, BST 1206, AF 2406
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Course Name	Philosophy	Credit Hours	3 (3,0)
Course Code	SS 2413	Prerequisite(s)	None

Course Description	This course is both an introduction to philosophy and to careful thought, analysis, and argumentation. The course focuses on a general introduction to philosophy, Greek philosophy, medieval era, development of Muslims, Al-Farabi, Al Ghazali, Ibn-e-Rushd, and mystical tradition in Muslim thought, Renaissance, the Enlightenment (Rousseau, Voltaire), German Idealism, modern social philosophers, and contemporary social philosophers.
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Equivalent Course(s)	None
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3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Gender Studies	Credit Hours	3 (3,0)
Course Code	SS 2406	Prerequisite(s)	None

Course Description This course covers basic concepts, approaches and debates in gender studies. The course introduces gender terms and concepts, the concept of gender division of labour, gender mainstreaming, the effects of development process on women and men and various approaches to gender and development, gender equality and the Millennium Development Goals, definition and explanation of feminism and feminist theory, history of the feminist movements around the world, conceptual development of Muslim feminism and its social, political, economic and legal impact on Muslim countries.

Equivalent Course(s) None

Course Name	Statistical Inferences	Credit Hours	3 (3,0)
Course Code	SS 2418	Prerequisite(s)	SS 2318

Course Description This course covers; sets and probability, concept of random variable, possibilities, theory, estimation theory, testing hypothesis, one sample tests, two sample tests, regression and correlation, analysis of variance, Chi-square distribution, F-distribution, and computer applications.

Equivalent Course(s) BA 3605, BA 5405, AF 3506, BST 2306

Course Name	Introduction to Organizational Psychology	Credit Hours	3 (3,0)
Course Code	SS 2414	Prerequisite(s)	SS 2306

Course Description It is the study of organization, workplace and its employees and how work can be done to enhance the performance and satisfaction of its people. The course discusses hiring and management, job attitudes, leadership, workplace ethics, team composition, job designs, organizational development and human resources.

Equivalent Course(s) BA 3504, BA 5207, AF 2305, EN 2306

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Environmental Studies	Credit Hours	3 (3,0)
Course Code	SS 2411	Prerequisite(s)	None

Course Description This introductory course provides an overview of environmental issues, policy and politics, impact of human activities on natural environment and basic economic and political factors generating environmental crisis. The course covers introduction to environmental issues, foundations of environmental policy and politics, international environmental law and policy, natural resources policy practicum and environmental diplomacy practicum, water resource management, land planning and impact of urban land use planning and transportation on environment, strategies for land conservation, and understanding environmental campaigns, strategies and tactics.

Equivalent Course(s) None

Course Name	Social Policy	Credit Hours	3 (3,0)
Course Code	SS 1209	Prerequisite(s)	SS 2307

Course Description The course discusses concepts and paradigms of social policy, social policy issues, such as, education, housing, health, corporate social responsibility (CSR), and social service delivery.

Equivalent Course(s) None

Course Name	Culture, Art and Society	Credit Hours	3 (3,0)
Course Code	SS 2312	Prerequisite(s)	None

Course Description In addition to the stylistic and structural components of art, this course includes the historical, social, religious, political, technological, and philosophical issues related to the production and development of art, along with basic understanding of culture and society, globalization of art and culture, media and development of popular culture, alternative cultures subcultures, and public relations.

Equivalent Course(s) None

Course Name	Language-I	Credit Hours	3 (3,0)
Course Code	SS 3509	Prerequisite(s)	None

Course Description This course focuses on the practical and the day-to-day use of the target language in relation to everyday life in the target culture, the communicative approach working mainly through video documents offers role-plays, group discussions, listening comprehension exercises as well as written comprehension, and essay-writing.

Equivalent Course(s) None

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Political Economy	Credit Hours	3 (3.0)
Course Code	SS 3606	Prerequisite(s)	None

Course Description This course adapts an interdisciplinary approach ranging from political science, economics, history, and sociology in order to offer a broad introduction to current issues in political economy. Topics include mercantilism and liberalism, structuralism, the post-structuralism, Marxian definition of capitalism, difference between capitalist class processes (the basis for capitalism) from non-capitalist (slave, feudal, ancient, communal) class processes, international trade, money and debt, global security, knowledge and power, economic integration, development and multinational corporations, food, hunger, and environment.

Equivalent Course(s) None

Course Name	Research Methods	Credit Hours	3 (3.0)
Course Code	SS 3504	Prerequisite(s)	None

Course Description This course introduces students to the quantitative/qualitative research methods, social research, steps involved in conducting research, sampling, and data collection tools, data collection and processing, data management, data analysis and techniques, and SPSS (Statistical Product and Service Solutions).

Equivalent Course(s) BA 3603, BA 5206, AF 3609, BST 2301

Course Name	International Law and Human Rights	Credit Hours	3 (3.0)
Course Code	SS 3605	Prerequisite(s)	None

Course Description This course covers origins, content, applications, and ongoing development of human rights principles and doctrines in both international and national politics. Furthermore, this course discusses the historical development of human rights principles and doctrines, including the religious and philosophical ideas that have contributed to their development, the reasons for shifting from moral movements for human rights and national human rights doctrines to the codification of international human rights law. Also, it explains the work of governments, multilateral, and international and local non-governmental organizations in the enforcement of human rights laws, major debates in the field of human rights, including debates over the limits of sovereignty, universality versus relativism, individual versus group rights, and first, second, and third generation rights.

Equivalent Course(s) None

3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Language-II	Credit Hours	3 (3,0)
Course Code	SS 3609	Prerequisite(s)	SS 3509

Course Description	Language-II is the continuation of Language-I to equip students with advanced skills and knowledge to comprehend, speak, read and write competently in real-life situations. Topics include principal of language grammar, elementary communication, language for reading knowledge, and conversation and composition.
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Equivalent Course(s)	None
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Course Name	Development Studies	Credit Hours	3 (3,0)
Course Code	SS 3503	Prerequisite(s)	None

Course Description	The course explores the complex and multidimensional nature of development. It covers a broad overview of the development studies, poverty, gender, culture, globalization, empowerment, population, environment and livelihood.
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Equivalent Course(s)	None
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Course Name	Introduction to Health Psychology	Credit Hours	3 (3,0)
Course Code	SS 4707	Prerequisite(s)	SS 2306

Course Description	This course helps in identifying behaviors and experiences that promote health, give rise to illness, and influence the effectiveness of health care. Topics include occupational health and public health.
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Equivalent Course(s)	None
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Course Name	Research Project-I	Credit Hours	3 (3,0)
Course Code	SS 4709	Prerequisite(s)	SS 3504, SS 2318, SS 2418

Course Description	This course covers research methods application to research report, and research proposal writing, applying a systematic approach to solve problems, analyze, evaluate, and apply relevant information from a variety of sources, and writing accurately, concisely, and logically in American Psychological Association (APA) or Harvard styles.
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Equivalent Course(s)	None
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3.1.1 Bachelor of Science in Social Sciences (BSSS)

Course Name	Public Policy	Credit Hours	3 (3,0)
Course Code	SS 4804	Prerequisite(s)	SS 1209

Course Description This course explores both the theoretical and practical aspects of performing policy analysis. The themes of the course include current policy issues from the perspectives of local, state, and federal governments, non-governmental and advocacy organizations, needs and demands for public action, organization and nature of political support, and processes and problems of decision making in major policy areas.

Equivalent Course(s) None

Course Name	Research Project-II	Credit Hours	3 (3,0)
Course Code	SS 4809	Prerequisite(s)	SS 4709

Course Description This course covers research methods application to research report, and research proposal writing, applying a systematic approach to solve problems, analyze, evaluate, and apply relevant information from a variety of sources, and writing accurately, concisely, and logically in American Psychological Association (APA) or Harvard styles.

Equivalent Course(s) None

Course Name	Enlightenment	Credit Hours	3 (3,0)
Course Code	SS 2405	Prerequisite(s)	SS 2413

Course Description The course discusses classic Enlightenment texts and writers such as Smith, Diderot, Millar, Schiller, Hume, Kant, and Rousseau. This course explores the ways that contemporary thinkers like Derrida, Foucault, Habermas, Adorno, Lyotard and Luhman have absorbed, engaged and either rejected the Enlightenment completely or attempted to resurrect its more positive and hopeful aspects.

Equivalent Course(s) None

3.2 Master of Science and PhD

3.2.1 Master of Science in Social Sciences (MSSS)

Students enrolled in the Master of Science in Social Sciences (MSSS) program are required to complete 30 credit hours within five (5) years. The break-up of 30 credit hour courses is as follows:

- 2 Compulsory Courses (6 Credit Hours)
- 4 Electives Courses²¹ (12 Credit Hours)
- 2 Independent Research Studies (IRS) (6 Credit Hours)
- 1 Thesis/2 additional electives instead of thesis (6 Credit Hours)

Course Code	Course Title	Page #
MSSS		
First Year		
Fall Semester		
SS 5229	Advance Research Methods and Techniques (ARMT)-I (Qualitative)	142
SS 5122	Advance Research Methods and Techniques (ARMT)-II (Quantitative)	142
SS 5xxx	Elective-I	258 & 259
SS 5xxx	Elective-II	258 & 259
Spring Semester		
SS 5108	Independent Research Study-I	-
SS 5xxx	Elective-III	258 & 259
SS 5xxx	Elective-IV	258 & 259
Summer Semester		
SS 5208	Independent Research Study-II	-
Second Year		
Fall Semester		
SS 5109	Thesis/2 additional elective courses instead of Thesis	258 & 259

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

3.2.1 Bachelor of Science in Social Sciences (MSSS)

Course Name	Advance Research Methods and Techniques-I (Qualitative)	Credit Hours	3 (3,0)
Course Code	SS 5229	Prerequisite(s)	None
Course Description	This course develops critical and practical understandings for evaluating and conducting research from five qualitative research traditions (narrative research, grounded theory, phenomenology, ethnography and case studies). It develops an ethically and procedurally sound qualitative research proposal for qualitative research designs; collect, analyze and interpret qualitative, textual, and other non-traditional forms of data obtained through various tools and sources.		
Equivalent Course(s)	SS 6313, ELM 5102, ELM 6101		

Course Name	Advance Research Methods and Techniques-II (Quantitative)	Credit Hours	3 (3,0)
Course Code	SS 5122	Prerequisite(s)	None
Course Description	In this course, concepts, techniques and applications of quantitative methods for decision making are introduced. Topics include: forecasting, regression analysis, analysis of variance, statistical decision theory, utility theory, linear programming, and waiting lines. The course incorporates computer software packages.		
Equivalent Course(s)	SS 6105, ELM 5102, ELM 6102		

3.2 Master of Science and PhD

3.2.2 Doctor of Philosophy in Social Sciences (PhD SS)

Students enrolled in the Doctor of Philosophy in Social Sciences (PhD SS) Program with a MS /M.Phil (with minimum 5 years of formal university education) are required to complete a total of 48 credit hours within five (5) years. The following is the break-up of the 48 credit hour courses:

- 2 Compulsory Courses (6 Credit Hours)
- 2 Electives Courses²² (6 Credit Hours)
- 2 Independent Research Studies (6 Credit Hours)
- 1 Dissertation (30 Credit Hours)

Course Code	Course Title	Page #
PhD		
First Year		
Fall Semester		
SS 6313	Advance Research Methods and Techniques-I (Qualitative)	144
SS 6105	Advance Research Methods and Techniques-II (Quantitative)	144
SS 5xxx	Elective-I	259 & 260
Spring Semester		
SS 6108	Independent Research Study-I	-
SS 6208	Independent Research Study-II	-
SS 5xxx	Elective II	259 & 260
Second Year		
Fall Semester		
MS 6x09	Dissertation	-
Spring Semester		
MS 6x09	Dissertation	-

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

3.2.2 Doctor of Philosophy in Social Sciences (PhD SS)

Course Name	Advance Research Methods and Techniques-I (Qualitative)	Credit Hours	3 (3,0)
Course Code	SS 6313	Prerequisite(s)	None
Course Description	This course develops critical and practical understandings for evaluating and conducting research from five qualitative research traditions (narrative research, grounded theory, phenomenology, ethnography and case studies). Develops an ethically and procedurally sound qualitative research proposal for qualitative research designs; collect, analyze and interpret qualitative, textual, and other non-traditional forms of data obtained through various tools and sources.		
Equivalent Course(s)	SS 5229, ELM 5102, ELM 6101		

Course Name	Advance Research Methods and Techniques-II (Quantitative)	Credit Hours	3 (3,0)
Course Code	SS 6105	Prerequisite(s)	None
Course Description	In this course, concepts, techniques and applications of quantitative methods for decision making are introduced. Topics include; forecasting, regression analysis, analysis of variance, statistical decision theory, utility theory, linear programming, and waiting lines. The course incorporates computer software packages.		
Equivalent Course(s)	SS 5122, ELM 5103, ELM 6102		



Department of Media Sciences

4.1 Bachelor of Science

4.1.1 Bachelor of Media Science (BMS)

Students enrolled in the Bachelor of Media Science (BMS) program are required to complete 43 courses and a thesis within seven (7) years. The break-up of the 43 courses, including thesis is as follows:

- 33 Compulsory Courses (99 Credit Hours)
- 7 Major Requirements²³ (21 Credit Hours)
- 3 Open Electives²³ (9 Credit Hours)
- 1 Thesis²⁵ (6 Credit Hours)

Course Code	Course Title	Page #
Year		
Fall Semester		
MD 1122	English for General Purposes (EGP)	148
MD 1107	Drawing and Perspective	148
MD 1115	Introduction to Media Industries	148
MD 1116	Civilization Studies-I	149
MD 2402	Islamiat and Pakistan Studies/Humanities	149
MD 3601	Art of Music	149
Spring Semester		
MD 1222	English for Academic Purposes (EAP)	150
MD 1104	Culture, Media, and Society	150
MD 1106	Photography	150
MD 1119	Play Analysis	151
MD 1216	Civilization Studies-II	151
MD 2323	Production Practices-I	151
Second Year		
Fall Semester		
MD 1211	Basic Design	151
MD 1217	Introduction to Sound	152
MD 2321	History and Aesthetics of Film	152
MD 2325	Media Research	152
MD 2313	Idea Development	153
MD 2423	Theater Project	153
Spring Semester		
MD 1118	Topics in Asian Literature	153
MD 2318	History of Commercial Art	154
MD 2425	Audiovisual Editing	154
MD 2427	Design Practices-I	154
MD 3523	Production Practices-II	155
MD 3505	Principles of Journalism	155

23- List of Major Courses is given in Appendix C.

24- List of Electives is given in Appendix B.

25- Guidelines for completion of Thesis are given in Appendix D.

4.1.1 Bachelor of Media Science (BMS)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
MD 1213	Creative Writing	155
MD 2424	Media Psychology	155
MD 3518	Animation and Motion Graphics	156
MD 3527	Design Practices-II	156
MD 3511	Radio Channel Project-I	156
MD 4714	Producing Short Narratives	156
Spring Semester		
MD 2405	Media Laws and Ethics	157
MD 4xxx	Major-I	270
MD 4xxx	Major-II	270
MD 4xxx	Major-III	270
MD 4xxx	Major-IV	270
MD 4xxx	Elective-I	261
Fourth Year		
Fall Semester		
MD 4701	State and Nation Building in Pakistan	157
MD 4xxx	Major-V	270
MD 4xxx	Major-VI	270
MD 4xxx	Major-VII	270
MD 4xxx	Elective-II	261
Spring Semester		
MD 3506	Theories of Visual Culture	158
MD 4807	Thesis-I	158
MD 4xxx	Elective-III	261
Summer Semester		
MD 4808	Thesis-II	158

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

4.1.1 Bachelor of Media Science (BMS)

Course Name	English for General Purposes (EGP)	Credit Hours	3 (3,0)
Course Code	MD 1122	Prerequisite(s)	None

Course Description

The course is aimed at improving English language communication and presentation skills of students. With a multidimensional approach, the course enables the students to practice the use of English in everyday situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to participate in seminars and discussions and make effective presentations, with an awareness of the audience and effective use of verbal and non-verbal communication. The course addresses the basic English language issues faced by the learners, while also aiming to foster in them, critical skills to develop a concise and clear argument, respond to others' comments and negotiate their own point of view persuasively. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in everyday communication in formal and informal contexts.

Equivalent Course(s)

CSC 1102, BA 1105, SS 1116, BIO 1103, ME 1101, AF 1203, EN 1106, BST 1103

Course Name	Drawing and Perspective	Credit Hours	3 (3,0)
Course Code	MD 1107	Prerequisite(s)	None

Course Description

This course introduces students to visual reading and thinking skills through the practice of elementary drawing techniques. The topics include linear and aerial perspective, composition, shape, space, volume, and proportion, depth and distance, horizons and vanishing-points, the use and manipulation of shadow and light, stippling and cross-hatching; primary, secondary, and complementary colors, rendering mood, expression, and motion.

Equivalent Course(s)

None

Course Name	Introduction to Media Industries	Credit Hours	3 (3,0)
Course Code	MD 1115	Prerequisite(s)	None

Course Description

This course introduces students to the history, development, and impact of mass media nationally and internationally, with a focus on the different media outlets and industry/business models. It covers history of print and broadcast journalism, print, broadcast, and digital formats, fringe, mainstream, regional, national and international media structures, formats and business models. Also, functions and evolution of journalism, film, TV, print media, advertising, and digital technologies, and introduction to media convergence environment.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Civilization Studies-I	Credit Hours	3 (3,0)
Course Code	MD 1116	Prerequisite(s)	None

Course Description

This course investigates major historical civilizations in Ancient Egypt, China, and India; classical Greece and Rome; and medieval and renaissance Europe. It also covers oral cultures and oral transmission, the invention of writing, the production and preservation of cultural and social artifacts and texts, the emergence, development, dissemination, and cross-cultural influences of aesthetic practices. Topics include comparative analysis of Asian, Greco-Roman, Chinese and Medieval traditions from Pyramids to Pre-Socratics and from Ancient Chinese thought to Early Cathedrals and from Bronze revolution in Central Asia to Iron revolution in India to the discovery of Laws of Reflecton by Alhazen. The course places a fundamental emphasis on the history of ideas, cultural expressions, and social institutions. The course will stop at the discussions of the emergence of Gothic Cathedrals in France.

Equivalent Course(s)

None

Course Name	Islamiat and Pakistan Studies/Humanities	Credit Hours	3 (3,0)
Course Code	MD 2402	Prerequisite(s)	None

Course Description

The course focuses on the history, theory, and practice of Islam and other religions, and their social, political, and cultural importance and impact in Pakistan and beyond. It covers History of religion, religious practice and thought, major interpretive traditions, religion and society, religion and politics, mysticism and orthodoxy, Comparative religion, religion and gender, Islam and other Abrahamic religions, Islam and modernity.

Equivalent Course(s)

SS 1109, CSC 1105, BA 1106, BIO 1212, EN 1105

Course Name	Art of Music	Credit Hours	3 (3,0)
Course Code	MD 3601	Prerequisite(s)	None

Course Description

This course focuses upon the evolution and development of sound and music. It covers global and local genres and styles (western art music, jazz, Indian classical, qawwali, hip-hop, rock, punk, etc.), the history and evolution of instruments and instrumentation, electronic and digital music technologies, performance modes, forms, and venues, music's influence in the media and on popular culture, and music's relationship with the visual and performing arts.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	English for Academic Purposes (EAP)	Credit Hours	3 (3,0)
Course Code	MD 1222	Prerequisite(s)	MD 1122

Course Description

This course is designed to improve academic English language and study skills of students. The course follows a multidimensional approach based on the four language skills with a specific focus on reading and writing skills that are required in research-based study at university level. The course includes listening and note taking skills, library and internet use for locating and evaluating research articles. In addition, the course seeks to enable the students to of speed read, skim, scan and infer from written text. The course specifically focuses on enabling the students to experiment with complex grammatical forms, sentence structures and logical paragraph development, to present coherent, cohesive and effective arguments clearly in research-based writing according to the requirements of their specific discipline.

Equivalent Course(s)

ME 1205, SS 2316, BIO 1211, BA 1206, CSC 2101, AF 1203, EN 1106

Course Name	Culture, Media and Society	Credit Hours	3 (3,0)
Course Code	MD 1104	Prerequisite(s)	MD 1115, MD 1122

Course Description

This course covers the basic theoretical concepts and debates focused on the relations among media, cultural texts, and the communities within which these are produced and disseminated. The topics include Theories of media and popular culture – Marxism, structuralism, post-structuralism, modernity, and post-modernism. Subcultures and youth cultures. The role of media in culture and society, the politics of identity (race, gender, ethnicity, religion, sexuality, class, and nationality), the emergence and effect of cyber culture, globalization and multiculturalism.

Equivalent Course(s)

SS 2312

Course Name	Photography	Credit Hours	3 (3,0)
Course Code	MD1106	Prerequisite(s)	MD 1107

Course Description

This course introduces students to the history, science, and art of photography. It covers cameras, their construction and use, use of digital versus film as a medium, set-up, focus, framing, composition, indoor versus outdoor photography (studio versus landscape), lenses, apertures, lighting, film and shutter speed, exposure, and depth of field, panning, zooming, and light-painting, black-and-white versus color, basic Photoshop editing and manipulating, narrative photography, developing and printing, and portfolio presentation.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Play Analysis	Credit Hours	3 (3,0)
Course Code	MD 1119	Prerequisite(s)	MD 1122

Course Description

The focus of this course is upon a variety of techniques and strategies through which theatrical texts are analyzed and understood. It discusses plot and scene structures, character construction, the use and effect of language, syntax, rhythm, tone, sound, gesture, movement, design, and spatial composition, the origins and development of performance conventions, the relationship between audiences and performances, the interplay between performed events, and cultural and social formations.

Equivalent Course(s)

None

Course Name	Civilization Studies-II	Credit Hours	3 (3,0)
Course Code	MD 1216	Prerequisite(s)	MD 1116

Course Description

This course will start from the emergence of Gothic Cathedral and will offer an introduction to the aesthetic and contextual study of different movements from renaissance to the present. The course will investigate how one art movement triggered the other and how to discover connections among the art movements of different times. The course also discusses societies, cultures, and art of major Islamic civilizations through history.

Equivalent Course(s)

None

Course Name	Production Practices-I	Credit Hours	3 (3,0)
Course Code	MD 2323	Prerequisite(s)	MD 1107

Course Description

This course introduces students to the basic craft of film and video production. Students will practice how to conceive, shoot, edit, and show a silent, low-budget, and simple narrative film. The topics include the technology of motion pictures, HD cameras, flip-books, stop-motion animation, frames, storyboarding, basic camera set-ups, basic lighting, framing, focus and lenses, panning, basic editing, creating rough-cuts, the role of the DP, production processes, and film screenings.

Equivalent Course(s)

None

Course Name	Basic Design	Credit Hours	3 (3,0)
Course Code	MD 1211	Prerequisite(s)	MD 1107

Course Description

This course introduces students to fundamental elements and principles of design. It covers grids, hierarchies, scale, point, line, texture, color, value, proportion, space, and plane, figure-ground, color theory; form and composition, issues of balance, emphasis, position, unity, pattern, harmony, contrast, rhythm, repetition, and movement, and the anatomy of fonts and types.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Introduction to Sound	Credit Hours	3 (3,0)
Course Code	MD 1217	Prerequisite(s)	MD 3601

Course Description	This course introduces students to; the properties and uses of sound in media texts, evolving technologies, and techniques employed to create sound recordings. It covers basic sound recording and editing (looping, sampling, sequencing, mixing, and mastering), introduction to Presonus Studio 1, volume envelopes, voice-over editing, dynamics processing, sound design, and film scoring.
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Equivalent Course(s)	None
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Course Name	History and Aesthetics of Film	Credit Hours	3 (3,0)
Course Code	MD 2321	Prerequisite(s)	MD 2323

Course Description	This course covers the history and aesthetics of world cinema from its origins to the present, emphasizing major directors, historically and critically important movements and films, the emergence and development of film genres, and the aesthetic effects of technological innovations. The topics include Origins (Edison, Melies and Griffith), German Expressionism (Wieneand Lang), Soviet montage (Eisenstein), American and Indian Silent Films (Chaplin, Keaton, and Wadia Movietone), Impressionism and Surrealism (Bunuel and Renoir), national cinemas (Italy, Japan, France, Eastern Europe, and India), American Melodrama (Sirk and Minnelli), film genres, the studio system, auteur directors, technological developments and apparatus theory, and experimental film.
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Equivalent Course(s)	None
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Course Name	Media Research	Credit Hours	3 (3,0)
Course Code	MD 2325	Prerequisite(s)	MD 1104, MD 1222

Course Description	This course teaches the quantitative and qualitative methods for media research. It covers designing research question, reviewing the literature, writing proposal, researching industry, researching text, researching audiences, research tools – questionnaire, focus group interviews, ethnography, phenomenology, hermeneutics, etc.
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Equivalent Course(s)	None
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4.1.1 Bachelor of Media Science (BMS)

Course Name	Idea Development	Credit Hours	3 (3,0)
Course Code	MD 2313	Prerequisite(s)	MD 1107

Course Description

This course introduces students to strategies that will help them generate narrative ideas applicable to advertising, journalism, and film and video production. It covers theories and structures of narrative, elements of storytelling, the psychology of narrative, effective brainstorming, visual versus print narratives, finding images, idioms, analogies, and metaphors, parables and allegories, causality, probability, and necessity, simple and complex plots, inventing and developing characters, establishing place, conceiving, and shaping stories visually.

