

## BS Computational Statistics and Data Analytics

Course Title	Course Code	Course Type	Credit Hour
<b>Semester 1</b>			
<u>GEN(NS)</u>		General	<u>3</u>
Functional English	GENG-101	General	<u>3</u>
Civics and Community Engagement	GCCE-101	General	<u>2</u>
Islamic Studies / Ethics (for Non-Muslims)	GISL-101 / GETH-101	General	<u>2</u>
Introduction to Statistics	CSTA-101	Major	<u>3</u>
Calculus	SMTH-101	Major	<u>3</u>
Tarjuma-e-Quran	HQ-001	Compulsory	<u>0</u>
			<b>Total Credit Hours 16</b>
<b>Semester 2</b>			
<u>GEN(AH)</u>		General	<u>2</u>
Quantitative Reasoning (I)	GQR-101	General	<u>3</u>
Entrepreneurship	GENT-101	General	<u>2</u>
Ideology and Constitution of Pakistan	GICP-101	General	<u>2</u>
Linear Algebra	SMTH-102	Major	<u>3</u>
Probability Theory and Distributions	CSTA-102	Major	<u>3</u>
Tarjuma-e-Quran	HQ-002	Compulsory	<u>1</u>
			<b>Total Credit Hours 16</b>
<b>Semester 3</b>			
Applications of Information and Communication Technologies	GICT-201	General	<u>3</u>
Expository Writing	GENG-201	General	<u>3</u>
Statistical Computing	STAT-205	Major	<u>3</u>
Inferential Statistics	CSTA-202	Major	<u>3</u>
Applied Regression Analysis	CSTA-201	Major	<u>3</u>
Tarjuma-e-Quran	HQ-003	Compulsory	<u>0</u>
			<b>Total Credit Hours 15</b>
<b>Semester 4</b>			
<u>GEN(SS)</u>		General	<u>2</u>
Quantitative Reasoning (II)	GQR-202	General	<u>3</u>
Programming with R	STAT-203	Major	<u>3</u>
Introduction to Programming	CSTA-204	Major	<u>3</u>
Applied Time Series Analysis	CSTA-203	Major	<u>3</u>
Tarjuma-e-Quran	HQ-004	Compulsory	<u>1</u>
			<b>Total Credit Hours 15</b>
<b>Semester 5</b>			
Interdisciplinary		Interdisciplinary	<u>3</u>
Interdisciplinary		Interdisciplinary	<u>3</u>
Distribution Theory	CSTA-303	Major	<u>3</u>
Programming with Python	CSTA-302	Major	<u>3</u>
Multivariate Analysis	STAT-305	Major	<u>3</u>
Tarjuma-e-Quran	HQ-005	Compulsory	<u>0</u>
			<b>Total Credit Hours 15</b>
<b>Semester 6</b>			
Interdisciplinary		Interdisciplinary	<u>3</u>
Interdisciplinary		Interdisciplinary	<u>3</u>
Image Analysis	CSTA-306	Major	<u>3</u>
Bayesian Analysis	CSTA-305	Major	<u>3</u>
Machine Learning	CSTA-304	Major	<u>3</u>
Tarjuma-e-Quran	HQ-006	Compulsory	<u>1</u>
			<b>Total Credit Hours 16</b>
<b>Semester 7</b>			
Fieldwork	CSTA-401	Major	<u>3</u>
Elective-I		Major	<u>3</u>
Research Methods	STAT-404	Major	<u>3</u>
Artificial Intelligence (AI)	CSTA-403	Major	<u>3</u>
Industrial Statistics	CSTA-402	Major	<u>3</u>
Tarjuma-e-Quran	HQ-007	Compulsory	<u>0</u>
Elective-II		Major	<u>3</u>
			<b>Total Credit Hours 18</b>
<b>Semester 8</b>			
Capstone Project	CSTA-405	Major	<u>3</u>
Elective-III		Major	<u>3</u>
Natural Language Processing	CSTA-408	Major	<u>3</u>
Spatial Analysis	CSTA-407	Major	<u>3</u>
Big Data Analysis	CSTA-406	Major	<u>3</u>
Tarjuma-e-Quran	HQ-008	Compulsory	<u>1</u>
Elective-IV		Major	<u>3</u>
			<b>Total Credit Hours 19</b>

Signature