

BS Business Analytics (BSBA)

Introduction

The Bachelor of Studies in Business Analytics (BSBA) is a four-year degree program comprising 130 credit hours, designed to blend core business knowledge with advanced analytical, statistical, and technological skills. This program prepares graduates to meet the increasing demand for data-driven decision-making in Pakistan's economy and global markets.

In the initial semesters, students develop strong foundations in English, Mathematics, Statistics, Economics, Management, Marketing, and Finance, along with interdisciplinary knowledge in Psychology, Sociology, Law, and ICT. As the program progresses, students are introduced to specialized analytics courses including Business Research Methods, Predictive Analytics, Data Visualization, Business Intelligence, Machine Learning for Business, Artificial Intelligence in Decision-Making, Big Data Analytics, Financial Analytics, and Marketing Analytics.

Practical exposure is ensured through internships, field experiences, workshops, seminars, study trips, and a final-year Capstone Project/Thesis, where students solve real-world business problems using analytics tools and techniques. Graduates will be prepared to work as business analysts, data analysts, data scientists, consultants, and strategists in multinational corporations, government organizations, financial institutions, NGOs, and startups—or to launch their own data-driven entrepreneurial ventures.

Program Objectives (POs)

The BSBA program aims to:

- **PO1:** Provide students with strong foundations in business, economics, statistics, and management principles.
- **PO2:** Develop expertise in data analytics, predictive modeling, and business intelligence tools.
- **PO3:** Equip students with problem-solving and decision-making skills using statistical, computational, and machine learning techniques.
- **PO4:** Introduce students to contemporary technologies such as artificial intelligence, big data, cloud computing, and digital analytics platforms.
- **PO5:** Enhance students' ability to critically evaluate data-driven business strategies and organizational performance.
- **PO6:** Foster research, innovation, and ethical responsibility in the use of analytics for decision-making.
- **PO7:** Cultivate leadership, teamwork, and communication skills for global and digital business environments.
- **PO8:** Prepare students for professional certifications (e.g., Google Data Analytics, Microsoft Power BI, SAS, Tableau) and entrepreneurial ventures in analytics and digital business.

Total Credit Hours and Non- Credit Hours Distribution

In accordance with the Credit Hours Scheme of National Business Education Accreditation Council and Higher Education Commission, The Bachelor of Business Administration or BS BUSINESS ANALYTICS (Hons) is of 130 credit hours. The distribution of Credit and Non credit hours is as follows

- I. Total General Education = 32

II.	Total Interdisciplinary	=12
III.	Total Major Courses	= 78
IV.	Fehm e Quran	= 02
V.	Pak Study	= 02
VI.	Internship	= 03
VII.	Capstone Project	= 03
Total Credit Hours		= 130

Note: The first two years shall be considered Associate degree offered at affiliated colleges or a student of BS BUSINESS ANALYTICS will use it as exit for Associate Degree.

General Education (Gen-Ed) Requirements

The provision of general education courses ensures that every student is acquainted with the broad variety of fields of inquiry and approaches to knowledge and skills. It offers students an intellectual foundation for their academic, professional, and personal attributes while focusing on critical thinking and writing, speaking or quantitative skills. The general education component is 30 credits hours including Associate Degrees.

Detail of the general education requirements (i.e., courses) as per HEC requirements is given in the Table 1 below:

Table 1: HEC Provided Criteria and Guidelines (Source: HEC)

Course	General Education Cluster	Courses	Credit Hours
Gen-Ed-1	Arts and Humanities *	1	02
Gen-Ed-2	Natural Sciences *	1	3 (2+1)
Gen-Ed-3	Social Sciences *	1	02
Gen-Ed-4&5	Functional English ** Expository Writing **	1	03+3
Gen-Ed-6	Quantitative Reasoning ** Denoted by Quantitative Reasoning -1 and -2)	2	3+3
Gen-Ed-7	Islamic Studies ** (OR) Religious Education/Ethics in lieu of Islamic Studies only for non-Muslim students	1	02
Gen-Ed-08	Ideology and Constitution of Pakistan **	1	02
Gen-Ed-09	Information and Communication Technologies (ICT) **	1	3 (2+1)
Gen-Ed-10	Entrepreneurship **	1	02
Gen-Ed-11	Civics and Community Engagement **	1	02
	Total	12	30
	* University may offer any course within the specific broader subject domain/cluster to meet the given credits. ** HEC designed model courses may be used by the university.		
Field work	Three credit hours (3 CH fixed) and shall be offered in 5th semester onwards		
Project/Thesis	Three credit hours (3 CH fixed) and shall be offered in last semester		

In light of the above table the department can opt any subject from the cluster of the Following General Education Subjects shown in Table 2:

Table 2: Cluster of General Education Courses as per HEC/ University Requirements

Course	Subjects General Education Cluster	Courses	Credit Hours
Gen-Ed-1	<u>Arts and Humanities *</u> • Introduction to Philosophy • Islamic History • Seerat Un Nabi	1	02
Gen-Ed-2	<u>Natural Sciences *</u> • General Science • Biology • Environmental Science	1	3
Gen-Ed-3	Social Sciences * • Sociology • Law • Introduction to Economics	1	02
Gen-Ed-4&5	<u>Gen-Ed-4: Functional English **</u> Course: Functional English <u>Gen-Ed-5: Expository Writing **</u> Course: Expository Writing.	2	06 (3+3)
Gen-Ed-6	<u>Quantitative Reasoning **</u> Course: Basic Mathematics Course: Basic Statistics	2	06 (3+3)
Gen-Ed-7	<u>Islamic Studies **</u> Course: Islamic Studies / Ethics for Non- Muslims	1	02
Gen-Ed-8	<u>Ideology and Constitution of Pakistan **</u> Course : Ideology and Constitution of Pakistan	1	02
Gen-Ed-09	<u>Applications of Information and Communication**</u> Course: Information and Communication Technologies (ICT)	1	3 (2+1)
Gen-Ed-10	<u>Entrepreneurship **</u> Course: Entrepreneurship	1	02
Gen-Ed-11	<u>Civics and Community Engagement **</u> Course: Civics and Community Engagement	1	02
	Total	12	30
Field work	Three credit hours (3 CH) and shall be offered in 5th semester onwards	6- 8 Weeks Relevant Field Work	03
Project/Thesis	Three credit hours (3 CH) and shall be offered in last semester		03
* The Department can choose any course from the provided list of courses. ** The Department must select the specific subject listed.			

Major (Disciplinary) Requirements:

A major is the academic discipline or a specialized area of study in which the degree is offered. The minimum requirement to complete a single major is 75 credit hours, while in BS BUSINESS ANALYTICS it is 84 credit hours keeping in line the degree with NBEAC requirements. This is valid for all undergraduate/equivalent degree programs except for Associate Degrees (where 36 CH minimum).

Interdisciplinary/Allied Courses: All the undergraduate/equivalent degree programs shall be comprised of a mandatory set of minimum 12 credit hours for interdisciplinary/allied courses. This is valid for all undergraduate/equivalent degree programs except for Associate Degrees, where the credit hours of interdisciplinary/allied courses may be less or more than 12 credits.

Minor (Optional):

Minor is an option comprised of secondary concentration of courses, ordinarily in an academic discipline that complements the major. The requirements and prerequisites for a minor shall be determined by the concerned department provided that a minor must not be less than 12 credit hours.

Admission Eligibility Criteria

1. Complete Course of BS BUSINESS ANALYTICS consists of 130 credit hours.
2. Applicants should have minimum 45% in Higher Secondary School Certificate (F.Sc, FA) or equivalent from a recognized Institute/Board.
3. Applicants having “A” levels or other foreign qualifications must provide an equivalence certificate issued by Intermediate Board Committee of Chairmen (IBCC).
4. Any Other criteria being notified University of Swat

Admission Eligibility Criteria Late Entry (4th or 5th Semester) and Early Exit as associate degree in BS BUSINESS ANALYTICS

The University of Swat associate degree Policy and Late Entry Policy shall be strictly considered as and when notified. The basic requirements of the department are as follows:

- i. The applicant should have at least 14 years of education to late enter BS Business Analytics Degree.
- ii. The applicant has deficient credit hours shall be dealt case to case basis or as per the policy of university of Swat.
- iii. If an applicant has deficient credit hours, and he/she willing to enter BS Business Analytics degree after completion of his / her 14 years education, shall be admitted either to 4th Semester or 5th Semester. The deficient credit hours shall be determined on case-to-case basis.
- iv. If a student has completed the credit hours required for completion of Associate degree during studying of BS Business Analytics degree, he / she shall be allowed to opt for associate degree on his/her own request at any stage of the study, as per policy of the university.
- v. The fourth semester of the current scheme of study shall be consider bridging semester for late entry or the deficient courses may be covered as and when offered in different semesters and the credit hours can be reduce or increase on case to case basis.

Learning Outcomes (LOs)

By the end of the program, graduates will be able to:

- **LO1:** Demonstrate knowledge of business, economics, finance, statistics, and management as applied to analytics.