Equivalent Course(s)

None

Course Name	Theater Project	Credit Hours	3 (3,0)
Course Code	MD 2423	Prerequisite(s)	MD 1119

Course Description

This course discusses the techniques of theater and documentary production using a form developed in the US through the auspices of the Federal Theatre Project, and to create an original Living Newspaper performance. It covers history and practice of documentary theater and performance, the Living Newspaper and the Federal Theater Project, selecting and researching newsworthy topics, conducting archival research, conducting field interviews, improvisation and script development, staging and design, and rehearsals and performance.

Equivalent Course(s)

None

Course Name	Topics in Asian Literature	Credit Hours	3 (3,0)
Course Code	MD 1118	Prerequisite(s)	MD 1222

Course Description

This course introduces students to a range of literatures produced in Asia fiction, poetry, and drama. It covers a range of themes and styles employed by Asian writers, examines how these writers appropriated and renewed older narrative forms and conventions, and consider how and why this body of work both responds to/and reconstructs Asian constructs of nation, society, community, and identity.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	History of Commercial Art	Credit Hours	3 (3,0)
Course Code	MD 2318	Prerequisite(s)	MD 1107, MD 1211

Course Description This course introduces students to the history of commercial art from lithography to logos, book design to branding, stencils to motion graphics, and covering the origins and history of advertising and design. The topics include defining commercial art, origins and history of commercial art and design, inventing alphabets, illuminated manuscripts, the psychology of branding, graphic design versus advertising design, impact of new technologies from the printing press to computers, and the past, present, and the future of commercial design.

Equivalent Course(s) None

Course Name	Audiovisual Editing	Credit Hours	3 (3,0)
Course Code	MD 2425	Prerequisite(s)	MD 2323, MD 1217

Course Description This course discusses the aesthetics and techniques of sound and video editing. The topics include perspective, transitions, and pace, cutting, splicing, fading, dissolving, and wiping, controlling and manipulating content and audience response, continuity editing, frame rates and temporal compression, visual effects, axis of action, jump-cuts, eye-lines and match-cuts, incorporating sound, ambient and Foley sound effects, and musical scoring.

Equivalent Course(s) None

Course Name	Design Practices-I	Credit Hours	3 (3,0)
Course Code	MD 2427	Prerequisite(s)	MD 1211

Course Description This course covers the theory and practice of design to inculcate logical methods of reasoning through design problems, and to polish aesthetic sensibilities. The course introduces students to all the important software such as InDesign, Illustrator, Photoshop, CorelDraw, Freehand, etc. Topics may include package design, basic typography (Urdu and English), signs, symbols, logos and identities, illustration, photography, 2-D versus 3-D design, visual problem-solving, symmetry and asymmetry, rhythm and balance, hierarchies, layers, transparencies, and visual thinking.

Equivalent Course(s) None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Production Practices-II	Credit Hours	3 (3,0)
Course Code	MD 3523	Prerequisite(s)	MD 1217, MD 2313 MD 2323

Course Description

This course develops and extends the theories and techniques introduced in Production Practices-I. Production Practices II introduces students to use elements of sound and dialogue with visuals in narrative films. It covers advanced single-camera techniques, using camera angles, jibs, cranes, tracks, and dollies; manipulating color and light, lenses and looks, digital speed, color temperatures, filters, and gels, visual storytelling, 3-act structures, production design, advanced sound editing, advanced digital editing, and linear and non-linear pre and post production strategies.

Equivalent Course(s)

None

Course Name	Principles of Journalism	Credit Hours	3 (3,0)
Course Code	MD 3505	Prerequisite(s)	MD 1122

Course Description

This course introduces students to basic news, feature, and editorial writing, and reporting. It covers lead writing, story-structure, interviewing, note-taking, background research, issue analysis, feature development, editorials, editing, journalistic ethics, print versus digital, and evidence and inference.

Equivalent Course(s)

None

Course Name	Creative Writing	Credit Hours	3 (3,0)
Course Code	MD 1213	Prerequisite(s)	MD 1122, MD 1118

Course Description

This course introduces students to various forms and techniques of creative writing in both English and Urdu. The topics include understanding and analyzing creative texts, writing prose fiction and non-fiction, understanding and writing poetry, and creative expression in different genres and language styles.

Equivalent Course(s)

None

Course Name	Media Psychology	Credit Hours	3 (3,0)
Course Code	MD 2424	Prerequisite(s)	MD 1104, MD 1222

Course Description

This course introduces students to the basic principles of human behavior, with a focus on how different media shape and affect who we are and how we think. It covers formation of personality types, the structures of learning, the development and manifestation of phobias and neuroses, the functions of memory, perception, emotion, and the effect of media images on self-perception.

Equivalent Course(s)

None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Animation and Motion Graphics	Credit Hours	3 (3,0)
Course Code	MD 3518	Prerequisite(s)	MD 2425, MD 2427

Course Description This course discusses the principles of motion graphic design, and to teach them how to create complex, multi-layered animations. It also covers after effects (AE) basics; interface and palettes, vector art versus bitmap art, anchor points, typography in AE, track mattes, layers, framing, basic animation, and rotoscoping, motion masks, composing and nesting, using green screens, color keying and compositing, expressions in AE; scripting, time remapping, and temporal processing.

Equivalent Course(s) None

Course Name	Design Practices-II	Credit Hours	3 (3,0)
Course Code	MD 3527	Prerequisite(s)	MD 2427

Course Description This course extends and develops theories and practices introduced in Graphic Design-I. It discusses contemporary trends and styles, advanced layout strategies, merging text and art, sustainable design, propaganda design, the psychological impact of design, advanced typography (Urdu and English), publication design, brochures, packaging, posters, cover art, advanced Photoshop techniques, and advanced Illustrator techniques.

Equivalent Course(s) None

Course Name	Radio Channel Project-I	Credit Hours	3 (3,0)
Course Code	MD 3511	Prerequisite(s)	MD 1217, MD 3601

Course Description This course aims to train students to apply in a practical setting the skills they've learned in their sound and music classes using SZABIST's on-campus radio station. It discusses digital audio recording, digital workstations, and introduction to Studio 1, editing techniques, and radio story production and programming.

Equivalent Course(s) None

Course Name	Producing Short Narratives	Credit Hours	3 (3,0)
Course Code	MD 4714	Prerequisite(s)	MD 3523

Course Description This course focuses on how to conceive, write, storyboard, film, edit, produce, and present a short project employing the skills they have learned in their production and design courses in the previous five semesters. It discusses conceiving and scripting, creating characters, design and art direction, light and shot referencing, creating storyboards and mood boards, music and sound selection and design, short narratives across cultures, music videos, and PSAs.

Equivalent Course(s) None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Media Laws and Ethics	Credit Hours	3 (3,0)
Course Code	MD 2405	Prerequisite(s)	MD 1115, MD 1222

Course Description This course introduces students to the way media policies are influenced and shaped by legal and ethical considerations. It covers basic ethical theories, defining media laws, free speech and human rights, press freedoms and democratic politics, slander, defamation and libel, morality, propriety and obscenity laws, private and public knowledge, objectivity and sensationalism, conflicts of interest and transparency, the use, abuse, and protection of sources, accuracy, liability and licensing, regulating advertising, copyright laws and fair-use, self-censorship and content regulation, federal, provincial, and local laws, Pakistan Electronic Media Regulatory Authority (PEMRA), new media technologies and the law, and contempt of court.

Equivalent Course(s) None

Course Name	State and Nation Building in Pakistan	Credit Hours	3 (3,0)
Course Code	MD 4701	Prerequisite(s)	MD 1216, MD 1222

Course Description The focus of this course is on both the idea and fact of Pakistan starting with the 1857 War of Independence, extending through Partition, the founding of the nation and its subsequent dismemberment, and ending with contemporary issues and challenges facing our future. The topics include theories of nationalism, Iqbal and Pakistan, partition and political relations with India, military versus civilian rule 1971 war and the break-up of Pakistan, 1973 Constitution, secularism and Islam, national symbols and national identity, the role of the media, foreign policy, and national identity.

Equivalent Course(s) None

Course Name	Theories of Visual Culture	Credit Hours	3 (3,0)
Course Code	MD 3506	Prerequisite(s)	MD 1104, MD 1222

Course Description This course introduces students to a range of theoretical approaches to defining, analyzing, and categorizing visual texts including, but not limited to, films, photographs, advertisements, television shows, sculpture, graffiti, architecture, paintings, performance, fashion, graphic and interior design. It covers theory versus praxis, defining the visual, the sociological processes of culture, the politics of visual culture, conspicuous consumption, Marxist, feminist, structuralism, and semiological approaches to visual culture, substance versus style, and McLuhan, media, and messages.

Equivalent Course(s) None

4.1.1 Bachelor of Media Science (BMS)

Course Name	Thesis-I	Credit Hours	3 (3,0)
Course Code	MD 4807	Prerequisite(s)	Dept. Permission (38 Courses)

Course Description

It is a two-semester project that allows advertising, journalism, and film students the opportunity to demonstrate to the Media Sciences faculty their proficiency in their chosen area of specialization. It covers proposal development and pre-production (Communication design and market research, component gathering, scriptwriting, campaign planning, storyboarding, production design, and story research).

Equivalent Course(s)

None

Course Name	Thesis-II	Credit Hours	3 (3,0)
Course Code	MD 4808	Prerequisite(s)	MD 4807

Course Description

The course is a culmination of thesis I. Students start their projects (films, documentaries, journalistic assignments, written work, advertising or design projects) and makes final presentations to demonstrate their proficiency in their chosen area of specialization.

Equivalent Course(s)

None

4.2 Masters

4.2.1 Master of Advertising (MoA)

Students enrolled in Master of Advertising program are required to complete 10 courses and a 6-credit hour research project within five (5) years. The breakup of the courses is as follows:

- 10 Compulsory Courses (30 Credit Hours)
- 1 Research Project (6 Credit Hours)

Master of Advertising (36 credit hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MD 5162	Advertising and Marketing Research	160
MD 5141	Idea Development	160
MD 5161	Integrated Marketing Communications	160
MD 5207	Media Evolution and Innovation	161
Spring Semester		
MD 5102	Media and Contemporary Culture	161
MD 5262	Brand Management	161
MD 5265	Digital Advertising	161
MD 5264	Copywriting and Advertising Conceptualization	162
Summer Semester		
MD 5351	Campaign Strategy	162
MD 5165	Digital Media Content	162
Second Year		
Fall Semester		
MD 5349	Research Project	162

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

4.1.1 Master of Advertising (MoA)

Course Name	Advertising and Marketing Research	Credit Hours	3 (3,0)
Course Code	MD 5162	Prerequisite(s)	None

Course Description This course teaches students how to conduct research that helps them understand how consumer behavior and advertisements work, and that maximizes the effective reach of advertising campaigns. It covers advanced quantitative vs. qualitative research strategies, collecting and interpreting data sets, customized vs. syndicated research, effective pre and post testing studies, flows of attention, emotion, and meaning, brand linkage and branding moments, ad tracking, longitudinal vs. latitudinal studies, selective perception, picture, and copy sorts.

Equivalent Course(s) BA 5221

Course Name	Idea Development	Credit Hours	3 (3,0)
Course Code	MD 5141	Prerequisite(s)	None

Course Description This course develops an understanding of students about strategies that help them generate narrative ideas applicable to advertising, journalism, and film and video production. The topics include theories and structures of narrative, elements of storytelling, the psychology of narrative, effective brainstorming, visual vs. print narratives, finding images, idioms, analogies, and metaphors, parables and allegories, causality, probability, and necessity, simple and complex plots, inventing and developing characters, establishing place, conceiving, and shaping stories visually.

Equivalent Course(s) None

Course Name	Integrated Marketing Communications	Credit Hours	3 (3,0)
Course Code	MD 5161	Prerequisite(s)	None

Course Description This course teaches students how Integrated Marketing Communication combines traditionally separate advertising, public relations, and marketing functions into a seamless program. It covers corporate image and brand management, consumer behavior, forging brand loyalty, situation analysis, marketing objectives, marketing budgets, media synergy, mass vs. niche audiences, 4 Ps vs. 4 Cs, elements of effective communication and promotion, creating opportunities, and product positioning.

Equivalent Course(s) BA 5121

4.1.1 Master of Advertising (MoA)

Course Name	Media Evolution and Innovation	Credit Hours	3 (3,0)
Course Code	MD 5207	Prerequisite(s)	None

Course Description This course analyzes the emergence, growth, and development of media practices and technologies, and to chart future possibilities. The topics include birth of media technologies, traditional media content, economic, social and cultural influences, traditional content and technologies, emergence, evolution, and institutionalization of telecommunications' technologies, synergy and integration, and ethical implications of developing technologies and future directions.

Equivalent Course(s) None

Course Name	Media and Contemporary Culture	Credit Hours	3 (3,0)
Course Code	MD 5102	Prerequisite(s)	None

Course Description This course introduces students to the theoretical foundations of contemporary cultural criticism, especially as this relates to aesthetic, social, and political practices across media. It also covers theories of language and representation, signification and textuality, narrative and image, fantasy and ideology, modernity and post modernity, and theories of Marx, Freud, Saussure, Horkheimer, Adorno, Barthes, Williams, Hall, Mulvey, Fiske, and Shohat.

Equivalent Course(s) None

Course Name	Brand Management	Credit Hours	3 (3,0)
Course Code	MD 5262	Prerequisite(s)	MD 5161

Course Description This course aims to teach students how advertising and management divisions within advertising agencies and client organizations cooperate to define and sustain a cogent brand identity. The topics include defining, developing and sustaining brands, the brand lifecycle, consumer aspiration function, the advertising spiral, brand planning, pioneering, competitive, and retentive stages, generational marketing, positioning, and client-agency relationships.

Equivalent Course(s) BA 5122

Course Name	Digital Advertising	Credit Hours	3 (3,0)
Course Code	MD 5265	Prerequisite(s)	MD 5161

Course Description This course teaches students the history, evolution, nature, and influence of new media technologies. The topics include Social networks (facebook, twitter, MySpace, Orchid, GoogleBuzz), viral campaigns, alternate reality gaming, virtual brand identities, banner advertising, crowd-sourcing, mobile advertising, instantaneous consumer feedback, interaction and web design, and interactive design physical computing

Equivalent Course(s) None

4.1.1 Master of Advertising (MoA)

Course Name	Copywriting and Advertising Conceptualization	Credit Hours	3 (3,0)
Course Code	MD 5264	Prerequisite(s)	MD 5141

Course Description	This course teaches students how to conceive, write and layout copy for print, internet, and television advertising. The topics include copy devices (clichés, action words, emotive words, alliteration, assonance, colloquialisms, repetition, widows, and orphans), copy elements (overlines, headlines, subheads, taglines, action calls), negative vs. positive copy, humor and risk, layout and balance, sensory appeal, copywriting brochures, billboards, and posters.
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Equivalent Course(s)	None
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Course Name	Campaign Strategy	Credit Hours	3 (3,0)
Course Code	MD 5351	Prerequisite(s)	MD 5161

Course Description	This course discusses how to analyze advertising research in order to arrive at a central concept or idea around which to build an advertising campaign. It also covers identifying communication objectives, data correlation and analysis, the 360 degree campaign, identifying common conceptual threads, using metaphor and displacement, budgeting, viral and buzz marketing, social media and new media advertising, consumer feedback, and campaign effectiveness.
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Equivalent Course(s)	None
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Course Name	Digital Media Content	Credit Hours	3 (3,0)
Course Code	MD 5165	Prerequisite(s)	MD 5265

Course Description	This course covers the various digital platforms that exist in today's interactive space including viral videos, podcasts, blogs, websites, social media sites and explores how brands can use these media to develop content that is interactive and engaging for customers. Functions and methods of SEO are also covered in this course.
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Equivalent Course(s)	None
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Course Name	Research Project	Credit Hours	6 (6,0)
Course Code	MD 5349	Prerequisite(s)	Dept. Permission

Course Description	Research Project provides students with an opportunity to conduct a sustained research and analysis focused on a subject of their choice.
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Equivalent Course(s)	None
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4.2 Masters

4.2.2 Master of Science in Media Studies (MS Media Studies)

Students enrolled in Master of Science in Media Studies (MS Media Studies) program are required to complete 30 credits within five (5) years. The breakup of the courses is as follows:

- 6 Compulsory Courses (18 Credit Hours)
- 2 Electives Courses²⁶ (6 Credit Hours)
- 2 Independent Research Studies (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MD 5102	Media and Contemporary Culture	164
MD 5104	Research Methodology	164
MD 5207	Media Evolution and Innovation	164
Spring Semester		
MD 5212	Theories of Visual Culture	165
MD 5112	Media and Post-Colonialism	165
MD 5201	Communication for Social Change	165
Second Year		
Fall Semester		
MD 5xxx	Elective-I	261
MD 5xxx	Elective-II	261
MD 5xxx	Independent Research Study-I	-
Spring Semester		
MD 5xxx	Independent Research Study-II	-

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

26- List of Electives is provided in Appendix B

4.1.1 Master of Science in Media Studies (MS Media Studies)

Course Name	Media and Contemporary Culture	Credit Hours	3 (3,0)
Course Code	MD 5102	Prerequisite(s)	None

Course Description This course discusses theoretical foundations of contemporary cultural criticism, especially as this relates to aesthetic, social and political practices across media. The topics include: Theories of media and popular culture-Marxism, structuralism, post-structuralism, modernity, and post-modernism. Also, subcultures and youth cultures, the role of media in culture and society, the politics of identity (race, gender, ethnicity, religion, sexuality, class, and nationality), the emergence and effect of cyber culture, globalization and multiculturalism.

Equivalent Course None

Course Name	Research Methodology	Credit Hours	3 (3,0)
Course Code	MD 5104	Prerequisite(s)	None

Course Description This course introduces students to both qualitative and quantitative methods of research and analysis. The topics include: designing research (choosing, narrowing, and shaping topics); articulating research questions and hypotheses; conducting literature reviews; quantitative methods (sampling, designing questionnaires, conducting interviews, selecting focus groups, analyzing data); qualitative methods (primary vs. secondary sources, adjudicating contradictory information, assessing bias); textual analysis; historical analysis; productions analysis; audience analysis, and writing research reports.

Equivalent Courses None

Course Name	Media Evolution and Innovation	Credit Hours	3 (3,0)
Course Code	MD 5207	Prerequisite(s)	None

Course Description This course aims at discussing the emergence, growth, and development of media practices and technologies, and to chart future possibilities. The topics include Birth of media technologies; traditional media content; economic, social and cultural influences; traditional content and technologies; emergence, evolution, and institutionalization of telecommunications technologies; synergy and integration; and ethical implications of developing technologies and future directions.

Equivalent Courses None

4.1.1 Master of Science in Media Studies (MS Media Studies)

Course Name	Theories of Visual Culture	Credit Hours	3 (3,0)
Course Code	MD 5212	Prerequisite(s)	MD 5102

Course Description

This course introduces students to a range of theoretical approaches in defining, analyzing, and categorizing visual texts including, but not limited to, films, photographs, advertisements, television shows, sculpture, graffiti, architecture, paintings, performance, fashion, graphic, and interior design. It covers topics such as theory vs. praxis; defining the visual; the sociological processes of culture; the politics of visual culture; conspicuous consumption; Marxism, Feminism, structuralism, and semiological approaches to visual culture substance vs. style.

Equivalent Courses

None

Course Name	Media and Post-Colonialism	Credit Hours	3 (3,0)
Course Code	MD 5112	Prerequisite(s)	MD 5102

Course Description

This course discusses theories and practices of media representation as these relate to the formation of post-colonial societies. It covers topics such as theories of post-colonialism; the politics of post-colonial representation; post-modernism and post-colonialism; nationalism, nation building, and identity; media and resistance; ethnicity, indigeneity, and hybridity; language and representation; empire and liberation; alternative media and representations of local.

Equivalent Courses

None

Course Name	Communication for Social Change	Credit Hours	3 (3,0)
Course Code	MD 5201	Prerequisite(s)	None

Course Description

This course teaches students how to develop, apply, and coordinate communication strategies that help facilitate interdisciplinary collaboration and social change. The topics include: Models of communication, information ecosystems, change theories, the impact of media concentration and interactions in the Triple Helix model i.e. Public, Private and Academia, conflict management and resolution, media activism, gender and its role in social change, and content diversity and its socio-economic and political impact.

Equivalent Courses

None



Department of
Mechatronics
Engineering

5.1 Bachelor of Engineering

5.1.1 Bachelor of Engineering in Mechatronics Engineering (BEME)

Students enrolled in the Bachelor of Engineering in Mechatronics Engineering (BEME) program, are required to complete 45 courses with a total of 140 credit hours and an Internship, within seven (7) years, to be eligible for BE (Mechatronics) degree. The following is the break-up of the 45 courses:

- 41 Compulsory Courses (125 Credit Hours)
- 3 Elective Courses²⁷ (9 Credit Hours)
- Final Year Project (6 Credit Hours) (to be completed in 7th & 8th semesters)

Course Code	Course Title	Page #
First Year		
Fall Semester		
ME 1101	Communication and Presentation Skills	169
ME 1102	Electric Circuits	169
ME 1109	Engineering Drawing - I	169
ME 1104	Engineering Mathematics-I: Calculus and Analytical Geometry	170
ME 1106	Islamic Studies	170
ME 1203	Engineering Physics	170
Spring Semester		
ME 1201	Electronic Devices and Circuits	171
ME 1202	Engineering Mathematics-II: Linear Algebra and Ordinary Differential Equations (ODES)	171
ME 1204	Engineering Statics	171
ME 2301	Computer Programming	172
ME 1207	Engineering Workshop	172
ME 2306	Pakistan Studies	172
Second Year		
Fall Semester		
ME 2307	Data Structures and Object-Oriented Programming	172
ME 2302	Digital Logic Design	173
ME 2303	Engineering Dynamics	173
ME 2304	Engineering Mathematics-III: 3-D Geometry and Vector Calculus	173
ME 2305	Network Analysis	174
ME 2309	Engineering Drawing - II	174
Spring Semester		
ME 2401	Electronics Circuit Design	174
ME 2402	Electro-Mechanical Systems	175
ME 2403	Engineering Mathematics-IV: Transformation Techniques	175
ME 2406	Strength of Materials	175
ME 2405	Thermodynamics	176

27- List of Electives is given in Appendix B.

5.11 Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
ME 3501	Engineering Mathematics-V: Numerical Methods	176
ME 3502	Fluid Mechanics	176
ME 3503	Microcontroller-Based Systems	177
ME 3504	Sensors, Actuators and Instrumentation	177
ME 3506	Materials and Manufacturing Processes	177
ME 3507	Theory of Machines	178
Spring Semester		
ME 3602	Control Systems	178
ME 3603	Engineering Mathematics-VI: Probability and Statistics	178
ME 3605	Power Electronics	179
ME 3604	Machine Design	179
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All courses may not be offered every year. Alternate courses may be substituted as and when required.

*To be continued and final grades will be awarded at the conclusion of 8th Semester.

**To be continued from 7th semester and final grades will be awarded at the conclusion of 8th

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Communication and Presentation Skills	Credit Hours	2 (2,0)
Course Code	ME 1101	Prerequisite(s)	None

Course Description

This course is aimed at improving English language communication and presentation skills of students. With a multidimensional approach, the course enables the students to practice the use of English in everyday situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to participate in seminars and discussions and make effective presentations, with an awareness of the audience and effective use of verbal and non-verbal communication. The course addresses the basic English language issues faced by the learners, while also aiming to foster in them, critical skills to develop a concise and clear argument, respond to others' comments and negotiate their own point of view persuasively. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in everyday communication in formal and informal contexts.

Equivalent Course(s)

CSC 2101, MD 1122, SS 1116, BIO 1111 AF 1203, EN 1106

Course Name	Electric Circuits	Credit Hours	4 (3,1)
Course Code	ME 1102	Prerequisite(s)	None

Course Description

This course aims to explain the working principles of resistors, capacitors and inductors in terms of voltage and current. Ohm's law, Kirchhoff's Current Law (KCL) and Kirchhoff's Voltage Law (KVL) are explained in detail. Each discussion on theory is supplemented with appropriate lab experiment. This course prepares students for more advanced courses in electronic engineering to be followed in subsequent semesters.

Equivalent Course(s)

None

Course Name	Engineering Drawing-I	Credit Hours	2 (0,2)
Course Code	ME 1109	Prerequisite(s)	None

Course Description

Drawings are means of communication for engineers. During this course this is accomplished through sketching, use of instruments and knowledge of orthographic projection. Initially students are introduced to engineering drawing basics, such as types of lines, lettering, dimensioning, use of pencil and drawing instruments, planning of drawing sheet. Then students are given practice of making engineering drawings of different objects. Furthermore, students are also made to practice to draw orthographic projections in first and third angles. This helps them in understanding the engineering drawings and then making and modifying them efficiently.

