

**13. COURSES OF STUDY AND SCHEME OF ASSESSMENT****BSc APPLIED SCIENCE****(2021 Regulations)****Minimum Credits to be Earned : 145**

Code No.	Course	Hours / Week				Maximum Marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
<b>SEMESTER I</b>									
21S101	Calculus and its Applications	3	2	-	4	50	50	100	PC
21S102	Differential Equations	2	2	-	3	50	50	100	PC
21S103	Properties of Matter and Acoustics	2	2	-	3	50	50	100	PC
21S104	General Chemistry	3	-	-	3	50	50	100	PC
21S105	Physical Chemistry I	2	2	-	3	50	50	100	PC
21S106	English	3	-	-	3	50	50	100	HS
21S107	Properties of Matter and Acoustics Laboratory	-	-	4	2	100	-	100	PC
21S108	Chemistry Laboratory	-	-	4	2	100	-	100	PC
21S109	Personality and Character Development	0	0	**Refer Sem 2 and footnote					MC
	<b>Total 31 hrs</b>	<b>15</b>	<b>8</b>	<b>8</b>	<b>23</b>	<b>500</b>	<b>300</b>	<b>800</b>	
<b>SEMESTER II</b>									
21S201	Linear Algebra	2	2	-	3	50	50	100	PC
21S202	C programming	3	0	-	3	50	50	100	PC
21S203	Mathematical Physics	2	2	-	3	50	50	100	PC
21S204	Oscillations , Waves and Optics	3	0	-	3	50	50	100	PC
21S205	Physical Chemistry II	2	2	-	3	50	50	100	PC
21S206	Professional English	3	-	-	3	50	50	100	HS
21S207	Oscillations , Waves and Optics Laboratory	-	-	4	2	100	-	100	PC
21S208	Physical Chemistry Laboratory	-	-	4	2	100	-	100	PC
21S209	C programming Laboratory	-	-	4	2	100	-	100	PC
21S109	Personality and Character Development	0	0	**Refer footnote					MC
	<b>Total 33 hrs</b>	<b>15</b>	<b>6</b>	<b>12</b>	<b>24</b>	<b>600</b>	<b>300</b>	<b>900</b>	

CA - Continuous Assessment

FE - Final Examination

\*\* - Total 40 hrs in semesters I and II put together (Grade: Completed/Not Completed)

**CAT-Category; HS – Humanities& Social Sciences; PC – Professional Core; PE – Professional Elective; OE- Open Elective; SEC – Skill Enhancement Course; MC – Mandatory Course; EEC - Employability Enhancement course**

**BSc APPLIED SCIENCE****(2021 Regulations)**

Code No.	Course	Hours / Week				Maximum Marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
<b>SEMESTER III</b>									
21S301	Real Analysis	2	2	-	3	50	50	100	PC
21S302	Probability and statistics	3	-	-	3	50	50	100	PC
21S303	Atomic And Nuclear Physics	3	-	-	3	50	50	100	PC
21S304	Electricity And Magnetism	2	2	-	3	50	50	100	PC
21S305	Organic Chemistry I	2	2	-	3	50	50	100	PC
21S306	Inorganic Chemistry I	3	-	-	3	50	50	100	PC
21S307	Mathematical Computing Laboratory	-	-	4	2	100	-	100	PC
21S308	Electricity and Magnetism Laboratory	-	-	4	2	100	-	100	PC
21S309	Inorganic Chemistry Laboratory	-	-	4	2	100	-	100	PC
	<b>Total 33 hrs</b>	<b>15</b>	<b>6</b>	<b>12</b>	<b>24</b>	<b>600</b>	<b>300</b>	<b>900</b>	
<b>SEMESTER IV</b>									
21S401	Complex Variables and Transforms	2	2	-	3	50	50	100	PC
21S402	Data Structures	2	2	-	3	50	50	100	PC
21S403	Analog and Digital Electronics	3	-	-	3	50	50	100	PC
21S404	Mechanics and Theory of Relativity	2	2	-	3	50	50	100	PC
21S405	Organic Chemistry II	3	-	-	3	50	50	100	PC
21S406	Inorganic Chemistry II	3	-	-	3	50	50	100	PC
21S407	Analog and Digital Electronics Laboratory	-	-	4	2	100	-	100	PC
21S408	Organic Chemistry Laboratory	-	-	4	2	100	-	100	PC
21S0__	Skill Enhancement Course I*	2	2	-	3	50	50	100	SEC
	<b>Total 33 hrs</b>	<b>17</b>	<b>8</b>	<b>8</b>	<b>25</b>	<b>550</b>	<b>350</b>	<b>900</b>	

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 \* - Should be selected from the same cluster