- **LO2:** Apply statistical and computational tools to solve business problems and support decision-making.
- **LO3:** Design predictive and prescriptive analytics models to analyze consumer behavior, market trends, and financial performance.
- **LO4:** Interpret and communicate complex data insights through visualization and reporting tools (e.g., Tableau, Power BI).
- **LO5:** Apply artificial intelligence, machine learning, and big data techniques to business contexts.
- **LO6:** Conduct applied research using business analytics methods, simulations, and case studies.
- **LO7:** Demonstrate ethical and responsible use of data in compliance with laws, privacy regulations, and cybersecurity standards.
- **LO8:** Exhibit leadership, teamwork, entrepreneurial skills, and adaptability in local, regional, and international data-driven business environments.

Name for Lateral Entry Degree Completion (AD+2years)

- The degree awarded upon successful completion of two additional years (after Associate Degree) shall be termed as: BS Business Analytics

Workshops, Seminars & Exhibition Plan – BS Business Analytics

1. Mandatory Industry Interaction

- Each semester shall include two (02) mandatory workshops/seminars.
- Renowned experts from business analytics, data science, fintech, AI, consulting firms, corporate sector, banking, supply chain, e-commerce, NGOs, and multinational companies will be invited.
- Participation is compulsory for all students of BS Business Analytics.

2. Funding & Financial Support

- Honoraria for guest speakers, refreshments, banners, and souvenirs shall be financed through the Departmental Developmental Fund (DDF).
- All expenditures will follow the University's financial rules and approval processes.

3. Souvenirs for Guest Speakers

- Each guest speaker will be presented with a souvenir (University shield, branded plaque, or customized gift).
- Souvenirs will carry the University of Swat logo and Centre for Management & Commerce branding.
- This initiative will help build long-term relationships with industry professionals and project a professional image of the University.

4. Learning Outcomes

These workshops/seminars aim to:

- Provide real-world exposure to the analytics and corporate sector.
- Bridge the gap between academic theory and business data practices.
- Update students on emerging trends in business analytics, AI, fintech, and digital transformation.
- Enhance networking opportunities with industry practitioners and alumni.

5. Semester-Wise Examples of Workshop Themes

(Examples – other relevant topics may also be included)

- **Semester 1–2 (Foundation):**
 - “Introduction to the Data-Driven Business World”

- “Fundamentals of Business Analytics & Digital Mindset”
- **Semester 3–4 (Intermediate):**
 - “Data-Driven Decision-Making in Organizations”
 - “Business Communication & Data Storytelling Skills”
- **Semester 5–6 (Advanced Skills):**
 - “Applications of Machine Learning in Business”
 - “Financial Analytics, Risk Assessment & Predictive Models”
- **Semester 7–8 (Strategic & Professional):**
 - “Artificial Intelligence, Big Data & Future of Digital Business”
 - “Launching Data-Driven Startups / Analytics Consulting Firms”

6. Exhibition

- One BS Business Analytics Annual Exhibition shall be organized.
- Students will showcase their data projects, dashboards, predictive models, machine learning applications, business intelligence reports, and entrepreneurial ideas.
- Industry experts, alumni, and professionals will be invited to evaluate and guide students.
- This will promote creativity, innovation, and industry–academia linkages.

7. Faculty Coordinator

- One faculty member will be officially notified as the Workshops, Seminars, and Exhibition Coordinator for all undergraduate and graduate programs.
- The coordinator will oversee planning, execution, reporting, and student participation.
- Responsibilities include:
 - Scheduling events,
 - Ensuring industry relevance,
 - Managing logistics,
 - Maintaining event records (photos, videos, attendance, reports),
 - Ensuring media coverage (press clippings, social media dissemination).

8. Integration with Curriculum (Without Marks)

- Students must prepare a short reflection note (1–2 pages) after each workshop/seminar and submit it to the Coordinator for record purposes.
- Instead of marks, students will be awarded a Certificate of Participation for each workshop/seminar they attend (Rs.100 per certificate to cover cost).
- Certificates will be signed by the Director, Centre for Management & Commerce, and the Coordinator.
- This will serve as official recognition of participation and add value to students’ academic **and professional profiles**.

9. Industry Trips (Annual)

- At least one (01) industry trip per academic year will be organized for BS Business Analytics students.
- Destinations may include:
 - Banks & financial institutions (Fintech divisions)
 - Analytics consulting firms
 - Multinational corporations (data-driven operations)
 - E-commerce & retail analytics companies
 - Telecom & technology companies
 - Government and semi-government organizations (data policy, NADRA, SBP etc.)
 - NGOs and development sector organizations using analytics

- **Objectives:**

- Provide students with practical insights into how businesses apply analytics in professional environments.
- Enhance students' understanding of corporate culture, management practices, and data-driven strategies.
- Strengthen university–industry linkages for future internships, projects, and job opportunities.