Equivalent Course(s)

None



Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Engineering Mathematics-I: Calculus and Analytical Geometry	Credit Hours	3 (3,0)
Course Code	ME 1104	Prerequisite(s)	None

Course Description	The course begins with a review of vector algebra and trigonometry; then limits and continuity are introduced. With the knowledge of limits and continuity the students develop the concept of the derivative and its applications. At the end, the students study the anti-derivative of elementary functions and applications of the definite integral in geometry, science, and engineering.
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Equivalent Course(s)	CSC 1101, BA 2404
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Course Name	Islamic Studies	Credit Hours	2 (2,0)
Course Code	ME 1106	Prerequisite(s)	None

Course Description	Islamic Studies gives an introduction to basic principles of Islam, followed by topics, such as; Ibadat (Worship), Amr Bil Maroof wa Nahi anl Munkir (i.e. commands and prohibition) , Islam's concept of knowledge, comparison with science, life history of the Prophet Muhammad (Peace and Blessings of Allah be upon Him), unity of Ummah ; Kasb-e-Halal (lawful earning) and obligations of a Muslim. In addition, fundamental human rights and minorities, Islamic society, maintaining identity in a non-Islamic state, Islamic politics, problems faced by Muslims and the status of women in Islam, are also being covered.
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Equivalent Course(s)	None
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Course Name	Engineering Physics	Credit Hours	3 (2,1)
Course Code	ME 1203	Prerequisite(s)	None

Course Description	The main objective of this course is to develop an understanding of physical processes which govern the nature. Emphasis is given to certain key branches in physics like mechanics, fluids, heat, electromagnetism, and material/energy properties in a given environment. This constructs a firm base for the courses in future semesters.
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Equivalent Course(s)	None
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Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Electronic Devices and Circuits	Credit Hours	4 (3,1)
Course Code	ME 1201	Prerequisite(s)	ME 1102

Course Description This course is an introduction to electronic circuits. It explains the basic concepts of semi-conductor diode, its current-voltage relationship and various applications of junction diode, and Bipolar Junction Transistor and Field-Effect Transistor are evolved as two PN-junction devices. In addition, relations of various currents and voltages in these transistors are explained in detail, and effect of temperature on these semiconductor devices is highlighted. A variety of applications of various types of transistors, amplifiers and power supplies are discussed in this course.

Equivalent Course(s) None

Course Name	Engineering Mathematics-II: Linear Algebra and Ordinary Differential Equations (ODES)	Credit Hours	3 (3,0)
Course Code	ME 1202	Prerequisite(s)	ME 1104

Course Description The first half of the course covers topics such as; linear algebra, systems of linear algebraic equations, vector spaces, linear dependence, bases, dimension, matrix algebra, determinants, eigenvalues, and eigenvectors. The second half covers; ordinary differential equations, including solutions to separable and linear first order equations, and higher order linear equations with constant coefficients.

Equivalent Course(s) CSC 2104

Course Name	Engineering Statics	Credit Hours	3 (3,0)
Course Code	ME 1204	Prerequisite(s)	None

Course Description This course provides a basic understanding of the part of mechanics which is concerned with the equilibrium of bodies under the action of forces. It lays the foundation and framework for subsequent courses, namely Engineering Dynamics and Mechanics of Materials. The topics include: basic concepts of mechanics and vectors, free-body diagrams and equilibrium of particles, free-body diagrams and equilibrium of rigid bodies, force systems, analysis of trusses, beams and frames, distributed forces, friction and application of frictional forces.

Equivalent Course(s) None



Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Computer Programming	Credit Hours	3 (2,1)
Course Code	ME 2301	Prerequisite(s)	None

Course Description

Computer Programming teaches the basics of C Programming Language. The topics include: C (variable, data type, arithmetic operations), expressions and operators, decisions (conditional statement, flowcharting, if/else structure, logical operators), loops, over flow conditions, properties of while loop, do while loop, switch statements, functions, arrays and their initializations, copying and linear structures.

Equivalent Course(s)

None

Course Name	Engineering Workshop	Credit Hours	2 (0,2)
Course Code	ME 1207	Prerequisite(s)	None

Course Description

Engineering Workshop course introduces students to various engineering processes in electrical and mechanical workshops. The electrical workshop would further include the hardware and software interfacing and the electro-mechanical project. Whereas, the mechanical workshop would elaborate on the wood working shop, metal work, welding shop, fitting shop and machine shop.

Equivalent Course(s)

None

Course Name	Pakistan Studies	Credit Hours	2 (2,0)
Course Code	ME 2306	Prerequisite(s)	None

Course Description

This course is oriented towards developing better understanding of Pakistan with a critical perspective. History, economics, constitutional development, cultural and social integration, as well as the study of the foreign policy forms a major part of the course.

Equivalent Course(s)

None

Course Name	Data Structures and Object-Oriented Programming	Credit Hours	3 (2,1)
Course Code	ME 2307	Prerequisite(s)	ME 2301

Course Description

This course introduces students to the concepts of object-oriented programming like classes, objects, abstraction, polymorphism, encapsulation, inheritance, etc. The course also reinforces students understanding of basic programming principles and fundamentals of procedural programming.

Equivalent Course(s)

None

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Digital Logic Design	Credit Hours	3 (2,1)
Course Code	ME 2302	Prerequisite(s)	None

Course Description

This course teaches theoretical concepts, well-supported through practical work, the systematic synthesis of the applied techniques for the design of practical digital systems. Topics include; introduction to various numbering systems, various design techniques, minimization techniques for designing efficient combinational and sequential logic circuits, basic digital circuit building blocks, such as, decoders, multiplexers, shift registers, flip flops, etc. Modern methods of designing digital circuits. Designing of autonomous and input-controlled counters & shift-registers., and concept of finite state machine.

Equivalent Course(s)

None

Course Name	Engineering Dynamics	Credit Hours	3 (3,0)
Course Code	ME 2303	Prerequisite(s)	ME 1204

Course Description

During this course, students are explained the concepts of kinematics of particle motion in various coordinate systems as well as relative and constrained motion. This helps in understanding the forces being applied on a system in motion. Students are further exposed to particles kinetics which include; the force mass acceleration, work – energy and impulse momentum. These help students in strengthening concepts related to bodies in motion.

Equivalent Course(s)

None

Course Name	Engineering Mathematics-III: 3-D Geometry and Vector Calculus	Credit Hours	3 (3,0)
Course Code	ME 2304	Prerequisite(s)	ME 1104

Course Description

This course is designed to introduce the concepts of vector-valued functions, functions of several variables, partial derivatives, multiple integrals, and vector analysis. Also, applications to geometry and physics, as well as other real-life problems are particularly emphasized in the course, e.g., surface areas or volumes of 3D objects, gradient or divergence of vector fields, etc.

Equivalent Course(s)

None



Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Network Analysis	Credit Hours	3 (3,0)
Course Code	ME 2305	Prerequisite(s)	ME 1102

Course Description

This course focuses on the analysis and circuit's response of first and second order circuits by formulation of the differential equation of the circuit and its solutions for DC and AC Forcing functions. The concept of phasors and Laplace transformation are introduced as a tool to solve the circuit equations in Laplace and phasor domains. The course also covers the frequency response of a circuit through sinusoidal analysis.

Equivalent Course(s)

None

Course Name	Engineering Drawing-II	Credit Hours	1 (0,1)
Course Code	ME 2309	Prerequisite(s)	ME 1109

Course Description

Initially students are introduced to the basic AutoCAD commands and computer-aided-drafting concepts to draw, design, and draft. Emphasis is placed on efficient and accurate drawing techniques incorporating the features, commands, and techniques for creating, editing, and printing 2D production drawings. During the latter part of the course students will create several mechanical CAD drawings following the ANSI (American Standards Institute) and ISO (International Standards Organization) standards.

Equivalent Course(s)

None

Course Name	Electronics Circuit Design	Credit Hours	4 (3,1)
Course Code	ME 2401	Prerequisite(s)	ME 1201

Course Description

This course contributes to both the engineering aspects and design components. The course has been designed with consideration to single and multi-device sub-circuits, frequency response characteristics, and feedback, stability, efficiency, and IC techniques. It is a prerequisite to senior-level electronic design courses.

Equivalent Course(s)

None

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Electro-Mechanical Systems	Credit Hours	4 (3,1)
Course Code	ME 2402	Prerequisite(s)	ME 2305

Course Description The course topics include; magnetic circuits, transformers, principles of electro-mechanical energy conversion. Faraday's Law, rotating machines, construction and operation of synchronous generators and motors, operation and performance of DC machines, small power AC motors, brush-less DC motors, stepper motors, and servo motors. In addition, sensors and microprocessor technologies are also discussed. The course includes a number of lab experiments to explain the theoretical aspect.

Equivalent Course(s) None

Course Name	Engineering Mathematics-IV: Transformation Techniques	Credit Hours	3 (3,0)
Course Code	ME 2403	Prerequisite(s)	ME 1202

Course Description The course covers the advanced topics in mathematics, applicable to engineering problems. Topics include; complex variable analysis, and Fourier analysis including complex Fourier series, complex Fourier integral, Fourier transforms and discrete Fourier transform.

Equivalent Course(s) None

Course Name	Strength of Materials	Credit Hours	4 (3,1)
Course Code	ME 2406	Prerequisite(s)	ME 1204

Course Description This course is a foundation to many advanced techniques that allow engineers to design structures, predict failures and understand the physical properties of materials. This course provides basic tools for stress, strain and strength analysis. Furthermore, methods for determining the stresses, strains and deflections produced by applied loads are taught. In summary, engineering design concepts are integrated into the Strength of Materials course.

Equivalent Course(s) None



Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Thermodynamics	Credit Hours	3 (2,1)
Course Code	ME 2405	Prerequisite(s)	ME 1203

Course Description

This course gives introduction to basic laws of thermodynamics and control volume/mass analyses, properties and behavior of pure substances, application to thermodynamic systems operating in steady state and transient processes, heat transfer mechanisms, typical power producing cycles and refrigerators. Towards the end of the course, refrigeration, heat pump systems, combustion and fuel cells are also discussed.

Equivalent Course(s)

None

Course Name	Engineering Mathematics-V: Numerical Methods	Credit Hours	3 (3,0)
Course Code	ME 3501	Prerequisite(s)	ME 1202

Course Description

This course introduces students to a variety of numerical methods and application of these methods to solve a broad range of engineering problems. The course covers fundamental principles regarding types of computational errors, and propagation of errors. The numerical methods include finding zeros of functions, solving systems of linear equations, interpolation and approximation of functions, numerical integration and differentiation, and solving initial value problems of ordinary differential equations.

Equivalent Course(s)

None

Course Name	Fluid Mechanics	Credit Hours	4 (3,1)
Course Code	ME 3502	Prerequisite(s)	ME 2405

Course Description

This course introduces students to the concepts, principles, laws, observations, and models of fluids at rest and in motion. The basic idea of what fluids are, the study of static fluids, the use of control volumes for fluids in motion, and the uses of length, mass, time and temperature dimensions to greatly simplify the description of fluids are illustrated. During the later part of the course particular attention is paid to application of hydraulics and pneumatics in Mechatronics systems.

Equivalent Course(s)

None

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Microcontroller-Based Systems	Credit Hours	3 (2,1)
Course Code	ME 3503	Prerequisite(s)	ME 2301, ME 2302

Course Description	Microcontroller-Based Systems emphasizes on the practical applications of microcontrollers for a variety of products in various fields. It teaches to perform analysis requirement of a given task, making decisions in selecting an appropriate controller, designing, implementing and fully testing the hardware and software part of the product. Furthermore, the course covers programming the microcontroller using assembly code instructions, programming the microcontroller using C/C++ in integrated development environment. The course is heavily based on practical work.
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Equivalent Course(s)	None
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Course Name	Sensors, Actuators and Instrumentation	Credit Hours	4 (3,1)
Course Code	ME 3504	Prerequisite(s)	ME 2402

Course Description	This course begins with an intensive review of passive circuit analysis, active semiconductor devices, analog circuits with a focus on the operational amplifier, and digital devices. Then, the response of electromechanical systems is studied as a basis for the proper selection and/or design of a measurement system. The next topic treats the conversion from analog to digital signals and interfacing the analog world to computers and controllers. The course concludes with the topic about theory and applications of sensors and actuators.
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Equivalent Course(s)	None
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Course Name	Materials and Manufacturing Processes	Credit Hours	3 (3,0)
Course Code	ME 3506	Prerequisite(s)	None

Course Description	This course introduces student to the structures and properties of metals, ceramics, polymers, and composites, with an understanding of the processing and design limitations of contemporary materials, as well as to new classes of materials being developed to meet the ever expanding range of material requirements. In the later part of the course, students are introduced to different manufacturing processes used in the industry.
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Equivalent Course(s)	None
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Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Theory of Machines	Credit Hours	3 (2,1)
Course Code	ME 3507	Prerequisite(s)	ME 2303

Course Description

The objective of this course is to introduce the preliminary concepts of mechanisms and to present methods of analysis for the motion and force transmission in mechanisms. This course enables students to understand various independent technical approaches that exist in the field of mechanisms, kinematics and machine dynamics.

Equivalent Course(s)

None

Course Name	Control Systems	Credit Hours	4 (3,1)
Course Code	ME 3602	Prerequisite(s)	None

Course Description

In this course students, initially are taught how to model linear time-invariant electrical, mechanical, and electro-mechanical systems. Then, students are taught to analyze the behavior of the above-mentioned systems in time and frequency domains and recognize the performance characteristics of a control system such as stability, damping, phase and gain margins. Subsequently, the students learn to analyze the performance of proportional, derivative and integral feedback controllers and design simple control systems that satisfy given criteria. Finally, students are introduced to modern state-space-based control system analysis and design techniques. The students also use industry standard software tools such as Matlab to analyze, design, and evaluate control systems.

Equivalent Course(s)

None

Course Name	Engineering Mathematics-VI: Probability and Statistics	Credit Hours	3 (3,0)
Course Code	ME 3603	Prerequisite(s)	ME 1104

Course Description

Engineering Mathematics-VI covers data and types, sampling techniques, group and ungroup data, measure of dispersion, mathematical and statistical functions, multiple linear regressions, laws of probability, probability distribution-binomial, probability distribution-normal, probability distribution-poisson, steps involved in hypothesis analysis, quality control, control chart, acceptance sampling, errors and rectification, goodness of fit, Chi-square test and curve fitting.

Equivalent Course(s)

CSC 2105

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Power Electronics	Credit Hours	4 (3,1)
Course Code	ME 3605	Prerequisite(s)	ME 2401

Course Description	The objective of this course is to expose students to electric power conversion i.e. from AC to DC and DC to AC. Special semiconductor devices like Thyristors, Silicon controlled rectifiers etc. are fully explained. The course also covers choppers, regulators and phase-controlled circuits. The course is supplemented with experiments to give students hands-on-practice for developing a thorough understanding of the subject.
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Equivalent Course(s)	None
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Course Name	Machine Design	Credit Hours	3 (3,0)
Course Code	ME 3604	Prerequisite(s)	ME 2303

Course Description	This course aims to synergize forces, moments, torques, stress and strength information to develop ability to analyze, design and/or select machine elements - with attention to safety, reliability, and societal and fiscal aspects. Finally, the course prepares the students to design static and dynamic machine elements such as shafts, springs, screws, bearings and gears.
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Equivalent Course(s)	None
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Course Name	Mechatronics System Design	Credit Hours	4 (3,1)
Course Code	ME 4705	Prerequisite(s)	ME 2402

Course Description	This course provides the essentials of digital control as applied to high-speed mechanical systems. The approach is both theoretical and practical in providing the optimal software and/or hardware control solution. Project work will include mechatronics integration of mechanical, electrical, microprocessor, micro-controller and software components including programming within engineering systems.
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Equivalent Course(s)	None
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Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Technical Writing Skills	Credit Hours	2 (2,0)
Course Code	ME 1205	Prerequisite(s)	None

Course Description

This course focuses on the use of English in professional contexts. The course aims to develop interpersonal communication skills in a dynamic, digitalized and globally connected business world. This interactive course will create an awareness in the students about the basics of communication in formal contexts, allows them to analyze the mechanics of technical business writing with the use of specific registers, and experiment with different types of letters, memos, reports, proposals, presentations, and manuals to communicate complex information with clarity, conciseness, and force to meet the basic business communication needs of working professionals.

Equivalent Course(s)

CSC 1102, MD 1222, SS 2316, BIO 1211

Course Name	Solid Modelling	Credit Hours	1 (0,1)
Course Code	ME 3607	Prerequisite(s)	ME 2309

Course Description

This course is taught with a combination of theory and practice. Alongside with the theory, the course requires a student to undertake assignments using major commercial softwares. Throughout the course intensive hand-on training on leading commercial CAD packages is provided to enable students to develop the knowledge of the complete concept from 3D Solid Modelling.

Equivalent Course(s)

None

Course Name	Engineering Economics and Project Management	Credit Hours	3 (3,0)
Course Code	ME 4702	Prerequisite(s)	None

Course Description

Engineering Economics and Project Management covers; basic economic concepts, such as types of costs, cash flow diagrams, market mechanism, equivalence, project feasibility analysis, equity versus debt financing, depreciation accounting, consumer demand and elasticity, and cost benefit analysis. Further, general project management skills and techniques are also covered.

Equivalent Course(s)

None

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Industrial Automation	Credit Hours	4 (3,1)
Course Code	ME 4801	Prerequisite(s)	ME 3503

Course Description

This course introduces the student to practical methods of automatic control of machines, processes and systems. This course primarily covers manufacturing automation with particular reference to CNC and PLC. The course also includes familiarization with PLCs, covering programming of some popular PLCs used in the industry. Towards the end of the course, an introduction to industrial robots and their application is covered.

Equivalent Course(s)

None

Course Name	Heat Transfer	Credit Hours	3 (2,1)
Course Code	ME 4703	Prerequisite(s)	ME 3502

Course Description

This course introduces the basic concepts of heat transfer, in conduction, convection, and radiation. It also deals with extended surfaces to increase heat transfer and its applications in heat sinks and in heat exchangers. The effect of heat transfer on cooling and heating is also discussed.

Equivalent Course(s)

None

Course Name	Final Year Project I & II	Credit Hours	6 (0,6)=(0,3)+(0,3)
Course Code	ME 4708 and ME 4808	Prerequisite(s)	None

Course Description

Final Year Project is a group project requiring designing of a Mechatronics product or application. Each group consists of two to four students the project is stretched over two semesters (i.e. the seventh and the eighth). A midterm evaluation is carried out in the summer semester in the presence of the department's faculty. Towards the end of the eighth semester, each group is required to submit a report according to the university's report format and present the final project.

Equivalent Course(s)

None

Bachelor of Engineering in Mechatronics Engineering (BEME)

Course Name	Robotics	Credit Hours	4 (3,1)
Course Code	ME 4802	Prerequisite(s)	ME 2303

Course Description During this course a detailed study of robotics is undertaken with particular emphasis on homogeneous transformations, kinematics, force and velocity transformation, end effectors and the interpretation of sensory information. The course is designed to explore the current and future use of automation technology in industry and everyday use. The students will receive a comprehensive overview of robotic systems and the subsystems that comprise them.

Equivalent Course(s) None

Course Name	Mechanical Vibrations	Credit Hours	2 (2,0)
Course Code	ME 4704	Prerequisite(s)	ME 2303

Course Description In this course students are introduced to the concepts of free vibration of a system, harmonic motion, viscous damping, stiffness, and system modeling and vibration measurements. Students will become familiar with the response of various systems such as single degree, multi and infinite degrees of freedom to various inputs (harmonic excitation, impulse excitation and base excitation). Furthermore, design of systems for vibration suppression and machine condition monitoring using vibration and acoustics emission is introduced. In summary, emphasis is placed on developing a thorough understanding of how the changes in system parameters affect the system response.

Equivalent Course(s) None

Course Name	Professional Practices	Credit Hours	2 (2,0)
Course Code	ME 4706	Prerequisite(s)	None

Course Description This course provides students with an introduction to the issues in engineering ethics. It places those issues within a philosophical framework, and it seeks to exhibit their social importance and intellectual challenge. The goal is to stimulate reasoning and to provide students with the conceptual tools necessary for responsible decision making.

Equivalent Course(s) None



Department of
Biosciences

6.1 Bachelor of Science

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Students enrolled in Bachelor of Science in Biosciences (BS-Biosciences) program are required to complete 43 courses with a minimum of 135 credit hours, within seven (7) years to become eligible for obtaining the BS degree in Biosciences. The break-up of 44 courses is as follows:

- 39 Compulsory Courses (120 Credit Hours)
- 4 Elective Courses²⁸ (12 Credit Hours)
- 1 Research Report (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BIO 1101	Cell Biology	186
BIO 1111	English for General Purposes	186
BIO 1107	Fundamental Mathematics	187
BIO 1113	Microbiology-I	187
BIO 1109	Chemistry	188
Spring Semester		
BIO 1213	Microbiology-II	188
BIO 2301	Biochemistry-I	188
BIO 1211	English for Academic Purposes	189
BIO 1214	Sociology	189
BIO 1208	Statistics	189
BIO 1212	Islamic Studies/Ethics and Pakistan Studies	190
Second Year		
Fall Semester		
BIO 1206	Physiology-I	190
BIO 2411	English for Professional Purposes	190
BIO 2401	Biochemistry-II	191
BIO 1104	Introduction to Computing	191
BIO 3504	Immunology	191
Spring Semester		
BIO 2305	Physiology-II	192
BIO 2404	Lab Management	192
BIO 4803	Molecular Biology	192
BIO 2409	Humanities	192
BIO 3503	Genetics	193

²⁸ List of Electives is given in Appendix B.

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Code	Course Title	Page #
Third Year		
Fall Semester		
BIO 2406	Genetic Engineering	193
BIO 3507	Biotechnology-I	193
BIO 2405	Hematology	194
BIO 4801	Bioethics	194
BIO 3505	Pharmacology-I	194
BIO 2306	Psychology	195
Spring Semester		
BIO 2407	Basic Endocrinology	195
BIO 3607	Biotechnology-II	195
BIO 3601	Agricultural Sciences	196
BIO 2304	Nutrition and Dietetics	196
BIO 3605	Pharmacology-II	196
BIO 4703	Research Methodology	197
Fourth Year		
Fall Semester		
BIO 4701	Business Management	197
BIO 4705	Research Report-I	197
BIO 2309	Animal and Plant Tissue Culture	198
BIO 2402	Bioinformatics	198
BIO 4xxx	Elective-I	263
BIO 4xxx	Elective-II	263
Spring Semester		
BIO 2403	Environmental Sciences	198
BIO 4802	Biophysics	199
BIO 3509	Epidemiology	199
BIO 4805	Research Report-II	197
BIO 4xxx	Elective-III	263
BIO 4xxx	Elective -IV	263

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Cell Biology	Credit Hours	3 (2,1)
Course Code	BIO 1101	Prerequisite(s)	None

Course Description

The course topics include: cell theory, structure, chemical constituents of cell and cell organelles and their functions, separation of cell organelles, cell membrane, its molecular organization and functional role. The concept of the unit membrane, the fluid mosaic model, membrane receptors and transport mechanisms, endoplasmic reticulum, lysosome, micro-bodies, mitochondrial ultra-structure and function, chloroplast ultra-structure and the mechanism of photosynthesis. Cell movements, structure and function of cytoskeleton, centriole, cilia and flagella, the mitotic apparatus. The nucleus, structure and function of chromosomes, and the cell cycle. Fundamentals of Eukaryotic Gene Expression, and reproduction in Eukaryotic cell.

Equivalent Course(s)

None

Course Name	English for General Purposes	Credit Hours	3 (3,0)
Course Code	BIO 1111	Prerequisite(s)	None

Course Description

The course is aimed at improving English language communication and presentation skills of students. With a multidimensional approach, the course enables the students to practice the use of English in everyday situations, building upon all four skills: listening, speaking, reading and writing. It prepares them to participate in seminars and discussions and make effective presentations, with an awareness of the audience and effective use of verbal and non-verbal communication. The course addresses the basic English language issues faced by the learners, while also aiming to foster in them, critical skills to develop a concise and clear argument, respond to others' comments and negotiate their own point of view persuasively. The course uses an interactive, participatory methodology, to engage learners' interest and boost their confidence to use English in everyday communication in formal and informal contexts.

Equivalent Course(s)

CSC 1102, BA 1105, SS 1116, MD 1122, BIO 1103, ME 1101, AF 1203, EN 1106, BST 1103

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Fundamental Mathematics	Credit Hours	3 (3,0)
Course Code	BIO 1107	Prerequisite(s)	None

Course Description	<p>The course topics include:</p> <p>Preliminaries: Real-number system, complex numbers, introduction to sets, set operations, functions, types of functions.</p> <p>Matrices: Introduction to matrices, types, matrix inverse, determinants, system of linear equations, Cramer's rule.</p> <p>Quadratic Equations: Solution of quadratic equations, qualitative analysis of roots of a quadratic equations, equations reducible to quadratic equations, cube roots of unity, relation between roots and coefficients of quadratic equations.</p> <p>Sequences and Series: Arithmetic progression, geometric progression, harmonic progression.</p> <p>Binomial Theorem: Introduction to mathematical induction, binomial theorem with rational and irrational indices.</p> <p>Trigonometry: Fundamentals of trigonometry and trigonometric identities.</p>
Equivalent Course(s)	BA 1204, AF 1102, EN 1101

Course Name	Microbiology-I	Credit Hours	3 (2,1)
Course Code	BIO 1113	Prerequisite(s)	None

Course Description	<p>The course topics include; Fundamentals of Microbiology, Microorganisms and their respective place in the living world, differentiation between prokaryotic and eukaryotic cells, historical development of Microbiology and its scope. Microscopy, morphology, bacterial taxonomy and nomenclature, other topics include growth, nutrition (physical and nutritional requirement and nutritional types, sources of energy, C, N, H, O, S, P, H₂O, trace elements, growth factors) and reproduction, general methods of studying microorganisms, including cultivation, isolation, purification and characterization, control of microorganisms by physical and chemical methods. Chemotherapeutic agents and antibiotics, modes of action of antibiotics on microorganisms, basic properties of fungi, protozoa and algae, and a brief introduction to structure and propagation of viruses and bacteriophages.</p>
Equivalent Course(s)	None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Chemistry	Credit Hours	3 (3,0)
Course Code	BIO 1109	Prerequisite(s)	None

Course Description

This course topics include: Chemical Bonding: types of chemical bonding, localized bond approach, theories of chemical bonding. Acids and Bases. Brief concepts of chemical equilibrium. p-Block Elements, Basic concepts of organic chemistry: structure- aromaticity, inductive effect, dipole moment, resonance and its rules, hyperconjugation, classification and nomenclature of organic compounds including IUPAC system, types of organic reactions (an overview). Chemistry of Hydrocarbons: saturated, unsaturated and aromatic hydrocarbons with emphasis on synthesis and free radical, electrophilic addition and electrophilic substitution reactions. Chemistry of Functional Groups: Green Chemistry, ionic liquids, super critical extraction technology, Chemical Thermodynamics, Chemical Equilibrium, Solution Chemistry, Physical properties of liquids, surface tension, viscosity, refractive index. Chemical Kinetics, The rates of reactions, zero, first, second and third order reactions with same and different initial concentrations, half-lives of reactions. Classical Analytical Methods in Chemical Industries.

Equivalent Course(s)

None

Course Name	Microbiology-II	Credit Hours	3 (2,1)
Course Code	BIO 1213	Prerequisite(s)	BIO 1113

Course Description

The course topics include; bacterial DNA replication, transcription, translation, mutation and variation, introduction to the genetical intermixing of bacteria including transformation, transduction and conjugation. Microbiology of water and wastewaters is studied as a source of infection and methods of water purification, along with Methods of sewage treatment and disposal. The course introduction to food and dairy microbiology, include methods of food preservation, food intoxication and food-infection. Microbiology of soil with particular reference to nitrogen cycle and microbiology of air. Pathogenesis of microorganism and molecular mechanism of pathogenesis and bacterial, fungal and viral diseases are also covered.

Equivalent Course(s)

None

Course Name	Biochemistry-I	Credit Hours	3 (2,1)
Course Code	BIO 2301	Prerequisite(s)	None

Course Description

The course topics include; Water, pH, buffers, diffusion, osmosis, surface tension, carbohydrates, amino acids, proteins, structure and function, molecular structure of proteins, relationship between the structure and function of proteins, relationship of primary structure and function of protein, enzymes, the Michaelis-Menten equation, enzyme inhibitors, reversible enzyme inhibition, irreversible enzyme inhibition. Lipids, vitamins and nucleic acids.

Equivalent Course(s)

None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	English for Academic Purposes	Credit Hours	3 (3,0)
Course Code	BIO 1211	Prerequisite(s)	BIO 1111

Course Description

This course is designed to improve academic English language and study skills of students. The course follows a multidimensional approach based on the four language skills with a specific focus on reading and writing skills that are required in research-based study at university level. The course includes listening and note taking skills, library and internet use for locating and evaluating research articles. In addition, the course seeks to enable the students to speed read, skim, scan and infer from written text. The course specifically focuses on enabling the students to experiment with complex grammatical forms, sentence structures and logical paragraph development, to present coherent, cohesive and effective arguments clearly in research-based writing according to the requirements of their specific discipline.

Equivalent Course(s)

BA 1206, CSC 2101, BIO 1202, ME 1205, MD 1222, SS 2316, AF 1203, EN 1106

Course Name	Sociology	Credit Hours	3 (3,0)
Course Code	BIO 1214	Prerequisite(s)	None

Course Description

This course focuses on three central themes: social change, social inequality, and social harmony versus conflict. It combines selective theoretical texts with case studies to understand the mechanisms and institutions that can trigger, foster, sustain, or undermine each of the three processes. The course covers the work of major sociological thinkers and the influence of sociology on modernization, race, citizenship, culture, gender, society, and economic development.

Equivalent Course(s)

BA 2307, BA 2306, MD 1104, AF 2304, SS 2307

Course Name	Statistics	Credit Hours	3 (3,0)
Course Code	BIO 1208	Prerequisite(s)	BIO 1107

Course Description

The course topics include; Definition of statistics, characteristics, importance and limitations, population and samples, frequency distribution and probabilities, formation of frequency table from raw data, histograms, applications of probabilities to simple events, measures of central tendencies and dispersion, arithmetic mean, median, mode, range, variance and standard deviation, standard error of the mean, mean deviation, semi interquartile range, standard distribution (binomial, poisson and normal distributions, properties and application, normality), test of significance (t-test, X²-test, F-test, L.S.D. test, multiple range test), design of experiment, brief account of correlation and regression, and computer based statistical software applications.

Equivalent Course(s)

CSC 2105, BA 3605, BA 5405, BA 5305, BA 2305, BIO 1208, AF 2406, EN 2304, BST 1206

6.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Islamic Studies/Ethics and Pakistan Studies	Credit Hours	3 (3,0)
Course Code	BIO 1212	Prerequisite(s)	None

Course Description	<p>Islamiat: Islamic history, Introduction to Quranic studies, study of selected text of Holy Quran, Seerat of Holy Prophet (S.A.W), Introduction to Sunnah, Selected study of Hadith, Islamic culture & civilization, Islam & Science, Economic, Political, and Social System of Islam.</p> <p>Ethics: This course introduces contemporary and controversial ethical issues facing the scientific community. Topics include moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students should be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.</p> <p>Pakistan Studies: Historical Perspective: Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-i-Azam Muhammad Ali Jinnah, Factors leading to Muslim separatism. Government and Politics in Pakistan: Political and constitutional phases of 1947-58, 1958-71, 1971-77, 1977-88, 1988-99, 1999 onward. Contemporary Pakistan: Economic institutions and issues, Society and social structure, Ethnicity, Foreign policy of Pakistan and challenges, Futuristic outlook of Pakistan.</p>
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Equivalent Course(s)	BA 1106, CSC 1105, MD 2402, SS 1109, CSC 1105, EN 1105
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Course Name	Physiology-I	Credit Hours	3 (2,1)
Course Code	BIO 1206	Prerequisite(s)	None

Course Description	<p>This course is designed to provide students with an understanding of the function and regulation of the human body and physiological integration of the organ system. The course topics include; basic principle of physiology level of chemical and physiological organization of human, cell physiology, physiology blood and blood cells cardiovascular and circulatory system. Physiology of respiratory system, mechanism of oxygen transport into the cells and physiology of renal system.</p>
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Equivalent Course(s)	None
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Course Name	English for Professional Purposes	Credit Hours	3 (3,0)
Course Code	BIO 2411	Prerequisite(s)	BIO 1111, BIO 1211

Course Description	<p>This technical and business writing course focuses on the use of English in professional contexts. The course aims to develop interpersonal communication skills in a dynamic, digitalized and globally connected business world. This interactive course will create an awareness in the students about the basics of communication in formal contexts, allows them to analyze the mechanics of technical business writing with the use of specific registers, and experiment with different types of letters, memos, reports, proposals, presentations, and manuals to communicate complex information with clarity, conciseness, and force to meet the basic business communication needs of working professionals.</p>
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Equivalent Course(s)	CSC 1205
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6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Biochemistry-II	Credit Hours	3 (2,1)
Course Code	BIO 2401	Prerequisite(s)	BIO 2301, BIO 1206

Course Description	The course topics include, metabolism, metabolic pathways, major pathways in cells, thermodynamics and metabolism. The concept of oxidation electron transport chain and oxidative phosphorylation. Carbohydrate metabolism, lipids metabolism, amino acid metabolism, nucleotide metabolism, introduction to molecular biology, and introduction to endocrinology.
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Equivalent Course(s)	None
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Course Name	Introduction to Computing	Credit Hours	3 (2,1)
Course Code	BIO 1104	Prerequisite(s)	None

Course Description	The course topics include; basic computing hardware (input, output, processing and storage devices) and software classification with important historical events; software applications using office automation tools (Word Processor, Spread Sheet, Presentation Software); effective use of internet/intranet; introduction to software/web programming and development, computer networks, information technology within the broader domain of computing, and social issues of computing.
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Equivalent Course(s)	CSC 1104, BA 1108, BA 1103, AF 1102, EN 1102, BST 1102
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Course Name	Immunology	Credit Hours	3 (2,1)
Course Code	BIO 3504	Prerequisite(s)	None

Course Description	The course topics include; introduction: chronological development and scope of immunology. Immunity and immune responses: Definitions and types (specific and non specific). Humoral and cellular immunity. Complement system. Cells and tissues of immune system. The antigens: structure (simple and complex molecules, proteins and polysaccharides) and immunogenicity. Immunoglobulins: structure and function; classes, subclasses, types and subtypes; immunoglobulin genetics. Immune response to an antigen. Introduction to antigen-antibody reactions: methods for detecting antigens and antibodies (agglutination, precipitation, complement fixation, EIA, etc.). HLA & MHC and its role in immune response, disease and its significance in tissue transplantation. Immunoregulation and tolerance, cancer immunology, hypersensitivity reactions, autoimmune diseases and immunodeficiencies, and Immunization (methods of immunization, vaccines and adjuvants).
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Equivalent Course(s)	None
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6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Physiology-II	Credit Hours	3 (2,1)
Course Code	BIO 2305	Prerequisite(s)	BIO 1206

Course Description This course will cover physiology, gastrointestinal system, central nervous system, autonomic nervous system, peripheral nervous system and special senses which include sense of vision, sense of hearing, sense of pain, sense of taste and sense of smell.

Equivalent Course(s) None

Course Name	Lab Management	Credit Hours	3 (2,1)
Course Code	BIO 2404	Prerequisite(s)	BIO 1209

Course Description The course topics include; Introduction to lab management, quality management systems, health safety in laboratories, work safety legislations, animal biosafety consideration, fire safety and risk assessment, hazards of biological waste and disposal, basic principles of biosafety, levels of biosafety, biocontainment of genetically modified organisms, packing and shipment of biological materials.

Equivalent Course(s) None

Course Name	Molecular Biology	Credit Hours	3 (2,1)
Course Code	BIO 4803	Prerequisite(s)	BIO 1209, BIO 1101

Course Description The course topics include; overview of Molecular Biology, logic of Molecular Biology, types and functions of various DNA and RNA polymerases, types and functions of Endonucleases and Exonucleases, Plasmid, Vectors types and functions, transfer of specific genetic material in host and its expression, Molecular techniques for Gene Amplification, techniques for DNA sequencing, techniques for identification of Genetic disorders and infectious diseases e.g. HBV, HCV, HAV, HIV, Tuberculosis, Typhoid, etc.

Equivalent Course(s) None

Course Name	Humanities	Credit Hours	3 (3,0)
Course Code	BIO 2409	Prerequisite(s)	None

Course Description This course includes an introduction to the humanities through a review of some of the major developments in human culture. The goal is to analyze how societies express themselves through literature, art, music, philosophy, and technology. Focus is on developing the conceptual tools to understand cultural phenomena critically.

Equivalent Course(s) None

6.11 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Genetics	Credit Hours	3 (2,1)
Course Code	BIO 3503	Prerequisite(s)	BIO 4803

Course Description	The course topics include; Mendelian genetics, principle of segregation, symbols and terminology, monohybrid crosses, dominance, recessiveness, codominance, semidominance, principle of independent assortment, dihybrid ratios, trihybrid ratios, gene interaction, epistasis, and multiple alleles. ABO blood type alleles in humans, Rh factor alleles in humans, probability in Mendelian inheritance, chi-square, structure of chromosomes and genes, DNA as storage of genetic information, Friedrich Miescher Experiment, Avery, Macleod and McCarty experiment, Hershey and Chase experiment, Watson and Crick DNA model, sex determination, identification of sex chromosomes, environmental factors and sex determination, linkage and crossing over.
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Equivalent Course(s)	None
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Course Name	Genetic Engineering	Credit Hours	3 (2,1)
Course Code	BIO 2406	Prerequisite(s)	None

Course Description	The course topics include; an outline of DNA cloning experiment, cloning vectors including plasmids, bacteriophages, cosmids YAC vectors, shuttle and expression vectors, Tumor Inducing (TI) plasmids, and DNA libraries, screening methods for gene libraries. Southern and Northern blotting Human genome project along with stem cells and therapeutic cloning and social considerations are included in the course.
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Equivalent Course(s)	None
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Course Name	Biotechnology-I	Credit Hours	3 (2,1)
Course Code	BIO 3507	Prerequisite(s)	BIO 4803, BIO 2309

Course Description	The course topics include: history, importance, screening and selection of microorganisms of industrial importance, development and maintenance of pure cultures, microbial growth dynamics, effect of environments on microbial activity, culture preservation and maintenance, strain improvement, screening, enrichment, protoplast fusion, gene cloning, inoculum, development, size and physiological state, mixed cultures and substrate system, tissue culture, nano-biotechnology, principles of methods and their application in industry and agricultural, biomedical, and environmental biotechnology.
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Equivalent Course(s)	None
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6.11 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Hematology	Credit Hours	3 (2,1)
Course Code	BIO 2405	Prerequisite(s)	BIO 2305, BIO 1206

Course Description The course topics include; ABO and Rhesus blood group system, types of blood cells and their functions, formation and maturation of blood cells, general principles and iron metabolism, hematological disorders, hereditary spherocytosis, anaemia, types of anaemia, neutropenia, Hodgkin's disease, idiopathic and thrombotic purpura, thalassemia and its types, hematology laboratory procedures, clotting mechanisms and disorders, and detection of coagulation disorders.

Equivalent Course(s) None

Course Name	Bioethics	Credit Hours	3 (3,0)
Course Code	BIO 4801	Prerequisite(s)	None

Course Description The course topics include; why study Bioethics, Introduction (Definition, branches, Oaths & laws relating to Medical Profession), Ethical Issues in Organ transplantation & artificial insemination and Assisted Reproductive Technology (ART), Ordinance/Laws pertinent Gender sensitivity/women issues, such as: Haddood Ordinance, Swara + Vanni, Karo-Kari, Taboos against divorced women/widow, Female feticide, Physical violence against women, Fatal/lethal burns to married/unmarried women, Assessment process and intervention strategies by medical professionals, Medical negligence and medical malpractice, Patients' rights, Consent to Medical Examination and Treatment, Global ethical issues, Other ethical issues, such as: Child abuse and molestation, The practice of alternate medicine, Quackery, Pakistan ethical issues verses global ethical issues, Religious perspective (commonality), Ethical dilemmas at workplace, Flesh trade, Child labor, Myths and ethics.

Equivalent Course(s) None

Course Name	Pharmacology-I	Credit Hours	3 (2,1)
Course Code	BIO 3505	Prerequisite(s)	BIO 1206, BIO 2305

Course Description The course topics include; introduction, history of pharmacology and its classification, drugs and their sources, routes of drugs administration, advantages and disadvantages of enteral routes, advantages and disadvantages of parenteral routes, advantages and disadvantages of topical routes, pharmacokinetics, drug solubility and passage of drugs across the body membranes, plasma concentration of drugs and various factors affecting it (absorption and factors influencing the rate of absorption, GIT and other routes) of drugs, distribution and factors influencing the rate of distribution of drugs, biotransformation and factors influencing the rate of biotransformation of drugs, excretion, channels of excretion and factors influencing the rate of excretion of drugs, definition of bioavailability and bioequivalence, therapeutic index, plasma half life ($t_{1/2}$), dose-response curve, area under curve, volume of distribution, pharmacodynamics, drug receptors and theories, mechanisms of drug action, specificity of drug action and factors modifying the action and dosage of drugs.

Equivalent Course(s) None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Psychology	Credit Hours	3 (3,0)
Course Code	BIO 2306	Prerequisite(s)	None

Course Description

The course topics include why study psychology, nature and application of psychology with special reference to Pakistan, schools of psychology, methods of psychology, biological basis of behavior and sensation, perception and attention. It helps distinguish between the major perspectives on human thought and behavior and appreciate the variety of ways psychological data are gathered and evaluated. The course also entails gaining insight into human behavior and into one's own personality or personal relationships, exploring the ways that psychological theories are used to describe, understand, predict, and control or modify behavior, motives, emotions, learning, memory and thinking, impact of behavior on organization, how do the tools of psychology improve work output, social medicine, and social evils.

Equivalent Course(s)

SS 2306, BA 2312, MD 2424, BA 2306, SS 2306, AF 2303, EN 1104

Course Name	Basic Endocrinology	Credit Hours	3 (3,0)
Course Code	BIO 2407	Prerequisite(s)	BIO 1206, BIO 2305

Course Description

The course topics include; hormones and chemical signals, receptors, basic principle of endocrine physiology, synthesis, secretion and mode of action of various hormones, hormonal control of metabolism, hypothalamic and pituitary hormones, thyroid glands and its hormones; adrenal glands and its hormones, calcium hemostasis, hormonal assays, and hormonal control of reproduction in males and females.

Equivalent Course(s)

None

Course Name	Biotechnology-II	Credit Hours	3 (2,1)
Course Code	BIO 3607	Prerequisite(s)	BIO 2302

Course Description

The course topics include; advances in vaccine development, recombinant products expression and transgenic, bioreactor design, introduction to factors affecting bioreactor design, description of a typical aseptic bioreactor, bioreactor configurations and scale-up of bioreactor system, design of sterilization systems, oxygen mass transfer and heat transfer in bioreactor systems, fermentation technology, product recovery, waste treatment and safety, biosensors (applications of biosensors, transducer technology, principles of biosensors), recombinant protein production, general aspects of heterologous protein expression, bacterial expression systems- Escherichia coli and Bacillus subtilis, Saccharomyces cerevisiae a system for expression of heterologous proteins, expression in non-saccharomyces yeast species and filamentous fungi, enzymes and industry, extremozymes, enzyme evolution, and microbial productions of pharmaceuticals, diagnostic proteins, vaccines, microbial toxins and insecticides.

Equivalent Course(s)

None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Agricultural Science	Credit Hours	3 (3,0)
Course Code	BIO 3601	Prerequisite(s)	BIO 2406, BIO 2302

Course Description	The course topics include; Agricultural systems (definitions, history, domestication), the concepts of plant molecular markers, historical background of tissue culture, requirements for in-vitro cultures, role of Phyto-hormones in somatic embryogenesis, Somaclonal variations as breeding tool, Somatic Hybridization, commercial application and issues related to tissue culture, plant transformation, gene gun method of transformation, Agrobacterium-mediated transformation, PEG mediated transformation, field evaluation and commercialization, transgenic crops for herbicide, biotic and abiotic stress resistance, introduction to bio fertilizers, biosafety concerns and bioethics on GM crops, and ethical issues in sustainable agriculture and agricultural research.
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Equivalent Course(s)	None
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Course Name	Nutrition and Dietetics	Credit Hours	3 (3,0)
Course Code	BIO 2304	Prerequisite(s)	BIO 2301, BIO 1206

Course Description	The course topics include; what is and why study nutrition and dietetics, role of nutrition and dietetics in health and how it helps in health, energy and protein, carbohydrates and fats, water soluble vitamin, fat soluble vitamins, minerals RDA/dietary guidelines, nutrition in pregnancy and lactation, nutrition in the growing years, nutrition in adult and elderly, nutrition problem in Pakistan, nutritional assessment, principle of diet therapy in patients, diet in body weight control, diabetes mellitus, hypertension, cardiovascular disease, cancer, osteoporosis, renal disease and food service management in hospitals, and screening of deficiencies.
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Equivalent Course(s)	None
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Course Name	Pharmacology-II	Credit Hours	3 (2,1)
Course Code	BIO 3605	Prerequisite(s)	BIO 3505

Course Description	The course topics include; drugs acting on central nervous systems- depressants, hypnotic and sedatives and analgesics (narcotic analgesics and opioid antagonists, analgesic, antipyretic and anti-inflammatory drugs, chemotherapy, anti-microbials, sulphonamides, anti-virals, anti- protozoals treatment of malaria and treatment of amebiasis), anti-fungals, anthelmintics, penicillins, cephalosporins, aminoglycosides, tetracyclines, chloramphenicol, macrolides, quinolones and miscellaneous anti-biotics.
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Equivalent Course(s)	None
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6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Research Methodology	Credit Hours	3 (3,0)
Course Code	BIO 4703	Prerequisite(s)	BIO 4801, BIO 2404

Course Description

The course topics include; problem identification, problem statement, objectives, literature review and referencing, conceptual framework/hypotheses, planning, methods and procedures, presenting professional papers, introduction to data collection and analysis, statistical measures, hypothesis testing, linear regression and analysis of variance in application oriented manner, data collection methods using various instruments, analysis of experimental and quasi-experimental methods, and presentation of research findings.

Equivalent Course(s)

CSC 5105, MPH 5205

Course Name	Business Management	Credit Hours	3 (3,0)
Course Code	BIO 4701	Prerequisite(s)	None

Course Description

The course topics include; basic business decisions, defining, assessing and choosing options, laying the foundations, market research, understanding and reaching customers, cost and profit analysis, finances and assets, competitors and constraints, writing a business plan, running your business; selling techniques and business promotions, e-marketing and online selling, customer satisfaction, price and budgeting; cash flow and book-keeping, and negotiating and legal aspects of small businesses.

Equivalent Course(s)

None

Course Name	Research Report-I Research Report-II	Credit Hours	6 (3,3)
Course Code	BIO 4705 BIO 4805	Prerequisite(s)	BIO 2401, BIO 1207 BIO 2305, BIO 4803

Course Description

A Biosciences related research project is to be conducted, in which candidates are required to do a short lab experiment, and present their findings in terms of research report and power point presentations.

Equivalent Course(s)

None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Animal and Plant Tissue Culture	Credit Hours	3 (2,1)
Course Code	BIO 2309	Prerequisite(s)	None

Course Description

The course topics include; Introduction and history of plant tissue culture; design of typical tissue culture laboratory, basic media and their components. Culture initiation; explants; type of explants, preparation of explant and their sterilization. Callus culture, cell culture, and single cell culture. Synseeds or synthetic seeds production. Somaclonal variation; problems and benefits. Protoplast culture and Somatic hybridization. Somatic Embryo Production (Somatic Embryogenesis); Principles, technology of automation and the application. Production of natural products by plant cell, tissue and organ culture. Introduction to animal tissue culture, history and application of cell and tissue culture, different types of cell culture, Isolation of cells for culture, factors effecting the growth of cultured cell, contact inhibition, subculturing, establishment of cell line, cryopreservation, characterization and validation

Equivalent Course(s)

None

Course Name	Bioinformatics	Credit Hours	3 (2,1)
Course Code	BIO 2402	Prerequisite(s)	BIO 1104

Course Description

The course topics include; bioinformatics approach to study molecular to organism level of biological hierarchical structure, application of computational tools to the analysis of genome and their gene products, protein structure, classification, mechanism of protein folding and folding pathways and role of chaperones in protein folding, experimental techniques for characterizing membrane, introduction to sequence databases, comparing sequences against sequence databases, predicting protein coding and non coding regions. Additional topics include; prediction of protein structure from sequencing data, phylogenetic analysis, genome sequencing projects, bioinformatics, and genome analysis.

Equivalent Course(s)

CSC 4707

Course Name	Environmental Science	Credit Hours	3 (3,0)
Course Code	BIO 2403	Prerequisite(s)	None

Course Description

The course topics include; Environmental Sciences study of inter-relationship, matter, energy and environment, risk assessment, ecosystems and communities, biogeochemical cycle, population characteristics and issues, energy, biodiversity, land use planning, agricultural methods and pest management, water management, air quality issues, solid waste management and disposal, environmental regulations, hazardous substances and wastes.

Equivalent Course(s)

None

6.1.1 Bachelor of Science in Biosciences (BS-Biosciences)

Course Name	Biophysics	Credit Hours	3 (3,0)
Course Code	BIO 4802	Prerequisite(s)	BIO 1206

Course Description The course topics include; introduction to basic concepts of biophysics, physicist and biologist approaches to biophysics, water, biostructures, assemblies of biomolecules, physical sketch of cell, light and life, photosynthesis, UV effects on biosystems, mechanics and dynamics, physics of reactions, molecular machines, assembly, and biostructures.

Equivalent Course(s) None

Course Name	Epidemiology	Credit Hours	3 (3,0)
Course Code	BIO 3509	Prerequisite(s)	None

Course Description The course topics include; dynamics of disease transmission, measures of disease impact, disease surveillance, validity and reliability of diagnostic tests, natural history of disease, cohort studies and case controls with other design, risk and association, bias with confounding and interaction, genetic and environmental factors in disease causation, epidemiology to evaluate health services with screening programs and public policy, ethical and professional issues in Epidemiology.