BS Business Analytics (4 YEARS PROGRAMM)
SCHEME OF STUDIES

Degree Requirements:

Area	Cr. Hrs
General Education	32
Major	78
Interdisciplinary/Allied Courses	12
Compulsory	02
Field Experience /Internship	03
Capstone Project	03
Total Credit Hours	130

Semester -1			
Course Codes	Title	Cred. Hrs.	Area
ENV-106	Environmental Science	3 (2+1)	Gen-Ed-2
LAW-108	Law	2(2+0)	Gen-Ed-3
ENG-111	Functional English	3 (3+0)	Gen-Ed-4
PSY-110	Introduction to Psychology	3 (3+0)	Inter-Disp-1
BBA-101	Principles of Management	3(3+0)	Major 1
BBA 102	Principles of Marketing	3(3+0)	Major 2
Total Credit Hours		19	

Semester 2			
Code	Title	Cred. Hrs.	
ENG-152	Expository Writing	3(3+0)	Gen-Ed-5
MAT-153	Basic Mathematics	3(3+0)	Gen-Ed-6
STA-154	Basic Statistics	3 (3+0)	Gen-Ed-7
FEQ-155/ETH-108	Fehm-e-Quran-I / Ethics-I (For Non Muslim)	1(1+0)	Gen-Ed-8
BUA-151	Human Resource Management	3(3+0)	Major 3
BUA-152	Financial Accounting I	3(3+0)	Major 4
Total Credit Hours		16	

Semester 3			
Code	Title	Cred. Hrs.	Area
IST-202/ETB-202	Islamic Studies /Ethical Behavior-II	2(2+0)	Gen Ed-9
ICP-204	Ideology and Constitution of Pakistan	2(2+0)	Gen-Ed-10
ICT-205	Application of Information and Communication Technologies	3 (2+1)	Gen-Ed-11
BUA-201	Marketing Management	3 (3+0)	Major 5
BUA-202	Financial Accounting II	3 (3+0)	Major 6
BUA -203	Business Communication	3 (3+0)	Major 7
Total Credit Hours		16	

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Semester 4			
Code	Title	Cred. Hrs.	Area
ENT-252	Entrepreneurship	2 (2+1)	Gen-Ed-12
CCE-253	Civic and Community Engagement	2(2+1)	Gen-Ed-13
FEQ-255/ETH-158	Fehm-e-Quran-II / Ethics-II	1(1+0)	Gen-Ed-14
PST-254	Pakistan Studies	2(2+0)	Compulsory
BUA-252	Business Finance	3 (3+0)	Major 8
BUA-253	Introduction to Business Analytics	3 (3+0)	Major 9
BUA-253	Introduction to Data Base Management	3 (3+0)	Major 10
Total Credit Hour		16	

Semester 5			
BUA-301	Advanced Business Analytics	3 (3+0)	Major 11
BUA-302	Management Information System	3 (3+0)	Major 12
BUA-303	Cost Accounting	3 (3+0)	Major 13
BUA-350	Field Experience/Internship*	3 (3+0)	Internship
SOC-101	Sociology	3 (3+0)	Inter-Disp-2
ECO-101	Principles of Micro Economics	3 (3+0)	Inter-Disp-3
Total Credit Hours		18	

*The internship may be offered any time after the completion of the fifth semester and must be completed before the award of the degree. The marks/grades of the internship shall be recorded in the relevant semester as per University policy. The placement of students for internships will be subject to the availability of opportunities and vacancies in the concerned organizations

Semester 6			
Code	Title	Cred. Hrs.	Area
BUA-351	Business Research Methods	3 (3+0)	Major 14
BUA-352	Machine Learning Fundamentals for Business	3 (3+0)	Major 15
BUA-353	Financial Analytics	3 (3+0)	Major 16
BUA-354	Human Resource Analytics	3 (3+0)	Major 17
BUA-303	Operations Management	3 (3+0)	Major 18
ECO-151	Principles of Macro Economics	3 (3+0)	Inter-Disp-4
Total Credit Hours		18	

Semester 7			
Code	Title	Cred. Hrs.	Area
BUA- 401	Business Intelligence & Data Warehousing	3 (3+0)	Major 19
BUA-402	E-Commerce and Digital Business Model	3 (3+0)	Major 20
BUA-403	Strategic Analytics for Competitive Advantage	3 (3+0)	Major 21
BUA-404	Supply Chain & Operations Analytics	3 (3+0)	Major 22
BUA-405	Sustainable Business Practices	3 (3+0)	Major 23
Total Credit Hours		15	

Semester 8			
Code	Title	Cred. Hrs.	Area
BUA-451	AI and Automation in Business analytics	3 (3+0)	Major 24
BUA-452	Marketing Analytics	3 (3+0)	Major 25
BUA-43	Project Management Analytics	3 (3+0)	Major 26
BUA-499	Capstone Project/Thesis	3(3+0)	Project
Total Credit Hours		12	