Equivalent Course(s) None

6.2 Masters

6.2.1 Master of Public Health (MPH)

Students enrolled in Master of Public Health (MPH) are required to complete 19 courses and a thesis of total 60 Credit Hours, within five (5) years. The break-up of credit hours is as follows:

- 19 Courses (54 Credit Hours)
- 1 Thesis (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
MPH 5101	Environmental & Occupational Health	201
MPH 5102	Epidemiology	201
MPH 5103	Foundations of Public Health	202
MPH 5104	Social & Behavioral Sciences	202
MPH 5105	Statistical Reasoning in Public Health	202
Spring Semester		
MPH 5201	Chronic Non Communicable Diseases	203
MPH 5202	Health Services Administration	203
MPH 5203	Infectious Diseases	204
MPH 5205	Research Methodology	204
MPH 5206	Applied Health Communication	204
Second Year		
Fall Semester		
MPH 5204	Nutrition & Health	205
MPH 5301	Demography	205
MPH 5306	Maternal & Child Health	206
MPH 5307	Medical Ethics & Law	206
MPH 5309	Thesis-I	207
Spring Semester		
MPH 5302	Health Promotion	207
MPH 5401	Health Policy	207
MPH 5402	International Health	208
MPH 5403	PPP & NGO Management	208
MPH 5409	Thesis-II	209

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

6.2.1 Master of Public Health (MPH)

Course Name	Environmental & Occupational Health	Credit Hours	3 (3, 0)
Course Code	MPH 5101	Prerequisite(s)	None

Course Description

This course deals with the concepts, principles and applications of the natural and social science disciplines. It includes scientific understanding of causes and approaches to control major Environmental Health (EH) problems in industrialized and developing countries, Global & Pakistan EH Issues, and human impacts on environment and vice versa. Also, it includes sanitation status of Pakistan and the region; water, air and noise pollution; solid and hazardous waste management; environmental impact assessment basic principles; climate change and its effect on health; environment policy and law; forestry; and poverty and EH natural disaster management legislation and regulatory framework. In addition healthy cities and villages; health & safety of the occupational group; occupational health concepts, principles and methods; issues in low-income countries industrial hygiene; clinical occupational and environmental medicine are discussed. Moreover, legal and regulatory issues labor laws, OJI's, compensation, OSHA, environmental and occupational toxicology and acoustics, engineering controls, hazardous materials management, pesticides, radiation protection, and Global environment and ergonomics are also discussed

Equivalent Course(s)

None

Course Name	Epidemiology	Credit Hours	3 (3,0)
Course Code	MPH 5102	Prerequisite(s)	None

Course Description

This course includes epidemiological principles, their application to research methodology, development of skills & concepts & deriving meaningful interpretations of mathematical calculations. Also, it includes epidemiology in Public Health & Research; epidemiological study designs: their importance, uses and limitations; outcome measures for each study design; causality & association Inferential Epidemiology; validity and reliability; measuring disease burden: Rates, Ratios, Incidence, Prevalence, Role of Chance, Confounding and Bias in interpretations and disease screening.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	Foundations of Public Health	Credit Hours	3 (3,0)
Course Code	MPH 5103	Prerequisite(s)	None

Course Description	This course aims at developing public health concepts, problem solving proficiency and multi-disciplinary approach of Public Health. This includes epidemiology, biostatistics, environmental health, health services administration, social & behavioral sciences, and disease-control, reproductive health. Also, it includes maternal & child health, health informatics, genomics, communication, cultural & social diversity, community-based participatory research, policy, law, and global health and ethics. In addition, it addresses public health issues in its historical perspective, and impactful interventions and policy strategies for evaluation of a public health problem.
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Equivalent Course(s)	None
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Course Name	Social & Behavioral Sciences	Credit Hours	3 (3, 0)
Course Code	MPH 5104	Prerequisite(s)	None

Course Description	This course includes social sciences in PH, equity in health care, gender health, socio-cultural factors and their impact on health economics and health, role of civil society in health care, community participation in health care, identification of social and behavioral determinants of health, evaluation of interventions and policies for improvement of population health, and leadership positions in advocacy and public service. Also, it discusses testing innovative social policy and service interventions; planned social change; underserved, marginalized, and populations in special need; educational interventions; community development; social marketing; communication; adult-learning approaches; advocacy; social conditions affecting population's health; substance use; body dysmorphic syndrome; and anorexia nervosa.
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Equivalent Course(s)	None
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Course Name	Statistical Reasoning in Public Health	Credit Hours	3 (3, 0)
Course Code	MPH 5105	Prerequisite(s)	None

Course Description	Statistical Reasoning in Public Health (PH) is fundamental for application of statistical methods in designing scientific studies, data collection, data analysis and inferences. This will introduce essential statistical tools of Public Health to conduct & interpret quality research. Also, application of concepts and numerical skills to PH issues is introduced. In addition, statistical software, epidemiological and statistical knowledge and skills in addressing and solving health and public health issues, and developing research strategies using statistical methods and statistical software/s.
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Equivalent Course(s)	BIO 5102
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6.2.1 Master of Public Health (MPH)

Course Name	Chronic Non Communicable Diseases	Credit Hours	3 (3, 0)
Course Code	MPH 5201	Prerequisite(s)	None

Course Description

This course discusses disease burden Non Communicable Diseases (NCD) and how risk factors affect the burden of NCDs, definitions & characteristics of NCDs, global trends in NCDs, risk factors and metabolic risk factors, common risk factors for NCDs, behavioral lifestyle risk factor, global burden & health effects, characteristics of NCDs, types of NCDs Global trends causes of death risk factors, modifiable risk factor and non-modifiable risk factor, global health observatory and Media center fact sheets, Cardio Vascular Disease (CVD) , coronary heart disease, cerebro-vascular disease, peripheral arterial disease, congenital heart disease, and Chronic Obstructive Pulmonary Disease (COPD) risk factors mortality surveillance. Also, the course includes tobacco health effects, diet, global changes in diet and unhealthy diet side effects, physical inactivity alcohol consumption, metabolic risk factors, glucose salt cholesterol, over weight obesity, Body Mass Index (BMI), World Health Organization (WHO) global targets reducing risk factors autoimmune disorders and chronic degenerative disorders, and PH and health care Gerontological Health/Illness Behavior.

Equivalent Course(s)

None

Course Name	Health Services Administration	Credit Hours	3 (3, 0)
Course Code	MPH 5202	Prerequisite(s)	None

Course Description

This course includes health services administration issues and priorities for Pakistan, traditional issues and challenge, introduction to systems, client orientation, process Aanalysis, problem identification, evidence-based decision making, and use of Health Management Information Systems (HMIS) in Health Sector Management (HSM). Also, it includes supportive supervision and leadership capacity building in Human Resource management, competencies and job description, challenge resolution techniques, staff motivation and performance appraisal, functional and task analysis, Monitoring & Evaluation M & E, financial management, budgeting and analysis in HSM and Logistics Cycle, and tools for quality Assessment & Microeconomics. In addition, Pakistan & Global health systems, health economics, managed care and health insurance, marketing in health care and patient safety, hospital administration, strategic planning, economic evaluation, operations management, Organizational Behavior (OB) , accounting & control strategy determination, information systems, negotiations and communication health policy and payment, and health services administration a tool for optimal Public Health outcomes are discussed.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	Infectious Diseases	Credit Hours	3 (3, 0)
Course Code	MPH 5203	Prerequisite(s)	None

Course Description This course deals with introduction to Infectious Diseases (ID): concepts & strategies Epidemiology of ID; basic concepts Surveillance Outbreak Investigation Polio Eradication; Infectious diseases of PH importance; Immunization preventable diseases; seasonal diseases; endemic diseases; Zoonotic diseases; diseases of global importance, new challenges, and strategies; Biological principles for development of disease prevention and control or management programs; including immunology Burden of ID; Early Warning System; and Epidemiology of Genetics and its role in ID.

Equivalent Course(s) None

Course Name	Research Methodology	Credit Hours	3 (3, 0)
Course Code	MPH 5205	Prerequisite(s)	None

Course Description This course includes critical reading of a scientific paper; definition of research; importance of research in PH; literature search; proposal writing; study design; sampling techniques; inclusion and exclusion criteria; methodology- choosing the statistical techniques; reference writing, abstract writing, and title writing for the proposals; basic concepts of social and medical anthropology; understand published research and design research; trials; data collection; and data analysis. Also, the course includes concepts and Methods of Qualitative Research; difference between Qualitative and Quantitative Research; sampling and selecting sampling strategy; sample structure; introduction to alternative data; and conducting qualitative analysis, narrative analysis and thematic analysis, and secondary data analysis of existing data sets.

Equivalent Course(s) BIO 5101

Course Name	Applied Health Communication	Credit Hours	3 (3, 0)
Course Code	MPH 5206	Prerequisite(s)	None

Course Description Health Communication is an essential discipline within the larger realm of Health Promotion. Applied Health Communication is an introductory course for public health students and professionals to enable them achieve the goals of their health promotion programs. The course familiarizes its audience to the fundamental principles, as well as, the practical application of various approaches and strategies used in health communication.

Equivalent Course(s) None

6.2.1 Master of Public Health (MPH)

Course Name	Nutrition & Health	Credit Hours	3 (3, 0)
Course Code	MPH 5204	Prerequisite(s)	None

Course Description

This course deals with human nutrition in growth and health; nutritional requirements in physiological states; stress, adolescents, Pregnancy, and Lactation; growth and nutritional status of children; field techniques and anthropometry, growth charts, nutritional prescription for mothers health, pregnancy and lactation, Breast Feeding (BF) Practices, Promotion and support of BF, Malnutrition, Marasmus, Protein Energy Malnutrition (PEM), and Kwashiorkor Micronutrient deficiencies. Also, the course discusses nutrition during special circumstances, nutrition communication skills and counseling, nutritional & social rehabilitation, Monitoring & Evaluation (M & E) of nutrition intervention programs, Expanded Program for childhood illnesses and Nutrition, Insulin Dependent Diabetes (IDD) control program, nutrition for children in special situations, poverty war natural calamities and Human Immunodeficiency Virus (HIV)/ Acquired Immune Deficiency Syndrome (AIDS), food safety, and storage and preservation of foods. In addition, the course discusses nutrition policy and interventions, interaction of nutritional factors with genetic determinants of disease, infectious agents, nutritional influence on disease, mental and physical consequences of malnutrition, nutritional determinants of blood lipid, molecular mechanisms of diabetes and obesity, regulation of macromolecular nutrients, atherosclerosis and thrombosis, and Anorexia and Fashion world.

Equivalent Course(s)

None

Course Name	Demography	Credit Hours	3 (3, 0)
Course Code	MPH 5301	Prerequisite(s)	None

Course Description

This course deals with population dynamics: Static & dynamic measures of populations; population and health; Demographic perspective and equations, sources of population data, features of population pyramids, concepts and theories of demographic transition, world population growth patterns and population momentum; mortality and its measures global burden of diseases; fertility; natural increase and reproduction; comparison of characteristics of Pakistan, region and first world countries; migration and urbanization; population, poverty and politics; slam & family planning; population growth and aging; population policy and public health policy; and resource allocation on need assessment of population distribution pyramid across nations.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	Maternal & Child Health	Credit Hours	3 (3, 0)
Course Code	MPH 5306	Prerequisite(s)	None

Course Description

This course includes concepts of reproductive health introduction to Maternal & Child Health (MCH), Historical background of Reproductive Health (RH), Life course perspective to Reproductive Health International Conference on Population & Development (RHICPD), post International Conference on Population & Development (ICPD), Beijing + 10 Safe Motherhood and Continuum of Care Reproductive behavior in Pakistan Contraception, abortion as a PH issue, antenatal & obstetrical care models, measurement of maternal mortality ratio & rates, Emergency Obstetric Care (EmOC), Basic Obstetric Care (BOC) Unmet obstetrical need, delays in obstetrical care, Integrated approach to newborn care, RH needs of special populations, RH issues of adolescents, young adults and men, role of males in Safe Motherhood, cancers of reproductive tract, Sexually Transmitted Infections (STIs) etc. cancers of breast, HIV/AIDS, and Health systems issues. Also, the course includes role of Primary Health Care (PHC), district health system and tertiary care hospital in RH, evidence-based RH interventions Quality of care in RH, integrated approach to provision of RH services, determinants of Maternal Mortality (MM), Socio-economics of RH care, data sources in RH, optimal health for the fetus, newborn and the child, trends in survival, morbidity, nutritional and environmental factors, immunizations, access to health care and health policies, Injuries and disability, introduction to integrated child health program, and neonatal survival.

Equivalent Course(s)

None

Course Name	Medical Ethics & Law	Credit Hours	3 (3, 0)
Course Code	MPH 5307	Prerequisite(s)	None

Course Description

This course includes introduction to Medical Ethics (ME) and Medical legislation, codes & oaths, normative principles, concepts of health & disease, physician patient relationship, limiting procreation, human experimentation, genetics and reproductive technologies, to regulate the practice of medicine. Ethical issues in organ transplantation and Psychiatry, health care delivery and resource allocation, paternalism, informed consent, competency, confidentiality, abortion, maternal-fetal issues, end-of-life decisions, death and dying, physician-assisted suicide, euthanasia, research on human subjects, objectivity and bias in medical research, animal research, health care reform, social justice and health care, organ donation and procurement, health care regulation, ethics committees, uncooperative patients, unfair system and pain control. In addition, the course discusses Dogmatism; situation ethics; extreme relativism; defensive postures or other untenable approaches; moral, philosophical, and social issues in medicine. In the planning for the care of the patient, the increasing awareness of human rights and changing moral principles of the community at large has made it mandatory. This course is an attempt towards improving the behavior of the learners and their sense of accountability to the public.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	Thesis I	Credit Hours	3 (3,0)
Course Code	MPH 5309	Prerequisite(s)	None

Course Description

This course includes introduction to public health systems research is a vital element that the Master of Public Health (MPH) program at SZABIST boosts. This will conceptualize the research experience and revamp it into a scientific report. This will complete the requirement for the fourth session of MPH program. By completing their thesis MPH students will demonstrate their understanding of core competencies through successful application of core knowledge and principles, critical thinking and analytic reasoning skills.

Equivalent Course(s)

None

Course Name	Health Promotion	Credit Hours	3 (3, 0)
Course Code	MPH 5302	Prerequisite(s)	None

Course Description

This course deals with risk transition Ottawa Charter Adelaide, Sundsväl, Jakarta and Mexico, Bangkok conferences; Life course perspective; World Health Report; health perspectives and reflections of health as a continuum; approaches to Health Education Orientations for health promotion; evidence-based Health Promotion and Planning Principles; HP Hierarchy of evidence; Outcome model; Ecological Models Community theories; and diffusion of innovations. Also, it includes interpersonal social learning, cognitive theory, individual stages of change model, health belief model, consumer information processing model, social marketing logic model health principles of effective communication, message HEALTHCOMS 5 step methodology, CDC's Health Communication Wheel, and Health literacy.

Equivalent Course(s)

None

Course Name	Health Policy	Credit Hours	3 (3, 0)
Course Code	MPH 5401	Prerequisite(s)	None

Course Description

This course includes introduction to health policy and planning; policy perspectives macro and micro Level and their comparison impact of other National policies on health system devolution Plan; past to present health sector reforms; role of stakeholders and stakeholder analysis; policy versus planning; role of International commitments on health policies Millennium Development Goals(MDGs); Research and Policy; sustainability issues; Health Sector performance as a determinant of National Health Policy; evidence-based policy making; advocacy Policy and Politics; and Leadership and Policy.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	International Health	Credit Hours	3 (3, 0)
Course Code	MPH 5402	Prerequisite(s)	None

Course Description

This course includes the relationship of age, income, resources, health spending, literacy, etc.; to health and disease ; overview of health indicators such as infant mortality, incidence, prevalence, quality of life, and comparison of these indices among developed and developing countries; Cross-cultural health beliefs/practices; health problems specific to developing countries; lifestyle diseases of developed world; infectious and tropical diseases; effects of government and private sector on health status; Traditional/alternative medical practices; Geographic, cultural, environmental factors in disease/mortality occurrence; appropriate technology/technology transfer; ethics of international health program evaluation and geographic information systems health equity and human rights, in relation to population health in developing countries; understand major issues in population and global health; the tools to examine evidence related to program effectiveness of undertaking population health interventions around the world political and ethical context; and NGOs and private sector for improvement of health systems around the world particularly in middle & lower-income countries.

Equivalent Course(s)

None

Course Name	PPP & NGO Management	Credit Hours	3 (3, 0)
Course Code	MPH 5403	Prerequisite(s)	None

Course Description

This course builds concepts of Non-Governmental Organization (NGO) management & Public Private Partnership (PPP) structure of program approach & financial issues; management & fund raising; Basics of PPP and ethics of PPP; cross sector collaboration; Vision, Mission, strategies values, accountability, team work, programs and project of NGO.; fund raising and running an NGO; financial policies & accountability; sustainability & capacity building; WHO & global PPP; finances for social business opportunities; legal formations of organizations in the non-profit-sector; structural fundamentals identification of purpose and stakeholders of NGOs; organizational governance in different types of entity in the non-profit-sector; Historical & basic values of leading world religions, their role on state authority, economy and NGO work;; and shared governance and conceptual tools for assessing favorable partnerships.

Equivalent Course(s)

None

6.2.1 Master of Public Health (MPH)

Course Name	Thesis II	Credit Hours	3 (3, 0)
Course Code	MPH 5409	Prerequisite(s)	None

Course Description

This course includes introduction to public health systems research is a vital element that the Master of Public Health (MPH) program at SZABIST boosts. This will conceptualize the research experience and revamp it into a scientific report. This will complete the requirement for the fourth session of MPH program. By completing their thesis MPH students will demonstrate their understanding of core competencies through successful application of core knowledge and principles, critical thinking and analytic reasoning skills.

Equivalent Course(s)

None

6.2 Masters

6.2.2 Master of Science in Biosciences (MS-Biosciences)

Students enrolled in Master of Science in Biosciences (MS-Biosciences) program are required to complete 8 courses with a minimum of 30 credit hours, within five (5) years to become eligible for obtaining the MS degree in Biosciences. The break-up of 30 courses is as follows:

- 4 Compulsory Courses (12 Credit Hours)
- 4 Elective Courses²⁹ (12 Credit Hours)
- 1 Thesis / 2 additional electives instead of thesis (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
BIO 5101	Advanced Research Methodology	211
BIO 5102	Biostatistics	211
Spring Semester		
BIO 5201	Molecular Genetics	212
BIO 5202	Techniques in Biomolecules Analyses	212
Second Year		
Fall Semester		
BIO 5xxx	Elective-I	263
BIO 5xxx	Elective-II	263
BIO 5xxx	Thesis / Elective-V	263
Spring Semester		
BIO 5xxx	Elective-III	263
BIO 5xxx	Elective-IV	263
BIO 5xxx	Thesis / Elective-VI	263

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

6.2.2 Master of Science in Biosciences (MS-Biosciences)

Course Name	Advanced Research Methodology	Credit Hours	3 (3,0)
Course Code	BIO 5101	Prerequisite(s)	None

Course Description

This course is aimed to provide a comprehensive description related to research and its methods. Topics include definition and value of research, scientific methods of research and its special features, classification of research, how to select a topic for research? theory and research, concepts, variables and types of variables, hypothesis testing and characteristics, review of literature, conducting a systematic literature review, theoretical framework, problem definition and research proposal, the research process, ethical issues in research, measurement of concepts, criteria for good measurement, research design, tools for data collection, sample and sampling, probability and non-probability sampling, data analysis tools, data presentation, experimental research, use of secondary data, research report writing, and referencing.

Equivalent Course(s)

MPH 5205, MS 5239

Course Name	Biostatistics	Credit Hours	3 (2,1)
Course Code	BIO 5102	Prerequisite(s)	None

Course Description

The objective of this course is to equip students with current tools and techniques to analyze and interpret data. Topics include the collection, classification, and presentation of descriptive data; the rationale of estimation and hypothesis testing; analysis of variance; analysis of contingency tables; correlation and regression analysis; multiple regression, logistic regression, and the statistical control of confounding; sample size and power considerations; and survival analysis. Special attention is directed to the ability to recognize and interpret statistical procedures in articles from the current literature. This course gives students the skills to perform, present, and interpret basic statistical analyses using the SPSS statistical package.

Equivalent Course(s)

MS 5204, MPH 5105, BA 5305

6.2.2 Master of Science in Biosciences (MS-Biosciences)

Course Name	Molecular Genetics	Credit Hours	3 (2,1)
Course Code	BIO 5201	Prerequisite(s)	None

Course Description In this course, students will be introduced to the new and current developments in the field of molecular biology and genetics. Topics include: genome structure and function, chromosomes and chromatin structure, genome organization, genetic and physical mapping, gene regulation, gene and RNA splicing, gene cloning, control of gene expression, molecular and genetic diagnosis of diseases, genetics of host resistance, gene therapy, human genome project, developmental genetics, cancer genetics, immunogenetics, neurogenetics, and population genetics.

Equivalent Course(s) None

Course Name	Techniques in Biomolecules Analyses	Credit Hours	3 (2,1)
Course Code	BIO 5202	Prerequisite(s)	None

Course Description In this course, students are introduced to various tools and techniques that are currently applied for the analyses of biomolecules. Techniques like nuclear magnetic resonance, mass spectrometry, ultraviolet and infrared spectroscopy, genome sequencing and proteome analysis, chromatographic separation of molecules are included in this course. In addition, various visits to high profile research labs will be organized to give proper demonstration and experience to the students.

Equivalent Course(s) None



Department of Education

7.0 Master of Science and PhD

7.1.1 Masters of Arts in Education (EDU)

Students enrolled in Master of Arts in Education (MA EDU) are required to complete 20 courses and an Action Research Project of total 63 Credit Hours, within five (5) years. The break-up of 63 credit hours is as follows:

- 16 Compulsory Courses (48 Credit Hours)
- 4 Electives Courses³⁰ (20 Credit Hours)
- One Action Research Study (3 credit hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
EDU 5103	Foundations of Education	215
EDU 5104	Leadership and Management in Educational Context	215
EDU 5105	Teacher Education	215
EDU 5101	Classroom Management	216
EDU 5102	Effective Communication in Education	216
Spring Semester		
EDU 5302	Educational Psychology	216
EDU 5203	Ethics and Professional Practices in Education	217
EDU 5202	Curriculum Development and Planning	217
EDU 5201	Critical Thinking and Reflective Practices	217
EDU 5204	School, Community and Teacher	218
Second Year		
Fall Semester		
EDU 5xxx	Elective-I	264
EDU 5302	Elective-II	264
EDU 5303	Research Methods and Techniques	218
EDU 5305	Testing and Evaluation	218
EDU 5304	Sociology of Education	219
EDU 5301	Educational Policy and Politics	219
Spring Semester		
EDU 5xxx	Elective-III	264
EDU 5xxx	Elective-IV	264
EDU 5402	International Development in Education	220
EDU 5401	ICT in Education	220
EDU 5408	Action Research Project	221

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

7.1.1 Masters of Arts in Education (MA EDU)

Course Name	Foundations of Education	Credit Hours	3 (3,0)
Course Code	EDU 5103	Prerequisite(s)	None

Course Description

This course will focus on the ideological, philosophical, psychological, socio-economic and historical foundations of education. The major focus will be on developing an understanding of the participants how different philosophical theories affect education. The course will also include historical development of education of the Pakistan. Emphasize will be given on analyzing various sociological, political, economic and ideological forces that influence the process of education in our culture context. This course will also be used to develop the ability in prospective teachers to interpret knowledge within its historical, philosophical, ideological, and social contexts, which will lead to produce critical perspectives on education both within, and outside of, schools.

Equivalent Course(s)

None

Course Name	Leadership and Management in Educational Context	Credit Hours	3 (3,0)
Course Code	EDU 5104	Prerequisite(s)	None

Course Description

This course aims to provide students with the opportunity to explore issues linked to effective educational leadership and management. It intends to improve the quality and effectiveness of school management by introducing current methods of educational administration, with a focus on important issues such as cultural influence, power, conflict, time management, and other problems associated with management of teaching and learning. Participants are going to audit their professional skills with an ongoing reflective practice and will identify particular areas for personal and professional development.

Equivalent Course(s)

None

Course Name	Teacher Education	Credit Hours	3 (3,0)
Course Code	EDU 5105	Prerequisite(s)	None

Course Description

This course introduces participants to the relevant theories, current issues, and the prevalent practices in teacher development. It focuses on the various stages of pre-service and in-service course design to help participants arrive at an informed engagement with teacher training theory and practice. This involves taking participants from needs analyses to evaluation as well as introducing the concept of supervision, mentoring and observations of classroom practice

Equivalent Course(s)

None

7.1.1 Masters of Arts in Education (MA EDU)

Course Name	Classroom Management	Credit Hours	3 (3,0)
Course Code	EDU 5101	Prerequisite(s)	None

Course Description In this course, prospective teachers will be encouraged to explore their own beliefs about teaching and learning to arrive at a philosophy of classroom management that places learning as an ultimate goal. Prospective teachers will be given the chance to explore curricular concerns of what to teach and how to teach it and to view lesson planning as the consequence of these decisions. They will also study research and best practices on differentiation of instruction, classroom structures, routines, procedures, and community building.

Equivalent Course(s) None

Course Name	Effective Communication in Education	Credit Hours	3 (3,0)
Course Code	EDU 5102	Prerequisite(s)	None

Course Description Leadership competence is the product of communication competence and the communication discipline has experienced a great deal of change and growth over the last fifty years. This course will act as an invitation to join in this debate about the nature, functions, and processes underlying leadership and human communication. It will explore the connection between communication and leadership. Particularly, we will examine how the field of communication contributes to effective teaching and learning. In addition, to adequately understanding communication theory one must do practical work in communication as well. Because leadership is a symbolic process and leaders are made, not born, this class will integrate both theory and practice.

Equivalent Course(s) None

Course Name	Educational Psychology	Credit Hours	3 (3,0)
Course Code	EDU 5302	Prerequisite(s)	None

Course Description The purpose of this course is to develop learner's insight. Its unique approach helps students teachers to understand different psychological concepts by encouraging them to examine their own learning and then showing them how to apply these concepts as teachers. This course concentrates on core concepts and principles. It gives readers an in-depth understanding of the central ideas of educational psychology.

Equivalent Course(s) None

7.1.1 Masters of Arts in Education (MA EDU)

Course Name	Ethics and Professional Practices in Education	Credit Hours	3 (3,0)
Course Code	EDU 5203	Prerequisite(s)	None

Course Description	This course prepares teachers for engagement with ethical issues, policies and practices related to the teacher as a professional and a manager. It will help to develop an understanding of the role of continued professional learning and its implications for motivating staff for their professional development and self-directed learning. It will further explore how the leaders' and teachers' professional development ultimately benefits and effects improved student outcomes. It will help educational leaders and teachers to understand and engage with ethical issues, policies and practices related to the teacher as a professional, and to critically analyze their own approach to professionalism, reason through problematic situations, and engage in ongoing professional learning.
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Equivalent Course(s)	None
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Course Name	Curriculum Development and Planning	Credit Hours	3 (3,0)
Course Code	EDU 5202	Prerequisite(s)	None

Course Description	The course is designed to develop the theoretical and practical knowledge of participants about issues in curriculum development. The course intends to examine various approaches to curriculum development together with latest trends in curriculum innovation. Moreover, it will highlight the role of teachers in curriculum development and instruction and distinguish between curriculum assessment and evaluation. The course will also enable participants to design a new curricular unit on the basis of assessment by using an innovative strategy.
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Equivalent Course(s)	None
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Course Name	Critical Thinking and Reflective Practices	Credit Hours	3 (3,0)
Course Code	EDU 5201	Prerequisite(s)	None

Course Description	This course is aimed at introducing the participants to the concept of reflective practice as a critical process of inquiry and a means to reach new understandings of various disciplines. The reflective input aims to make participants critically reflect and evaluate their own practices and that of other practitioners. In the course, different levels, models and techniques of reflective practice will be discussed. Also, the effectiveness of the role of reflective practice in promoting individual and professional growth will be highlighted through the development of critical thinking skills. Moreover, the participants will interpret critical thinking as a way to acquire knowledge, improve established theories, and strengthen arguments. They will be able to use critical thinking to enhance work processes and improve social institutions. They will practice some of the most central and important skills of critical thinking, and focus on applying those strategies to understanding current issues, belief systems, and ethical positions. Further, through processes of critical inquiries participants will gather evidence of how to enhance the learning capabilities and achievement of their learners.
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Equivalent Course(s)	None
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Masters of Arts in Education (MA EDU)

Course Name	School, Community and Teacher	Credit Hours	3 (3,0)
Course Code	EDU 5204	Prerequisite(s)	None

Course Description	This course is designed to provide an opportunity to develop awareness about linkage among school, community and teacher for effective education program. Through this course the student have an exploration of interaction between teaching and learning within school and community. The course emphasized that how to experience the social contact with the community, and how to mobilize community for the development of the school. The course include a wider issue include culture, gender, special needs, equity and equality and collaborative working condition within the school and community. This course will provide an orientation for the process of socialization and social development. It's also emphasize on social factors which may affect education. This course have not only a theoretical perspective, it has some practical aspects as well like community work, health promotion activities, and promotion of healthy environment.
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Equivalent Course(s)	None
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Course Name	Research Methods and Techniques	Credit Hours	3 (3,0)
Course Code	EDU 5303	Prerequisite(s)	None

Course Description	This course is designed for students to prepare them to situate themselves as researching professionals and at the same time enhance their own professional practice. Students will engage in a critical analysis of different research work and relate it to their own context. The units provides students with the opportunity to engage with the research literature and to establish how different researchers techniques help improve the overall classroom situation.
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Equivalent Course(s)	MS 5137
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Course Name	Testing and Evaluation	Credit Hours	3 (3,0)
Course Code	EDU 5305	Prerequisite(s)	None

Course Description	This course is designed to develop prospective teachers towards adequate knowledge of the concept of evaluation and test construction during the course. The teacher will develop skills to construct classroom based tests to evaluate students learning outcomes. The learner will also be able to report the result to different stake holders in a professional manner.
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Equivalent Course(s)	None
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Masters of Arts in Education (MA EDU)

Course Name	Sociology of Education	Credit Hours	3 (3,0)
Course Code	EDU 5304	Prerequisite(s)	None

Course Description

While schools are certainly sites of teaching and learning, they are also complex social organizations that reflect, are influenced by, and themselves shape broader society. To understand these processes, it is important to consider relationships among actors within schools – teachers, students, their classmates, their parents, coaches, counselors, administrators and other school staff – as well as the impacts of local, state, and federal policies on the social organization of schools. The sociological perspective can be useful to examine patterns of inequality in what students learn, how long they stay in schooling, and what happens to them as they enter adulthood. These patterns may vary by where they live, the socioeconomic situation of their families, their racial-ethnic background, their citizenship status, their gender, and other dimensions of their personal background. Additionally, these background characteristics are often tied to the quality and social organization of the schools that students attend, further influencing the structure of educational opportunities they have available to them. Finally, the course will examine cross-national differences in education and educational values in relation to individual and societal life course outcomes such as career choice, marriage and family, earned income, and economic competitiveness.

Equivalent Course(s)

None

Course Name	Educational Policy and Politics	Credit Hours	3 (3,0)
Course Code	EDU 5301	Prerequisite(s)	None

Course Description

This course explores and furthers understanding of reforms in education over the past two decades in Pakistan and South Asia. Through academic readings, the role of educational policies over the years will be analyzed and examined against the backdrop of various political policies in the country. It will also examine how and why particular policy discourses have become accepted in recent years. The course will further consider the implications of policy reforms for practices within educational organizations. The design of this course reflects the view that reforms cannot be comprehended without considering the social, political, economic and historical contexts in which they arise.

Equivalent Course(s)

None

Master of Arts in Education (MA EDU)

Course Name	International Development in Education	Credit Hours	3 (3,0)
Course Code	EDU 5402	Prerequisite(s)	None

Course Description

It is important to understand education against the backdrop of international development, global conflicts and socio economic issues concerning poverty, inequality and injustice. Such issues conspicuously affect teaching and learning. The course looks at the complex issues associated with providing education to all in the world coupled with the ever increasing concern of education disparity in Pakistan. Moreover, the historic aspects of education are explored along with philosophical and political movements so students understand the importance of education's potential. The course also critically analyses the factors that impede the growth and development of meaningful education in the country and examines areas which are necessary for sustainable education development. The crucial roles played by teachers, students, administrators and other stakeholders will be part of the crucial discussions in the course.

Equivalent Course(s)

None

Course Name	ICT in Education	Credit Hours	3 (3,0)
Course Code	EDU 5401	Prerequisite(s)	None

Course Description

Information and Communication Technologies (ICTs) in Education is a broad and constantly changing subject. This course will prepare teachers to understand, use and apply a range of technologies and platforms in teaching and learning, in line with international standards. With the changing face of technologies and related application, this course will primarily focus on using technologies for learning 'how to learn' to cope with change. It will provide opportunities to prospective teachers to collaborate with students, educators, peers, parents, and global community using digital tools and resources to support learning, success and innovation. Teachers-in-training will engage with the design and creation of exciting, intellectually challenging and authentic learning environments in which ICT changes not only what students learn but also how they learn, as we move forward in the 21st century. Trainees in this course will examine how ICT might be used to both enhance and transform learning.

Equivalent Course(s)

None

Masters of Arts in Education (MA EDU)

Course Name	Action Research Project	Credit Hours	3 (3.0)
Course Code	EDU 5408	Prerequisite(s)	None

Course Description The purpose of this course is to provide teachers with the knowledge and skills to integrate Action Research as a teaching and problem solving methodology, as well as teaching students to use Action Research to achieve lesson objectives.

Action Research is a specific process for problem solving, verification, and discovery. The process can be used by an individual, teacher or student, but experience indicates the process works best through cooperation and collaboration. This course will be taught by employing the attributes of the Action Research process, which includes: Problem definition, A plan to answer or resolve the problem, Use of objective data, Collection of data, Data recording, and Reporting.

Equivalent Course(s) None

7.1 Master of Science and PhD

7.1.3 Doctor of Philosophy in Educational Leadership and Management (PhD ELM)

Students enrolled in the Doctor of Philosophy in Educational Leadership and Management (PhD ELM) program are required to complete a total of 48 credit hours within five (5) years. The following is the break-up of the 48 credit hour courses:

- 2 Compulsory Courses (6 Credit Hours)
- 3 Elective Courses³² (6 Credit Hours)
- 1 Independent Research Studies (3 Credit Hours)
- 1 Dissertation (30 Credit Hours)

Course Code	Course Title	Page #
PhD		
First Year		
Fall Semester		
ELM 6101	Advance Research Methods and Techniques-I (Qualitative)	226
ELM 6102	Advance Research Methods and Techniques-II (Quantitative)	226
ELM 6xxx	Elective-I	265
Spring Semester		
ELM 6xxx	Elective-II	265
ELM 6xxx	Elective-III	265
ELM 6108	Independent Research Study-I	-
Second Year		
Fall Semester		
ELM 6xxx	Dissertation (Proposal)	-
Spring Semester		
ELM 6xxx	Dissertation	-
Third Year		
Fall Semester		
ELM 6xxx	Dissertation	-
Spring Semester		
ELM 6xxx	Dissertation	-

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

32 List of Electives is given in Appendix B.

7.1.3 Doctor of Philosophy in Educational Leadership and Management (PhD ELM)

Course Name	Advance Research Methods and Techniques-I (Qualitative)	Credit Hours	3 (3,0)
Course Code	ELM 6101	Prerequisite(s)	None

Course Description This course develops critical and practical understandings for evaluating and conducting research from five qualitative research traditions (narrative research, grounded theory, phenomenology, ethnography and case studies). It enables students to develop; ethically and procedurally sound qualitative research proposal for qualitative research designs, collect, analyze and interpret qualitative, textual, and other non-traditional forms of data obtained through various tools and sources.

Equivalent Course(s) SS 6313, SS 5229, ELM 5102

Course Name	Advance Research Methods and Techniques-II (Quantitative)	Credit Hours	3 (3,0)
Course Code	ELM 6102	Prerequisite(s)	None

Course Description In this course, concepts, techniques and applications of quantitative methods for decision making are introduced. Topics include; forecasting, regression analysis, analysis of variance, statistical decision theory, utility theory, linear programming, and waiting lines. The course incorporates computer software packages.

Equivalent Course(s) SS 5122, SS 6105, ELM 5103

7.1 Master of Science and PhD

7.1.2 Master of Science in Educational Leadership and Management (MSELM)

Students enrolled in the Master of Science in Educational Leadership and Management (MSELM) program are required to complete 30 credit hours within five (5) years. The break-up of 30 credit hour courses is as follows:

- 4 Compulsory Courses (12 Credit Hours)
- 2 Elective Courses³¹ (6 Credit Hours)
- 2 Independent Research Studies (IRS) (6 Credit Hours)
- 1 Thesis/2 additional electives instead of thesis (6 Credit Hours)

Course Code	Course Title	Page #
First Year		
Fall Semester		
ELM 5101	Leadership and Management in Educational Contexts	223
ELM 5102	Advance Research Methods and Techniques (ARMT)-I (Qualitative)	223
ELM 5103	Advance Research Methods and Techniques (ARMT)-II (Quantitative)	223
ELM 5xxx	Elective-I	264
Spring Semester		
ELM 5201	Curriculum Development and Planning	224
ELM 5xxx	Elective-II	264
ELM 5108	Independent Research Study-I	-
ELM 5208	Independent Research Study-II	-
Second Year		
Fall Semester		
ELM 5xxx	Thesis/Elective-III & Elective-IV	264

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

7.1.2 Master of Science in Educational Leadership and Management (MSELM)

Course Name	Leadership and Management in Educational Contexts	Credit Hours	3 (3,0)
Course Code	ELM 5101	Prerequisite(s)	None

Course Description

This course aims to provide students with the opportunity to explore issues linked to effective educational leadership and management. It intends to improve the quality and effectiveness of school management by introducing current methods of educational administration, with a focus on important issues such as cultural influence, power, conflict, time management, and other problems associated with management of teaching and learning. Participants are going to audit their professional skills with an ongoing reflective practice and will identify particular areas for personal and professional development.

Equivalent Course(s)

None

Course Name	Advance Research Methods and Techniques-I (Qualitative)	Credit Hours	3 (3,0)
Course Code	ELM 5102	Prerequisite(s)	None

Course Description

This course develops critical and practical understandings for evaluating and conducting research from five qualitative research traditions (narrative research, grounded theory, phenomenology, ethnography and case studies). It enables students to develop; ethically and procedurally sound qualitative research proposal for qualitative research designs, collect, analyze and interpret qualitative, textual, and other non-traditional forms of data obtained through various tools and sources.

Equivalent Course(s)

SS 6313, SS 5229, ELM 6101

Course Name	Advance Research Methods and Techniques-II (Quantitative)	Credit Hours	3 (3,0)
Course Code	ELM 5103	Prerequisite(s)	None

Course Description

In this course, concepts, techniques and applications of quantitative methods for decision making are introduced. Topics include: forecasting, regression analysis, analysis of variance, statistical decision theory, utility theory, linear programming, and waiting lines. The course incorporates computer software packages.

Equivalent Course(s)

SS 5122, SS 6105, ELM 6102

7.1.2 Master of Science in Educational Leadership and Management (MSELM)

Course Name	Curriculum Development and Planning	Credit Hours	3 (3,0)
Course Code	ELM 5201	Prerequisite(s)	None

Course Description

This course aims at giving participants a theoretical as well as a practical insight into the principles that guide curriculum development. It discusses and analyzes in detail the main elements of a curriculum, basic issues related to designing a curriculum, factors that affect the process of curriculum development, and its implementation. Moreover, it reviews the models which have been the mainstays of curricular philosophies all over the world, and builds awareness about various curriculum designs that form the backdrop of education. Besides, it considers the impediments to curricular innovation and change, and look at practical ways to overcome the hurdles including consideration for professional development. The fair development of curricular knowledge and its principles will guide the participants to critique and evaluate a curriculum they practice and also plan and develop a curricular unit to see the link between theory and practice.

Equivalent Course(s)

None



International Programs

8.0 Bachelor

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Students enrolled in the BABS (Honors) program are required to complete 26 courses with 78 Credit Hours. Upon completion of the required courses at SZABIST, students can proceed for the Final Year to the University of South Wales to obtain their Bachelor (Honors) degree

Course Code	Course Title	Page #
BABS		
First Year		
Fall Semester		
BA 1101	Introduction to Accounting	229
BA 1102	Microeconomics	229
BA 1103	Introduction to Computers	229
BA 1104	Personal Management	229
BA 1206	Oral Communication and Presentation Skills	230
BA 1204	Math for Business	230
Spring Semester		
BA 1201	Financial Accounting	230
BA 1202	Macroeconomics	231
BA 1203	Management Principles	231
BA 1105	English Writing Skills	231
BA 2305	Statistics and Mathematics for Business	231
BA 2312	Human Behavior	232
Summer Semester		
BA 2301	Introduction to Business Finance	232
BA 2302	Graphic Design in Multimedia Presentations	232
Second Year		
Fall Semester		
BA 2303	Marketing Principles	232
BA 2304	Managerial Accounting	233
BA 2306	Social Sciences	233
BA 2403	Business Ethics	233
BA 3504	Organizational Behavior	234
BA 1207	Introduction to Logic	234
Spring Semester		
BA 3505	Quantitative Skills	234
BA 3601	Financial Management	235
BA 3602	Marketing Management	235
BA 4704	Management Information Systems	235
BA 4721	Advertising	236
BA 4801	Law and Taxation	236

All courses may not be offered every year. Alternate courses may be substituted as and when required.

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Introduction to Accounting	Credit Hours	3 (3,0)
Course Code	BA 1101	Prerequisite(s)	None

Course Description This course covers the purpose and nature of accounting, forms of business enterprises, accounting information users, Generally Accepted Accounting Principles, accounting equation, accounting process, the accounting cycle, ledgers and entries, accounting for receivables, inventory and depreciation.

Equivalent Course(s) AF 1104, EN 1103

Course Name	Microeconomics	Credit Hours	3 (3,0)
Course Code	BA 1102	Prerequisite(s)	None

Course Description Microeconomics studies how the individual parts of the economy, the households and the firms, make decisions to allocate limited resources. This course is based on a comprehensive study of the market structures, product markets and resource markets. It also deals with application of demand and supply, cost analysis and factors of production

Equivalent Course(s) SS 1105, BA 5302, AF 2405, EN 1205, BST 1105

Course Name	Introduction to Computers	Credit Hours	3 (1,2)
Course Code	BA 1103	Prerequisite(s)	None

Course Description This course introduces fundamental computer concepts, including basic functions and operations of the computer. Course topics include; identification of hardware, operating system, application software, programming languages, files and data basics, data communication, networking basics, computer graphics, computer security and controls, MS Word, MS Excel, MS Access, MS Power Point, MS Project, internet browsers, databases and e-banking.

Equivalent Course(s) BA 1108, CSC 1104, BIO 1104, AF 1102, EN 1102, BST 1102

Course Name	Personal Management	Credit Hours	3 (3,0)
Course Code	BA 1104	Prerequisite(s)	None

Course Description This course teaches students to discover themselves and make positive changes to achieve greater effectiveness at work, and in personal and interpersonal relationship. Students learn the combination of factors such as personality, communication style, self-esteem, time management, conflict, negotiation and others that impact their personal effectiveness. They also learn methods, and techniques required to work effectively and confidently with others, using time management, negotiation and presentation skills with a positive mindset.

Equivalent Course(s) BA 1109, BA 5311, EN 1206, BST 1106

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Oral Communication and Presentation Skills	Credit Hours	3 (3,0)
Course Code	BA 1206	Prerequisite(s)	BA 1105

Course Description In this course student¹ learns the principles of a good presentation and has the opportunity to practice and experience these principles during this highly participative course. The course explores in detail, both verbal and non-verbal communication characteristics, and the importance of body-language expressions. Students are challenged through participative exercises with focus on active listening and observation techniques, that aim to make them competent in all facets of effective speech communication.

Equivalent Course(s) CSC 2101, ME 1101, AF 1203, EN 1106

Course Name	Maths for Business	Credit Hours	3 (3,0)
Course Code	BA 1204	Prerequisite(s)	None

Course Description The aim of this course is to prepare students to solve economic and managerial problem through mathematical concepts. This course is covered in four parts, first part is based on systems of linear equations and its solutions provide preliminary concept, construction of linear equations, graphical interpretation of data, systems of linear equations and solutions, introduction to matrix algebra, determinants, Cramer's rule & inverse method to solve system of linear equations. The second part develops the concept of linear and nonlinear functions and their application, and linear programming. The third part provides mathematics for finance, which covers simple, and compound interest rate computations and present and future annuity calculations. The last part of the course provides differentiation of basic functions, higher order differentiation, optimization of functions, definite and indefinite integration, and applications of integration.

Equivalent Course(s) BIO 1107, AF 1102, EN 1101

Course Name	Financial Accounting	Credit Hours	3 (3,0)
Course Code	BA 1201	Prerequisite(s)	BA 1101

Course Description This course includes accounting for merchandise business, classified balance sheet, simple and multiple income statement, design of accounting system, accounts receivable, notes receivable, inventories, cost of goods sold, liabilities, corporation and measuring cash flow statements. Also, MS Excel is used and necessary accounting software is introduced.

Equivalent Course(s) BA 5301, AF 1201

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Macroeconomics	Credit Hours	3 (3,0)
Course Code	BA 1202	Prerequisite(s)	BA 1102

Course Description

This course introduces key economic indicators, role of government in an economy, measurement of gross domestic product, components of aggregate demand, consumption function and Keynesian multiplier, investment function, government intervention through monetary and fiscal policies, impact of government intervention on economic activity, inflation and unemployment, aggregate supply and demand, balance of payments and trade, public finance, growth, and development.

Equivalent Course(s)

BA 5402, SS 1205, AF 3505, EN 2303, BST 1204

Course Name	Management Principles	Credit Hours	3 (3,0)
Course Code	BA 1203	Prerequisite(s)	None

Course Description

This course introduces the basic concepts of management, evolution and emergence of management thought, management function, planning concepts, decision-making, organizing, staffing, leading, controlling, and future of management and society.

Equivalent Course(s)

BA 5303, BA 5419, AF 1106, EN 1204, BST 1101

Course Name	English Writing Skills	Credit Hours	3 (3,0)
Course Code	BA 1105	Prerequisite(s)	None

Course Description

This course covers comprehending problems and statements, developing arguments, and communicating ideas clearly and concisely. It also focuses on grammar, forms of punctuation, forms of speech, sentence and paragraph construction, composition, comprehension, writing styles, presentations, verbal communication skills, formal and informal presentations, interactive discussions, and role-playing.

Equivalent Course(s)

CSC 1102, MD 1122, SS 1116, BA 5317, BIO 1111, AF 1103, BST 1103

Course Name	Statistics and Mathematics for Business	Credit Hours	3 (3,0)
Course Code	BA 2305	Prerequisite(s)	BA 1204

Course Description

The course covers descriptive statistical tools and mathematical methods. Statistical tools consist of; frequency distribution, graphs, charts, mean, and variance, percentiles, correlation, and regression analysis. Mathematical methods consist of matrices, system of linear equations, differentiation and optimization, linear programming, and simplex method. The topics are taught in relation to their application in business and economics.

Equivalent Course(s)

BA 5305, BA 2305, BIO 1208, AF 2406, EN 2304

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Human Behavior	Credit Hours	3 (3,0)
Course Code	BA 2312	Prerequisite(s)	None

Course Description	This course covers the basics of psychological features of human behavior with applications in real life situations. In addition, the aspects of personal growth and understanding are also covered.
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Equivalent Course(s)	MD 2424, BA 2306, SS 2306, AF 2303, EN1104
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Course Name	Introduction to Business Finance	Credit Hours	3 (3,0)
Course Code	BA 2301	Prerequisite(s)	BA 1201

Course Description	This course covers the concepts of business environment, forms of business organization, overview of financial environment, cost markets, institutions and interest rates, analyses of financial statements, time value of money, sources of short-term and long-term finance, break even analysis, working capital management, valuation of financial securities (debt/equity) and introduction to capital budgeting.
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Equivalent Course(s)	BA 5401, AF 4703, EN 2301, BST 1203
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Course Name	Graphic Design in Multimedia Presentations	Credit Hours	3 (1,2)
Course Code	BA 2302	Prerequisite(s)	BA 3604

Course Description	This course introduces the computer system developed for graphics. It covers topics such as hardware and software components for multimedia production, basic computer operations, ergonomics, file management, scanning techniques, archiving capabilities, and utilization of the multimedia department server and internet connection. Software such as Adobe Photoshop, and Freehand are introduced.
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Equivalent Course(s)	BA 4842
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Course Name	Marketing Principles	Credit Hours	3 (3,0)
Course Code	BA 2303	Prerequisite(s)	BA 1203

Course Description	This course introduces the basic concepts of marketing, marketing environment, planning and research, market segmentation and targeting, consumer behavior, industrial marketing, product planning, product-mix, pricing, distribution, placement, promotional mix, and marketing in global scenarios.
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Equivalent Course(s)	BA 5404, AF 1206, EN 2305, BST 1205
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8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Managerial Accounting	Credit Hours	3 (3,0)
Course Code	BA 2304	Prerequisite(s)	BA 2301

Course Description

This course focuses on cost allocation, process costing systems and spoilage. Specific topics include relevancy of revenues and costs, cost allocation decisions (joint and byproducts), process costing systems, Factory overhead applied, Standard Costing; Setting of Standards, Analysis of Variance and Controlling and Costing Material.

Equivalent Course(s)

BA 5411, AF 2401, BST 1202

Course Name	Introduction to Social Sciences	Credit Hours	3 (3,0)
Course Code	BA 2306	Prerequisite(s)	None

Course Description

This is an interdisciplinary course combining the perspectives of two or more of the social and behavioral sciences (anthropology, economics, geography, history, political science, psychology and sociology) on the central issues in social science studies. This course explores the relationship between the social and behavioral sciences being studied. It reviews the application of the scientific method, compares theory and concepts, and reviews the different perspectives of the discipline being studied. This course is broad in nature and scope and provides the basis for further study in other various social and behavioral sciences.

Equivalent Course(s)

BA 2306, MD 1104, SS 2307, AF 2304, EN 1203

Course Name	Business Ethics	Credit Hours	3 (3,0)
Course Code	BA 2403	Prerequisite(s)	BA 1203

Course Description

This course introduces contemporary and controversial ethical issues faced by the business community. Topics include: moral reasoning, moral dilemmas, law and morality, equity, justice and fairness, ethical standards, and moral development. Upon completion, students would be able to demonstrate an understanding of their moral responsibilities and obligations as members of the workforce and society.

Equivalent Course(s)

AF 3503, EN 2402

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Organizational Behavior	Credit Hours	3 (3,0)
Course Code	BA 3504	Prerequisite(s)	BA 2312

Course Description This course covers the subject matter on three levels: individual, group and interpersonal, and organizational. At the individual level, the focus is to examine individual behavior and differences, learning, perception, personality, motivation, and stress. The group/ interpersonal level covers group and inter-group behavior, creativity, and team decision-making. It also includes power, conflict, leadership, and communication. At the organizational level, it reviews the basics of organizational culture, organizational change and development, structure, design, employment relationship, and career management.

Equivalent Course(s) BA 5207, AF 2305, EN 2306, BST 2XXX

Course Name	Introduction to Logic	Credit Hours	3 (3,0)
Course Code	BA 1207	Prerequisite(s)	

Course Description The course covers scope and laws of logic, deduction and induction, inferences, forms of discourse, emotive words, kinds of disputes and disagreements, rules and fallacies, classical (Aristotelian) logic, standard-form categorical syllogisms and testing, uniform translation, dilemma and enthymemes, and Mills' Methods of scientific investigation. Critical thinking skills and techniques are also introduced.

Equivalent Course(s) BA 5503, EN 2302, BA 1211

Course Name	Quantitative Skills	Credit Hours	3 (3,0)
Course Code	BA 3505	Prerequisite(s)	BA 3605, BA 1204

Course Description This course is an introduction to quantitative skills essentially required to business students. The course consists of several parts. First is related to arithmetic techniques like: numbers, exponents and roots, ratio and proportion, averages etc. and their usage in solving common problems. The second part consists of algebra, equations, and their applications in solving business problems. The third part comprises of coordinate geometry and combination of above parts. The fourth part covers graphical analysis and interpretation of the data. The fifth and last part consists of data sufficiency problems related to arithmetic, algebra and geometry.

Equivalent Course(s) None

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Financial Management	Credit Hours	3 (3,0)
Course Code	BA 3601	Prerequisite(s)	BA 2301

Course Description

Building upon the concepts already laid down in its pre-requisite, financial management helps students in exploring the depths of the relatively complex aspects of the financial world, with prime focus on the present value and opportunity cost of capital. This course covers topics such as nature, scope, and function of financial decision areas; objectives of financial management; financial forecasting; working capital management; valuation of stocks; valuation of fixed income securities; project cash flow analysis; capital budgeting and decision making; determination of the required rate of return via asset pricing models; dividend policy; debt policy; introduction to financial risk management; and derivatives and role of financial markets in Pakistan.

Equivalent Course(s)

BA 5105, AF 4702, BST 2302

Course Name	Marketing Management	Credit Hours	3 (3,0)
Course Code	BA 3602	Prerequisite(s)	BA 2303

Course Description

This course introduces the concept of customer and market-driven management. This course covers organizations' external and internal environment, strengths, weaknesses, opportunities and threats, marketing information system, buyer behavior analysis, segmenting, targeting and positioning strategies, product and pricing strategies, an in-depth study of strategy building by organizations with the help of case studies and a practical, hands-on learning experience of marketing management through close observations of marketing management at different levels in marketing channels.

Equivalent Course(s)

BA 5106, AF 2403, BST 2305

Course Name	Management Information Systems	Credit Hours	3 (3,0)
Course Code	BA 4704	Prerequisite(s)	BA 3604

Course Description

This course covers different information technology applications in business for efficient management of business operations by providing support to decision makers for strategic business decisions. The course examines various corporate frameworks for information management and their utility.

Equivalent Course(s)

BA 5403, AF 2402, BST 2304

8.1 Bachelor of Arts (Hons) in Business Studies (BABS)

Course Name	Advertising	Credit Hours	3 (3,0)
Course Code	BA 4721	Prerequisite(s)	BA 2303

Course Description This course introduces students to the principles and practices of contemporary advertising, marketing and public relations. In this course students explore these roles in the marketplace, the elements of a successful advertisement, advertising production, and tasks accomplished by media professionals while promoting products and service businesses.

Equivalent Course(s) None

Course Name	Law and Taxation	Credit Hours	3 (3,0)
Course Code	BA 4801	Prerequisite(s)	BA 1211

Course Description This course covers process of legislation in Pakistan, Contract Act, Law of Sale of Goods, Partnership Law and Company laws, Sales Tax, Income Tax Law and Intellectual Property Laws. This course identifies the legal rights of persons in case of nonperformance of contracts, it also identifies the taxation system as well as kinds of taxes in Pakistan. Furthermore, it identifies the intellectual property rights in Pakistan.

Equivalent Course(s) AF 3606, EN 2401, BST 2401

8.0 Bachelor

8.2 LLB (University of London) International Program

The LLB program [University of London (International) program] requires the students to complete 8 courses with a minimum of 24 credit hours. The break-up of 12 courses is as follows:

- 8 Compulsory Courses (3 Credit Hours each)
- 4 Elective Courses³³ (3 Credit Hours each)

In addition, the courses have been listed in order of Annual semester for the convenience of the students.

Course Code	Course Title	Page #
First Year		
LA 1010	Criminal Law	238
LA 1020	Public Law	238
LA 1031	Common Law Reasoning and Institutions	238
LA 1040	Elements of the Law of Contract	239
Second Year		
LA 3002	Law of Trusts	239
LA 3001	Law of Tort	239
LA 3003	Property Law	240
Third Year		
LA 3005	Jurisprudence and Legal Theory	240

33 List of Elective given in Appendix B.

8.2 LLB (University of London) International Program

Course Name	Criminal Law	Credit Hours	3 (3,0)
Course Code	LA 1010	Prerequisite(s)	None

Course Description This course examines general principles of criminal liability, a range of fatal and non-fatal offences against the person and selected offences against property. Attempts to commit offences, secondary liability and defences also form part of the University of London criminal law curriculum. Criminal law consists of a highly developed body of precisely formulated legal rules but as criminal conduct is subject to punishment it thus engages with broad issues of morality and policy. Understanding the tension between certainty in the law and social adaptation affects the development of criminal law will take students beyond the basic stage of understanding the substantive rules of criminal law.

Equivalent Course(s) None

Course Name	Public Law	Credit Hours	3 (3,0)
Course Code	LA 1020	Prerequisite(s)	None

Course Description The UK constitution is famously 'unwritten' and thus contrasts with other constitutional models. Analysing key issues of sovereignty and the division of powers between legislature, executive and administration, one key question is how far the UK lives up to classic doctrine. Equally, membership of the European Union, and the Human Rights Act 1998, affect the overall picture of the relation between citizen and the state. To fully engage with this subject, students need to take an interest in current affairs and debates about what is involved in constitutional issues and reforms.

Equivalent Course(s) None

Course Name	Common Law Reasoning and Institutions	Credit Hours	3 (3,0)
Course Code	LA 1031	Prerequisite(s)	None

Course Description This comprehensive introduction to the English legal system seeks to convey what is distinctive about the common law approach as a legal methodology and as it reflects the history and politics of England and Wales. It examines the sources of law, the civil and criminal court structures, the role of judges and the jury. A running concern of the course is the question of fairness: the impact of the Human Rights Act on the criminal justice system and the issues of access to justice in the civil courts. This course is also vital in initiating students into the process of legal research and the final examination has a compulsory section on research activities carried out during the year.

Equivalent Course(s) None

8.2 LLB (University of London) International Program

Course Name	Elements of the Law of Contract	Credit Hours	3 (3,0)
Course Code	LA 1040	Prerequisite(s)	None

Course Description

Contracts are the legal basis of all commercial transactions. Covering the core topics including: formation of contracts, capacity to contract and privity, performance and breach of contract and remedies for breach of contract, the emphasis is on understanding the key underlying principles of English law. This is very much a case law subject, with judicial precedents stretching back nearly 400 years in some instances (but more usually of 19th and 20th century origin) and a small number of statutory provisions, as well as the impact of EU law. An understanding of what factors judges may, or must, take into account when exercising their discretion is crucial.

Equivalent Course(s)

None

Course Name	Law of Trusts	Credit Hours	3 (3,0)
Course Code	LA 3002	Prerequisite(s)	None

Course Description

A part of Equity law, the law of trusts deals with the rules and principles governing the creation and operation of trusts – a particular method of holding property that developed historically primarily to preserve family wealth, particularly by minimising liability to taxation. The syllabus focuses on three broad areas:

- 1) the requirements for establishing a valid trust (including express private trusts; charitable trusts; implied and resulting trusts; constructive trusts);
- 2) the powers and obligations of trustees under a valid trust (including appointment, retirement and removal of trustees); and
- 3) the remedies available when trustees act improperly.

Equivalent Course(s)

None

Course Name	Law of Tort	Credit Hours	3 (3,0)
Course Code	LA 3001	Prerequisite(s)	None

Course Description

The law of tort concerns the civil liability for the wrongful infliction of injury by one person upon another. The characteristic claim in tort is for monetary compensation or damages. There is no single principle of liability, which makes tort law complex; also there are other sources of monetary compensation for personal injuries (such as unemployment /social security payments, private insurance, criminal injuries compensation schemes, etc.) as well as the fact that the same harms may be pursued through the criminal justice system. Negligence is a key topic and other topics include: interference with economic interest; trespass; defamation; vicarious liability as well as defences and remedies, and sources of future development including EU law.

Equivalent Course(s)

None

8.2 LLB (University of London) International Program

Course Name	Property Law	Credit Hours	3 (3,0)
Course Code	LA 3003	Prerequisite(s)	None

Course Description	Much of the work of solicitors turns around property law in the form of conveyancing (buying and selling dwellings or commercial enterprises) or the relations between landlords and tenants. Here the central principles of English law are portrayed, including the necessary historical context, as many of the basic concepts were established in social conditions very different from today. Property law centres on the concept of the nature and quantum of the various interests that can exist in land, the principles governing the creation, transfer and extinction of these interests and the extent that those interests are enforceable against third parties.
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Equivalent Course(s)	None
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Course Name	Jurisprudence and Legal Theory	Credit Hours	3 (3,0)
Course Code	LA 3005	Prerequisite(s)	None

Course Description	<p>The nature of jurisprudence: methodology, analysis, theory and the idea of definition, the relevance of language and ideology.</p> <p>Legal positivism and its critics: the command theory, Hart-Fuller debate, Dworkin's criticism of positivism, Kelsen (including the use of Kelsenian principles in revolution cases), Raz's theory of law.</p> <p>Moral theory and the law: the history of natural law, Finnis's natural law theory, liberalism and the Hart-Devlin debate, moral rights, utilitarianism and its critics, utilitarianism and the economic analysis of law.</p> <p>Legal reasoning: Dworkin's theory of law as integrity, Dworkin's methodology, practical reasoning, Hohfeld's analysis of legal rights.</p> <p>Social theory and critical accounts of law, including the American Critical Legal Studies movement, Marxist theories of law and state, feminist jurisprudence.</p> <p>A study in depth of a text prescribed by the examiners on which there will be one compulsory question in the examination.</p>
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Equivalent Course(s)	None
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A BE Mechatronics EMBA BS Biosciences BBA
h.D LLB MBA LLB BS Social Sciences MS Computing LL
Media Sciences BS Computing Ph.D BE Mechatr
A BS Computing BS Media Sciences BB
BS Media Sciences Business Studies (BABS) MS Media Sciences
A BBAMBA Banking and Finance MS Computin
Biosciences BS Social Sciences BS Bioscie
BS Social Sciences BE Mechatronics MBA Banking and Finance
A Business Studies (BABS) BS Media Sciences EMBA
A BE Mechatronics EMBA BS Biosciences BBA
Ph.D LLB MBA LLB BS Social Sciences MS Computing L
S Media Sciences BS Computing Ph.D BE Mecha
A BS Computing BS Media Sciences BB
BS Media Sciences Business Studies (BABS) MS Media Sciences
A BBAMBA Banking and Finance MS Computin
Business Studies (BABS) BS Biosciences MBA Banking and
Social Sciences BBA BE Mechatronics MS Computing LL
A Ph.D MBA BS Media Sciences LL
B MBA BE Mechatronics EMBA BS Biosciences
S Media Sciences LL
A BS Computing
BS Media Sciences Business
A BBA MBA Banking and Finance EMBA Ph.D
Business Studies (BABS) LLB BS Biosciences MS Computin

Appendix

9.0 Appendix A - Optional Courses

9.1 Management Sciences

BACHELOR OF BUSINESS ADMINISTRATION (BBA)

Optional Courses

(Compulsory Courses Optional to Offer by Campus)

BA 3506	Foreign Languages
BA 3519	Current Affairs
BA 3613	World Economy
BA 3614	Business analysis and Forecasting*
BA 3619	Enterprise Management
BA 4701	Islamic Banking and Finance*
BA 4707	Marketing Research*
BA 4842	Graphic Design for Multimedia*
BA 4827	Professional Development

*Can be taken as an Elective if not offered by Campus as a compulsory course.

10.0 Appendix B - Electives

10.1 Management Sciences

BACHELOR OF BUSINESS ADMINISTRATION (BBA)

Elective Courses

Finance

BA 4115	Derivatives
BA 4214	Micro Finance
BA 4218	Financial Research
BA 4701	Islamic Banking and Finance
BA 4719	Investment Banking
BA 4724	Financial Modeling
BA 4727	Dynamic of Banking
BA 4734	International Banking
BA 4752	Financial Reporting and Analysis
BA 4756	Econometrics
BA 4831	Portfolio and Investment Management
BA 4833	Security Analysis
BA 4834	Treasury and Funds Management
BA 4855	Financial Risk and Analysis
BA 3614	Business Analysis and Forecasting

Marketing

BA 4116	Supply Chain Management
BA 4125	Emerging Media
BA 4126	Trade Marketing
BA 4217	Experiential Marketing
BA 4707	Marketing Research
BA 4721	Advertising
BA 4722	Brand Management
BA 4739	Export Marketing
BA 4815	Event Management
BA 4816	Industrial Marketing
BA 4821	Media Planning
BA 4824	Sales Management
BA 4842	Graphic Design for Multimedia
BA 4859	Product Innovation and Design
BA 4866	Integrated Marketing Communications

Supply Chain Management

BA 4116	Supply Chain Management
BA 4126	Trade Marketing
BA 4211	Production Management
BA 4702	Total Quality Management
BA 4739	Export Marketing
BA 4742	Customer Relationship Management
BA 4764	Dynamics of Logistics and Distribution
BA 4824	Sales Management
BA 4844	Operation Research
BA 4859	Product Innovation and Design
BA 4766	Purchase Management

Management

BA 4116	Supply Chain Management
BA 4117	Salary and Compensation
BA 4711	Change Management
BA 4712	Industrial Relations & Labor Laws
BA 4713	Leadership and Motivation Techniques
BA 4812	Recruitment and Selection
BA 4813	Training and Development
BA 4815	Event Management
BA 4826	Talent Management
BA 4837	Performance Appraisal
BA 4844	Operations Research

Information Technology

BA 4224	e-Marketing Strategies
BA 4714	e-Business and e-Commerce Management
BA 4745	Information System Audit
BA 4822	Media Production
BA 4842	Graphic Design for Multimedia
BA 4844	Operations Research

BACHELOR OF SCIENCE IN ENTREPRENEURSHIP — BS-ENTREPRENEURSHIP

Elective Courses

EN 4xxx	Mergers and Acquisition
EN 4xxx	Legal Framework for Entrepreneurs
EN 4xxx	Trade and Retail Management
EN 4xxx	Export Marketing
EN 4xxx	Services Marketing
EN 4xxx	Business Development
EN 4xxx	Social Entrepreneurship
EN 4xxx	Technopreneurship
EN 4xxx	Intrapreneurship
EN 4xxx	Agribusiness Management
EN 4xxx	Family Business Management
EN 4xxx	Women Entrepreneurship and Leadership
EN 4xxx	Crisis Management
EN 4xxx	Managing and Growing a Business
EN 4xxx	Creativity and Business
EN 4xxx	Applied Game Theory
EN 4xxx	Executive Leadership

BACHELOR OF BUSINESS STUDIES - BBS

Elective Courses

BST 2xxx	Organizational Behavior
BST 2xxx	Project Management
BST 2xxx	Consumer Behavior
BST 2xxx	Entrepreneurship
BST 2xxx	Supply Chain Management
BST 2xxx	Retail Management
BST 2xxx	Financial Markets and Institutions
BST 2xxx	Service Marketing
BBT 2xxx	Operations Management
BST 2xxx	Marketing Research
BST 2xxx	Dynamics of Banking
BST 2xxx	Salary and Compensation
BST 2xxx	Training and Development
BST 2xxx	Performance Appraisal
BST 2xxx	Recruitment and Selection

MASTER OF BUSINESS ADMINISTRATION - MBA

Elective Courses

Management

BA 5111	Business Process Re-engineering
BA 5112	Change Management
BA 5113	Industrial Management and Labor Relations
BA 5114	Leadership and Motivation Techniques
BA 5115	Operations Research
BA 5212	Petroleum Business Management and Risk Analysis
BA 5213	Project Management
BA 5214	Supply Chain Management
BA 5218	Organizational Strategy and Effectiveness
BA 5238	Organization Development

Human Resource Management

BA 5114	Leadership and Motivation Techniques
BA 5118	Compensation Management
BA 5117	Performance Appraisal
BA 5159	Salary and Compensation
BA 5164	Human Resources Information Systems
BA 5165	Job Analysis and Design
BA 5167	Talent Management and Succession Planning
BA 5185	Leadership Development
BA 5193	HR Operations and Business Partnering
BA 5196	Conflict Resolution
BA 5215	Recruitment and Selection
BA 5216	Training and Development
BA 5239	HR Policy Development
BA 5285	Performance Management
BA 5251	Human Resource Development
BA 5292	HR Analytics
BA 5297	Human Capital Development and Analytics
BA xxx	Human Resource Audit
BA xxx	Contemporary Issues in Human Resource Management
BA xxx	Human Resource Management and Technology

Finance

BA 5131	Advance Financial Management
BA 5132	Analysis of Financial Statements
BA 5133	Corporate Finance
BA 5134	Derivatives
BA 5135	Financial Markets and Institutions
BA 5137	International Banking
BA 5138	Econometrics
BA 5139	Financial Risk Analysis
BA 5151	International Finance
BA 5155	Mergers and Acquisitions
BA 5175	Banking Operations
BA 5179	Commodity Pricing
BA 5184	Financial Product Regulations
BA 5187	Business Analysis and Forecasting
BA 5192	Financial Management Policy
BA 5229	Financial Modeling
BA 5231	Islamic Banking and Finance
BA 5232	Portfolio and Investment Management
BA 5235	Treasury and Funds Management
BA 5244	Investment Banking
BA 5254	Fundamentals of Financial Engineering
BA 5262	Behavioral Finance
BA 5273	Prudential Regulations
BA 5278	Banking Crises and Management
BA 5284	Theory and Practice of Lending
BA 5294	Venture Capital and Private Equity
BA 5298	Financial Reporting and Analysis

Management Information System

BA 5111	Business Process Re-engineering
BA 5156	e-Commerce Strategies and Management
BA 5163	Enterprise Resource Planning
BA 5169	Technology Management and Innovation
BA 5181	Business Intelligence and Data Warehousing
BA 5241	E-Commerce

Marketing

BA 5121	Advertising
BA 5122	Brand Management
BA 5123	Consumer Behavior
BA 5124	Customer Relationship Management
BA 5126	Export Marketing
BA 5127	Global Marketing
BA 5129	Services Marketing
BA 5141	Public Relations Management
BA 5171	Strategic Advertising
BA 5182	Trade Marketing
BA 5186	Social Marketing
BA 5198	Experiential and Content Marketing
BA 5199	Integrated Brand Communication
BA 5217	Industrial Marketing
BA 5224	Media Planning and Management
BA 5225	Personal Selling
BA 5226	Pharmaceutical Marketing
BA 5227	Sales Management
BA 5228	Retail Management
BA 5246	Public Relations
BA 5256	Integrated Marketing Communications
BA 5259	Emerging Media
BA 5264	Interactive Global and Regional Marketing
BA 5269	Marketing Intelligence
BA 5281	Digital Marketing
BA 5286	Media Marketing
BA 5293	New Product Development Process and Innovation
BA 5296	Rural Marketing
BA 5299	Media Management
BA 5xxx	Marketing Practices in Pakistan
BA 5xxx	Marketing Analytics

Supply Chain Management

BA 5191	Advance Manufacturing and TPM in SCM
BA 5194	Supply Chain Finance
BA 5214	Supply Chain Management
BA 5263	Dynamics of Logistics and Distribution
BA 5265	Operational Planning in Supply Chain
BA 5266	Strategic Procurement in SCM
BA 5287	Execution and Control of Operations in SCM
BA 5291	Detailed Scheduling and Planning in SCM
BA 5xxx	Materials Management

MASTER OF BUSINESS ADMINISTRATION IN BANKING & FINANCE (MBA B&F)

Elective Courses

BA 5xxx	Asset Management
BA 5xxx	International Finance
BA 5xxx	Micro and SME Finance
BA 5xxx	Marketing of Financial Services
BA 5xxx	Islamic Banking and Finance
BA 5xxx	Fixed Income Securities
BA 5xxx	Behavioral Finance
BA 5xxx	Venture Capital and Private Equity
BA 5xxx	Capital Markets
BA 5xxx	Commercial Banking
BA 5xxx	Corporate Investment and Banking
BA 5xxx	Corporate Restructuring and Design
BA 5xxx	Financial Intermediation
BA 5xxx	Financial Planning and Budgeting
BA 5xxx	Financial Systems
BA 5xxx	Foreign Exchange Operations and Management
BA 5xxx	Banking Insurance
BA 5xxx	Information System Audit
BA 5xxx	Leasing Strategies and Regulations
BA 5xxx	Mergers and Acquisitions in Banking
BA 5xxx	Operations and Derivatives
BA 5xxx	Project Financing
BA 5xxx	Theory and Policy of Modern Finance

MASTER IN PROJECT MANAGEMENT (MPM)

Elective Courses

PM 5151	Enterprise Resource Planning
PM 5152	Innovation and Technology Management
PM 5251	Procurement and Contract Management
PM 5252	Project Change Management
PM 5253	Project Human Resource Management
PM 5255	Project Change and Risk Management
PM 5257	Simulation for Project Management
PM 5303	Project Monitoring, Evaluation and Control Management
PM 5352	Project Stakeholders Management
PM 5353	Research Methods for Project Managers
PM 5354	Leadership, Team and Communication for Project Management
PM 5355	Project Communication Reporting and Presentation

EXECUTIVE MBA**Elective Courses****Marketing**

BE 432	Services Marketing
BE 436	Retail Management
BE 472	Media Planning and Management
BE 473	Advertising
BE 474	Brand Management
BE 484	Consumer Behavior
BE 491	Consumer Relationship Management
BE xxx	Integrated Marketing Communication
BE xxx	Digital Marketing
BE xxx	Emerging Media
BE xxx	Experiential and Content Marketing
BE xxx	Export Marketing
BE xxx	Global Marketing

Finance

BE 424	International Banking and Finance
BE 481	Corporate Finance
BE 482	Islamic Banking and Finance
BE 483	Analysis of Financial Statements
BE 487	Portfolio and Investment Management
BE 488	Project Evaluation
BE xxx	Banking Operations
BE xxx	Financial Modeling
BE xxx	Treasury and Funds Management

Human Resource Management

BE 427	Leadership and Motivational Techniques
BE 471	Compensation Management
BE 476	Recruitment and Selection
BE 485	Performance Appraisal
BE 486	Training and Development
BE 476	Recruitment and Selection
BE 485	Performance Appraisal
BE xxx	Conflict Resolution
BE xxx	Crisis Management
BE xx	HR Analytics
BE xxx	Salary and Compensation
BE xxx	Talent Management and Succession Planning

Supply Chain Management

BE 428	Supply Chain Management
BE 493	Dynamics of Logistics and Distribution
BE 494	Operational Planning in Supply Chain
BE 495	Strategic Procurement in SCM
BE xxx	Advance Manufacturing and TPM in SCM
BE xxx	Detailed Scheduling and Planning in SCM
BE xxx	Execution and Control of Operations in SCM
BE xxx	Supply Chain Finance

MASTER OF SCIENCE IN PROJECT MANAGEMENT (MSPM)

Elective Courses

MP 5102	Project Management Constraints
MP 5201	Quality Management Tools
MP 5205	Theories of Management
MP 5215	Human Resource Management Communication
MP 5217	Financial Decision Analysis
MP 5218	Software Project Management
MP 5314	Project Review, Assurance and Governance
MP 5317	Supply Chain Management
MP 5318	Business Analysis
MP 5324	Risk Management Dynamics
MP 5325	Project Simulation
MP xxxx	Project Scope
MP xxxx	Project Scheduling, Planning and Time Management
MP xxxx	Project Risk Management

MASTER OF SCIENCE IN MANAGEMENT SCIENCES (MSMS)

Elective Courses

Finance

MS 5237	Business Finance and Decision Making
MS 5414	Applied Econometrics
MS 5105	Econometrics
MS 5113	Financial Time Series
MS 5103	Managerial Economics
MS 5215	Corporate Finance
MS 5111	Derivatives and Financial Risk
MS 5421	Capital Asset Pricing Model
MS 5425	Empirical Asset Pricing
MS 5218	Financial Markets
MS 5115	Operations and Mathematical Modeling
MS 5134	Behavioral Finance
MS 5206	Modern Financial Applications
MS 5217	Corporate Finance Planning and Decisions

Marketing

MS 5104	Strategic Marketing Decisions
MS 5301	Seminars in Marketing
MS 5249	Advanced Marketing Strategies
MS 5422	Distribution and Channel Management
MS 5424	Strategic Brand Management

Research

MS 5315	Research writing
MS 5117	Qualitative Tools and Analysis
MS 5207	Quantitative Analysis for Decision Making

Human Resource Management

MS 5238	Strategic Human Resource Development
MS 5415	NGO Management
MS 5101	Change Management
MS 5102	Organizational Development
MS 5216	Corporate Governance
MS 5225	Leadership and Motivation Techniques
MS 5203	Global Corporate Strategy
MS 5211	Creative Leadership
MS 5205	International Business Management
MS 5423	Global Governance and Development
MS 5241	Public Administration and Governance
MS 5112	Strategic Management
MS 5229	Negotiations and Conflict Resolution
MS 5303	Issues in Strategic Management
MS 5245	System Thinking and Organizational Learning
MS 5202	Organizational Strategies and Effectiveness

DOCTOR OF PHILOSOPHY IN MANAGEMENT SCIENCES (PhD-MS)

Elective Courses

Finance

- MS 6111 Business Finance and Decision Making
- MS 6113 Applied Econometrics
- MS 6202 Econometrics
- MS 6411 Financial Time Series
- MS 6423 Managerial Economics
- MS 6323 Corporate Finance
- MS 6422 Derivatives and Financial Risk
- MS 6315 Capital Asset Pricing Model
- MS 6317 Empirical Asset Pricing
- MS 6318 Financial Markets
- MS 6418 Operations and Mathematical Modeling
- MS 6322 Behavioral Finance
- MS 6319 Modern Financial Applications
- MS 6421 Corporate Finance Planning and Decision

Marketing

- MS 6204 Strategic Marketing Decisions
- MS 6215 Seminars in Marketing
- MS 6312 Advance Marketing Strategy
- MS 6316 Distribution and Channel Management
- MS 6415 Strategic Brand Management

Research

- MS 6313 Research writing
- MS 6105 Qualitative Tools and Analysis
- MS 6102 Quantitative Analysis for Decision Making

Human Resource Management

- MS 6112 Strategic Human Resource Development
- MS 6114 NGO Management
- MS 6201 Change Management
- MS 6211 Organizational Development
- MS 6311 Corporate Governance
- MS 6417 Leadership and Motivation Techniques
- MS 6314 Global Corporate Strategy
- MS 6412 Creative Leadership
- MS 6413 International Business Management
- MS 6414 Global Governance and Development
- MS 6205 Public Administration and Governance
- MS 6424 Strategic Management
- MS 6416 Negotiations and Conflict Resolution
- MS 6324 Issues in Strategic Management
- MS 6419 System Thinking and Organizational Learning
- MS 6321 Organizational Strategies and Effectiveness

10.0 Appendix B - Electives

10.2 Computer Science

BACHELORS OF SCIENCE IN COMPUTER SCIENCE (BSCS)

Elective Courses

University Electives

- CSC 4501 Business and Technology Ethics
- CSC 4601 Foreign Language
- CSC 4502 Design and Creativity
- CSC 4602 History of Scientific Ideas
- CSC 4503 Introduction to Accounting
- CSC 4603 Management Principle
- CSC 4504 Organizational Behavior
- CSC 4604 Research Report
- CSC 4505 System Administration

CS Electives

- CSC 4701 Advance Internet Architecture
- CSC 4801 Advance Programming Techniques
- CSC 4702 Advance Telecommunication Technologies
- CSC 4802 Android Application Development
- CSC 4703 Applied Data Mining
- CSC 4803 Auditing Information System
- CSC 4704 Bioinformatics
- CSC 4804 Business Process Re-engineering
- CSC 4705 Control Systems
- CSC 4805 Data and Network Security
- CSC 4706 Digital Image Processing
- CSC 4806 Digital Signal Processing
- CSC 4707 DNA Computing
- CSC 4807 Embedded Programming
- CSC 4708 Enterprise Resource Planning
- CSC 4808 Ethical Hacking
- CSC 4709 Internet Business Models
- CSC 4809 iOS Development
- CSC 4712 IT Innovations
- CSC 4711 Linux Administrator-I
- CSC 4811 Linux Administrator-II
- CSC 4713 Managing Data-Center Projects
- CSC 4812 Mechatronics
- CSC 4813 Modeling and Simulation
- CSC 4714 Network Security and Encryption
- CSC 4715 Oracle Administration-I
- CSC 4815 Software Engineering-II
- CSC 4814 Software Project Management
- CSC 4716 Switching and Routing
- CSC 4816 Technopreneurship
- CSC 4717 Web Technologies-I
- CSC 4817 Web Technologies-II
- CSC 4718 Wireless and Mobile Technologies
- CSC xxxx Interaction Design
- CSC 4719 Game Development
- CSC xxxx Introduction to Cloud Computing
- CSC xxxx Software Engineering Economics
- CSC 4818 Data Science
- CSC xxxx Embedded System

10.2 Computer Science

MASTER OF SCIENCE IN COMPUTER SCIENCES (MSCS)

Elective Courses

CS (Stream-I)

CSC 5xxx	Real-Time Systems
CSC 5xxx	Digital Image Processing
CSC 5xxx	Machine Learning
CSC 5xxx	Data Mining
CSC 5xxx	Operation Research
CSC 5xxx	Expert System

CS (Stream-II)

CSC 5xxx	Reverse Engineering
CSC 5xxx	Digital Forensics & Malware Analysis
CSC 5xxx	Advanced Resource Sharing Architecture
CSC 5xxx	Computer Vision
CSC 5xxx	Robotics
CSC 5xxx	Advanced Database Design
CSC 5xxx	Distributed Computing
CSC 5xxx	Systems and Network Programming

SE (Stream-I)

SEC 5xxx	Software Requirement Engineering
SEC 5xxx	Software System Architecture
SEC 5xxx	Software System Quality
SEC 5xxx	Advanced Software Engineering

SE (Stream-II)

SEC 5xxx	Software Analysis & Testing
SEC 5xxx	Web Engineering
SEC 5xxx	Software Project Management

N&S (Stream-I)

NSC 5xxx	Advanced Computer Networks
NSC 5xxx	Network Security
NSC 5xxx	Applied Cryptography
NSC 5xxx	Information Security
NSC 5xxx	Wireless Sensor Networks

N&S (Stream-II)

NSC 5xxx	Telecom Policies and Regulations
NSC 5xxx	Mobile Ad-hoc Networks
NSC 5xxx	Advanced Data Communications

DOCTOR OF PHILOSOPHY IN COMPUTER SCIENCES (PhD CS)

Elective Courses

CS (Stream-I)

- CSC 5xxx Real-Time Systems
- CSC 5xxx Digital Image Processing
- CSC 5xxx Machine Learning
- CSC 5xxx Data Mining
- CSC 5xxx Operation Research
- CSC 5xxx Expert System

CS (Stream-II)

- CSC 5xxx Reverse Engineering
- CSC 5xxx Digital Forensics & Malware Analysis
- CSC 5xxx Advanced Resource Sharing Architecture
- CSC 5xxx Computer Vision
- CSC 5xxx Robotics
- CSC 5xxx Advanced Database Design
- CSC 5xxx Distributed Computing
- CSC 5xxx Systems and Network Programming

SE (Stream-I)

- SEC 5xxx Software Requirement Engineering
- SEC 5xxx Software System Architecture
- SEC 5xxx Software System Quality
- SEC 5xxx Advanced Software Engineering

SE (Stream-II)

- SEC 5xxx Software Analysis & Testing
- SEC 5xxx Web Engineering
- SEC 5xxx Software Project Management

N&S (Stream-I)

- NSC 5xxx Advanced Computer Networks
- NSC 5xxx Network Security
- NSC 5xxx Applied Cryptography
- NSC 5xxx Information Security
- NSC 5xxx Wireless Sensor Networks

N&S (Stream-II)

- NSC 5xxx Telecom Policies and Regulations
- NSC 5xxx Mobile Ad-hoc Networks
- NSC 5xxx Advanced Data Communications

10.0 Appendix B - Electives

10.3 Social Sciences

BACHELOR OF SCIENCE IN SOCIAL SCIENCES (BSSS)

Elective Courses

SS 1154	Literature
SS 1157	Comparative Religion
SS 1163	Development and Politics
SS 1254	World history
SS 1262	Mass Media
SS 2305	Human Geography
SS 1263	Culture and Media in Sindh

All courses may not be offered every year. Alternate courses may be substituted as and when needed.

MASTER OF SCIENCE IN SOCIAL SCIENCE (MSSS)

Elective Courses

International Relations/Economics

SS 5326	Research Philosophy
SS 5223	Financial Time Series
SS 5227	Research Writing
SS 5104	Politics of Geo-Economics
SS 5111	Democratization as a Global Process
SS 5212	NGO Management
SS 5214	Public Policy Management
SS 5305	Political Economy of Pakistan
SS 5306	Sacred and Secular
SS 5311	Environmental Studies
SS 5312	Globalization and Developing Countries
SS 5313	Intellectual Property Rights and Laws
SS 5322	Topics of Political Economy
SS 5226	Issues in Pakistan's Political and Constitutional History
SS 5321	History of Ideas
SS 5228	Corporate Governance
SS 5206	Political Economy in the Global Perspective
SS 5402	Law and Human Right
SS 5116	Econometrics
SS 5327	Development Economics and Sustainability

Sociology

SS 5xxx	Sociology of Development
SS 5xxx	Population Dynamics
SS 5xxx	Social Statistics
SS 5xxx	Cultural Anthropology
SS 5xxx	NGO Management
SS 5xxx	Gender and Human Rights
SS 5xxx	Industrial Sociology
SS 5xxx	Law and Human Rights
SS 5xxx	Community Development and Social Mobilization

Clinical Psychology

SS 5xxx	Assessment and Diagnosis – I
SS 5xxx	Assessment and Diagnosis – II
SS 5xxx	Psychotherapy and Counseling- I
SS 5xxx	Psychotherapy and Counseling- II
SS 5xxx	Psychophysiology and Psychopharmacology
SS 5xxx	Clinical Internship (3 CHs)

Industrial/Organizational Psychology

SS 5xxx	Perspective in Organizational Psychology
SS 5xxx	Psychological Assessment in Organizational Psychology
SS 5xxx	Psychology of Leadership
SS 5xxx	Organizational Culture & Development
SS 5xxx	Marketing and Consumer Psychology
SS 5xxx	Organizational Conflict and Management

DOCTOR OF PHILOSOPHY IN SOCIAL SCIENCES (PhD)

Elective Courses

International Relations / Economics

SS 5326	Research Philosophy
SS 5223	Financial Time Series
SS 5227	Research Writing
SS 5104	Politics of Geo-Economics
SS 5111	Democratization as a Global Process
SS 5212	NGO Management
SS 5214	Public Policy Management
SS 5305	Political Economy of Pakistan
SS 5306	Sacred and Secular
SS 5311	Environmental Studies
SS 5312	Globalization and Developing Countries
SS 5313	Intellectual Property Rights and Laws
SS 5322	Topics of Political Economy
SS 5226	Issues in Pakistan's Political and Constitutional History
SS 5321	History of Ideas
SS 5228	Corporate Governance
SS 5206	Political Economy in the Global Perspective
SS 5402	Law and Human Right
SS 5116	Econometrics
SS 5327	Development Economics and Sustainability

Sociology

SS 5xxx	Sociology of Development
SS 5xxx	Population Dynamics
SS 5xxx	Social Statistics
SS 5xxx	Cultural Anthropology
SS 5xxx	NGO Management
SS 5xxx	Gender and Human Rights
SS 5xxx	Industrial Sociology
SS 5xxx	Law and Human Rights
SS 5xxx	Community Development and Social Mobilization

10.3 Social Sciences

Clinical Psychology

- SS 5xxx Assessment and Diagnosis – I
- SS 5xxx Assessment and Diagnosis – II
- SS 5xxx Psychotherapy and Counseling- I
- SS 5xxx Psychotherapy and Counseling- II
- SS 5xxx Psychophysiology and Psychopharmacology
- SS 5xxx Clinical Internship (3 CHs)

Industrial/Organizational Psychology

- SS 5xxx Perspective in Organizational Psychology
- SS 5xxx Psychological Assessment in Organizational Psychology
- SS 5xxx Psychology of Leadership
- SS 5xxx Organizational Culture & Development
- SS 5xxx Marketing and Consumer Psychology
- SS 5xxx Organizational Conflict and Management

10.0 Appendix B - Electives

10.4 Media Sciences

BACHELOR OF MEDIA SCIENCES (BMS)

Elective Courses

MD 4854	Illustration
MD 4732	Typography
MD 4867	Topics in Film and Television
MD 4878	Design for Social Change
MD 4886	Game Design
MD 4883	Urdu Literature in South Asian Cinema

MASTER OF SCIENCE IN MEDIA STUDIES (MSMD)

Elective Courses

MD 5xxx	Media, Politics, and Governance
MD 5xxx	Issues in International Media
MD 5xxx	Theories of Communication Design
MD 5xxx	Theories of Film and Television
MD 5xxx	Urban Geographies and Visual Cultures
MD 5xxx	Media, Art, and Technology

10.0 Appendix B - Electives

10.5 Mechatronics Engineering

BACHELOR OF ENGINEERING IN MECHATRONICS ENGINEERING (BEME)

Elective Courses

Engineering Electives

ME 4722 Digital Signal Processing
ME 4723 Simulation and Modeling
ME 4821 Digital Image Processing
ME 4727 Digital Control Systems
ME 4826 Embedded Systems
ME 4721 Artificial Intelligence and Computer Vision
ME 4xxx Applied Thermodynamics

Management Sciences Electives

ME 4823 Engineering Management
ME 4724 Entrepreneurship
ME 4825 Research Methodology
ME 4725 Leadership and Motivation Techniques
ME 4824 Organizational Behavior

10.0 Appendix B - Electives

10.6 Biosciences

BACHELOR OF SCIENCE IN BIOSCIENCES (BS-Biosciences)

Elective Courses

Molecular Biology

BIO 4721	Advance Biochemical Techniques
BIO 4722	Medical Transcription
BIO 4822	Nanotechnology
BIO 4725	Advanced Molecular Techniques
BIO 4726	Applied Enzymology
BIO 4723	Virology
BIO 4827	Systems Biology

Biotechnology

BIO 4721	Advance Biochemical Techniques
BIO 4727	Food Biotechnology
BIO 4826	Medical Biotechnology
BIO 4825	Fermentation Biotechnology
BIO 4823	Stem cell Research
BIO 4724	Telemedicine
BIO 4726	Applied Enzymology

MASTER OF SCIENCE IN BIOSCIENCES (MS-Biosciences)

Elective Courses

5xxx	Applied Biotechnology
5xxx	Environmental and Industrial Biotechnology
5xxx	Plant Biotechnology
5xxx	Fermentation Design and Engineering
5xxx	Medical Biotechnology
5xxx	Biocatalysis and Enzymology
5xxx	Clinical Biochemistry
5xxx	Drug Discovery and Development
5xxx	Biocomputation
5xxx	Cancer Biology
5xxx	Applied Immunology
5xxx	Techniques in Diagnostics
5xxx	Molecular Dynamics
5xxx	Food Sampling Techniques and Analysis
5xxx	Food Quality Management System
5xxx	Food Toxicology and Adulteration

10.0 Appendix B - Electives

10.7 Education

MASTERS OF ARTS IN EDUCATION (MA EDU)

Elective Courses

Teacher Education (TE)

EDU 5xxx	Affective Education
EDU 5xxx	Guidance & Counselling in Education
EDU 5xxx	Education for Sustainable Development
EDU 5xxx	Gender and Education

Early Childhood Education (ECE)

EDU 5xxx	Human Development and Learning
EDU 5xxx	Language and Literacy Experiences
EDU 5xxx	Supportive and Safe Environment
EDU 5xxx	Play and Enquiry based Learning

Educational Leadership and Management (ELM)

EDU 5xxx	Effective Change Management in Education
EDU 5xxx	Organizational Development in Education
EDU 5xxx	Human Resource Management
EDU 5xxx	Entrepreneurship in Education

MASTER OF SCIENCE IN EDUCATIONAL LEADERSHIP AND MANAGEMENT (MSELM)

Elective Courses

ELM 5xxx	Sociological Issues in Education/Access/Outcomes and Quality
ELM 5xxx	Learning Effectiveness in Higher Education Contexts
ELM 5xxx	Use of Technology in Education
ELM 5xxx	Education in the Context of Conflict
ELM 5xxx	Socio-Politics of Language Policy in Educational Contexts
ELM 5133	Change Management in Education
ELM 5134	Educational Policy and Politics
ELM 5xxx	Assessment and Evaluation in Education
ELM 5xxx	Performance Management and Professional Development
ELM 5xxx	School Evaluation and Monitoring
ELM 5131	Teacher Education
ELM 5xxx	Research Philosophy
ELM 5xxx	Finance and Resource Management
ELM 5132	Organizational Development

DOCTOR OF PHILOSOPHY IN EDUCATIONAL LEADERSHIP AND MANAGEMENT (PhD ELM)

Elective Courses

ELM 6xxx	Sociological Issues in Education/Access/Outcomes and Quality
ELM 6xxx	Learning Effectiveness in Higher Education Contexts
ELM 6xxx	Use of Technology in Education
ELM 6xxx	Education in the Context of Conflict
ELM 6xxx	Socio-Politics of Language Policy in Educational Contexts
ELM 6123	Change Management in Education
ELM 6124	Educational Policy and Politics
ELM 6xxx	Assessment and Evaluation in Education
ELM 6xxx	Performance Management and Professional Development
ELM 6xxx	School Evaluation and Monitoring
ELM 6121	Teacher Education
ELM 6xxx	Research Philosophy
ELM 6xxx	Finance and Resource Management
ELM 6122	Organizational Development

10.0 Appendix B - Electives

10.8 LLB

LLB (UNIVERSITY OF LONDON)

Elective Courses

LA 3028	Introduction to Islamic Law
LA 3021	Company Law
LA 3013	Commercial Law
LA 2029	Protection of Human Rights
LA 3019	Family Law
LA 3013	Public International Law
LA 3008	Administrative Law
LA 3203	Law Skills Portfolio
LA 3024	EU Law

11.0 Appendix C - Major Requirements

11.1 Social Sciences

BACHELOR OF SCIENCE IN SOCIAL SCIENCES (BSSS)

Major Courses

Psychology

SS 4111	Abnormal Psychology
SS 4112	Developmental Psychology
SS 4134	Cognitive Psychology
SS 4135	Educational Psychology
SS 4234	Psychodynamics
SS 4268	History of Psychology
SS 4167	Child Psychology
SS 4156	Clinical Psychology
SS 4114	Personality Theories
SS 4255	Counseling and Psychotherapy
SS 4211	Psychological Testing
SS 4236	Positive Psychology
SS 4168	Experimental Psychology
SS 4267	Forensic Psychology
SS 4262	Physiological Psychology

Sociology

SS 4269	Civil Society
SS 4271	Peace Movements
SS 4138	Corporate Social Responsibility
SS 4141	Mass Media and Society
SS 4237	Post-Colonial State and Social Development
SS 4238	Social Entrepreneurship
SS 4239	Social Justice
SS 4241	Sociology of Education
SS 4242	Sociology of Poverty
SS 4196	Social Theories-I
SS 4296	Social Theories-II
SS 4171	Class, Caste, and Ethnicity in South Asia
SS 4172	Political Sociology
SS 4272	Social Change in Pakistan
SS 4169	Citizenship
SS 4273	Urbanization
SS 4295	Criminology
SS 4197	Sociology of Religion

International Relations

SS 4275	Foreign Policy and International Politics
SS 4274	Diplomacy, Conflict Resolution and Confidence Building Measures
SS 4219	Peace Research
SS 4222	Strategic Studies

11.1 Social Sciences

- SS 4176 Globalization and Global Governance
- SS 4277 Modern Ideologies
- SS 4174 Central and West Asian Studies
- SS 4175 European Studies
- SS 4177 Middle Eastern Studies
- SS 4179 Politics of Terrorism
- SS 4178 Muslim World
- SS 4276 International Institutions
- SS 4278 Political Geography
- SS 4119 Arms Control and Disarmament
- SS 4279 US and International Politics

Economics

- SS 4139 Gender and Development
- SS 4147 Development and Planning
- SS 4181 Capabilities and Human Development
- SS 4281 Fiscal and Monetary Economics
- SS 4261 Mathematical Economics
- SS 4183 Industrial Economics
- SS 4284 Trade Economics
- SS 4128 Agriculture Economics
- SS 4182 Game Theory
- SS 4283 Labour Economics
- SS 4282 Growth
- SS 4184 Poverty and Inequality
- SS 4228 History of Economic Thoughts
- SS 4249 Pakistan Economy
- SS 4251 Sustainable Development

Sindh Studies

- SS 4188 Geography and Geology of Sindh
- SS 4287 History and Politics of Sindh
- SS 4288 Irrigation System of Sindh
- SS 4185 Agriculture in Sindh
- SS 4285 Archaeology of Sindh
- SS 4186 Anthropology and Culture of Sindh
- SS 4286 Art and Architecture in Sindh
- SS 4187 Ethnomusicology of Sindh
- SS 4289 Sindh's Economy and Commerce
- SS 4292 Survey of Sindhi Literature
- SS 4189 Philosophy of Sindh
- SS 4192 Sindh's Sociology I: Education and Language Policy
- SS 4193 Sindh's Sociology II: Social Structures and Development
- SS 4194 Sindh's Sociology III: Health, Gender, and Feminism
- SS 4293 The Sindhi Diaspora

11.1 Social Sciences

- SS 4291 Sindh's Geopolitical Exigencies
- SS 4191 Sindh's Botanical and Zoological Heritage

Anthropology

- SS 4xxx Cultural / Social Anthropology
- SS 4xxx Visual, Material and Museum Anthropology
- SS 4xxx Cultural Studies
- SS 4xxx Biological Anthropology
- SS 4xxx Archaeological Anthropology
- SS 4xxx Linguistic Anthropology
- SS 4xxx Cognitive and Evolutionary Anthropology
- SS 4xxx Migration and Refugee Studies
- SS 4xxx Medical and Forensic Anthropology
- SS 4xxx Business and Corporate Anthropology
- SS 4xxx Human Sciences/ Human Geography
- SS 4xxx Urbanization and Change in Complex Societies
- SS 4xxx Earth Sciences / Geology/ Landscape and Ecology
- SS 4xxx Social Analysis & Interpretation: Study of Indus Valley Civilization
- SS 4xxx Social Analysis & Interpretation: Study of Greco-Roman Civilization
- SS 4xxx History of Art

Political Science

- SS 4xxx Theory of Politics
- SS 4xxx History of Political Thought
- SS 4xxx Practice of Politics
- SS 4xxx Political Analysis
- SS 4xxx Comparative Government: British Politics and Governments since 1900
- SS 4xxx Comparative Politics of Britain, Europe and South Asia: A Colonial / Modern and Post-Modernist Views
- SS 4xxx Politics of Asia
- SS 4xxx Politics and Gender
- SS 4xxx Social Anthropology and Politics
- SS 4xxx Politics and International Relations
- SS 4xxx Political Sociology
- SS 4xxx Political Economy / Geographies of Development / Development Studies
- SS 4xxx Human Geography
- SS 4xxx Conflict and Peace Building Studies

11.0 Appendix C - Major Requirements

11.2 Media Sciences

BACHELOR OF MEDIA SCIENCES (BMS)

Major Courses

Film & Television Production

MD 4726	Directing-I
MD 4728	Directing-II
MD 4781	Sound Design
MD 4821	Cinematography
MD 4825	Screenwriting
MD 4859	Introduction to Photojournalism
MD 4872	Visual Storytelling
MD 4868	Production Practices-III
MD 4724	Documentary Vision
MD 4764	Production Design
MD 4765	Basic Lighting

Advertising Strategy & Design

MD 4723	Advance Animation
MD 4731	Advertising Research
MD 4739	Advertising Design and Concept
MD 4744	History of Design
MD 4754	Creative Aspect in Advertising
MD 4779	Digital Brand Communication
MD 4835	Consumer Behavior
MD 4843	Campaign Strategy
MD 4846	New Media Advertising
MD 4847	Copy writing
MD 4736	Integrated Marketing Communication
MD 4837	Media Planning

Journalism

MD 4757	Feature Writing-I
MD 4879	Multimedia Journalism
MD 4864	Investigative Journalism and Crisis Reporting
MD 4877	The International Newsroom

12.0 Appendix D - Guidelines for Thesis

12.1 Media Sciences

BACHELOR OF MEDIA SCIENCES (BMS)

Guidelines for Production Thesis

Students are required to produce a short film or documentary of 10-20 minute duration. Students must take 6-7 relevant elective courses.

- Students are also required to develop a screenplay for the film. Students can use build on some exceptional projects/screenplay they developed for a course previously done. Screenplay will be developed through a process of research on situations, locations, and characters. The process must demonstrate involvement in the development of contexts, character bios, etc. Students will be required to work on screenplay in close coordination with the internal faculty and other fellow students who will guide them through critique in a weekly class. Students are required to submit all research/related work in a file along with a screenplay.
- Documentary students are required to do extensive research such as primary research, meetings with related experts, preliminary interviews, archival research, etc. All of this must be submitted in a research file.
- Students are supposed to show a grasp of different areas of production i.e. cinematography, production design, casting, editing, and sound design as a director of the project.
- Students are required to work in coordination with a team of students performing their roles as cinematographers, production designers, gaffers, producers, editors, sound technicians, etc. Only members of current student body – batchmates and juniors – can be a part of student's production crew. Any outside professional help will be penalized unless allowed by the advisor and the department. The advisor must approve shooting schedule and crew list. Advisor or faculty members or staff may visit shooting locations.
- Students are required to utilize the equipment available in the department. Use of some outside equipment will be permitted. Use of outside equipment will require consent and permission of the advisor.
- The advisor will review the editing process.
- Students will be required to have regular meetings with the advisor.
- DEADLINES will be strictly enforced.

BACHELOR OF MEDIA SCIENCES (BMS)

Journalism Thesis Guidelines

Journalism students should take on a substantial theme on issues related to current affairs, international relations, and/or socio-cultural issues demonstrating multimedia, feature writing, investigative reporting, incisive interviewing, editorial judgment and compelling storytelling skills. The central focus should be on taking on a relevant journalistic topic of current and/or historical nature that requires substantial research and a critical analysis of the issues involved.

The project would include two components:

1. Major component of the project should be an investigative or feature piece of at least 5000 words. The piece can also be subdivided into a series of articles or features of maximum five parts of at least 1000-1500 words each.
2. Supplementary component should be multimedia elements incorporating video, stills and/or audio depending on the nature of the topic. Advisor will help decide on the number elements required for the second component.

The final thesis should be presented as a combination of written and multimedia components in an online portal specifically devoted to showcase the project.

BACHELOR OF MEDIA SCIENCES (BMS)

Guidelines for Advertising Thesis

- Students will be dealt with individually by advisors from the full-time faculty and will be free to chose their own topics, and must commit to either a strategy or design thesis at the very beginning of the semester. Students must take 6-7 relevant elective courses.
- There is a methodical, linear structure of deadlines and presentations that must be given to the advisors and students. The deadlines are :
 - a) Research,
 - b) Ideation & Concepts,
 - c) Prototypes\ Product Strategy (this covers Thesis I), and
 - d) Final Execution\Business and Marketing Strategy (Thesis II)
- Fulltime instructors will give all students a clear process and deliverables in the form of a brief for each step of the thesis and each deadline
- DEADLINES will be strictly enforced

Note:

Students must finish at least 38 courses out of 43 in order to enroll for thesis credits. Students on academic probation cannot enroll for thesis credits.

Thesis (6-credits) is offered over two semesters as Thesis I & II in the 8th (Spring) and the following summer semester respectively. Thesis I is pass/fail whereas in thesis II a grade is awarded to students. Final grade comprises 50% of advisors' grade and 50% of the average of 2-3 external jury members' grades.

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We Work Smart