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## BSc APPLIED SCIENCE

(2021 Regulations)

Code No.	Course	Hours / Week				Maximum Marks			
		Lecture	Tutorial	Practical	Credits	CA	FE	Total	CAT
<b>SEMESTER V</b>									
21S501	Operations Research	2	2	-	3	50	50	100	PC
21S502	Abstract Algebra	2	2	-	3	50	50	100	PC
21S503	Solid State Physics	3	-	-	3	50	50	100	PC
21S504	Quantum Mechanics	2	2	-	3	50	50	100	PC
21S505	Applied Chemistry	3	-	-	3	50	50	100	PC
21S506	Analytical Chemistry	2	2	-	3	50	50	100	PC
21S507	Solid State Physics Laboratory	-	-	4	2	100	-	100	PC
21S508	Applied Chemistry Laboratory	-	-	4	2	100	-	100	PC
21OS__	Open Elective	3	-	-	3	50	50	100	OE
	<b>Total 33 hrs</b>	<b>17</b>	<b>8</b>	<b>8</b>	<b>25</b>	<b>550</b>	<b>350</b>	<b>900</b>	
<b>SEMESTER VI</b>									
21S601	Environmental Science	3	-	-	3	50	50	100	PC
21S0__	Professional Elective I*	3	-	-	3	50	50	100	PE
21S0__	Professional Elective II*	3	-	-	3	50	50	100	PE
21S0__	Professional Elective III*	3	-	-	3	50	50	100	PE
21S0__	Professional Elective IV*	3	-	-	3	50	50	100	PE
21S610	Project Work and Viva Voce	-	-	12	6	50	50	100	EEC
21S0__	Skill Enhancement Course II *	2	2	-	3	50	50	100	SEC
	<b>Total 31 hrs</b>	<b>17</b>	<b>2</b>	<b>12</b>	<b>24</b>	<b>350</b>	<b>350</b>	<b>700</b>	

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\* - All electives in the respective category must be opted from the same cluster

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**PROFESSIONAL ELECTIVES (PE)****Mathematics and Computer Science Cluster**

- 21S001 Numerical Methods
- 21S002 Graph Theory
- 21S003 Discrete Mathematics
- 21S004 Optimization Techniques
- 21S005 Stochastic processes
- 21S006 Machine Learning
- 21S007 Artificial Intelligence
- 21S008 Cyber Security
- 21S009 Number Theory

**Physics Cluster**

- 21S016 Laser Physics and Applications
- 21S017 Semiconductor Physics and Devices
- 21S018 Heat and Thermodynamics
- 21S019 Characterization Techniques in Materials Science
- 21S020 Linear Integrated Circuits
- 21S021 Nanomaterials and Applications
- 21S022 Science of colour

**Chemistry Cluster**

- 21S031 Polymer Chemistry
- 21S032 Environmental Chemistry
- 21S033 Applied Electrochemistry
- 21S034 Chemistry of Nanomaterials
- 21S035 Pharmaceutical Chemistry
- 21S036 Textile Chemistry and Textile chemical processing
- 21S037 Industrial Chemistry
- 21S038 Biochemistry
- 21S039 Instrumental Methods of Chemical Analysis
- 21S040 Green Chemistry

**SKILL ENHANCEMENT COURSES (SEC)****Mathematics and Computer Science Cluster**

- 21S055 Mathematical Modelling
- 21S056 Analytical Geometry
- 21S057 Business Statistics
- 21S058 Statistical Quality Control and Reliability
- 21S059 Object Oriented Programming
- 21S060 Database Management System
- 21S061 Web Designing
- 21S062 Enterprise Computing
- 21S063 Mobile Application Development
- 21S064 Operating System
- 21S065 Advanced Data Structures

**Physics Cluster**

- 21S070 Computerised Measurements with Open Source Tools
- 21S071 Thermal Properties
- 21S072 Optical Measurements
- 21S073 Electrical Measurements
- 21S074 Magnetic Measurements
- 21S075 Plasma Physics and Applications
- 21S076 Crystal Growth Techniques
- 21S077 Ceramics and Composites

**Chemistry Cluster**

- 21S085 Chemistry of Water Technology
- 21S086 Polymer Science and Technology
- 21S087 Food Chemistry
- 21S088 Chemistry of Industrially Important Materials
- 21S089 Corrosion Science and Engineering
- 21S090 Ceramic Materials

**OPEN ELECTIVES****Mathematics and Computer Science**

- 21OS01 Python Programming  
 21OS02 Design and Analysis of Algorithms  
 21OS03 Mathematical Finance

**PHYSICS**

- 21OS11 Condensed Matter Physics  
 21OS12 Classical Mechanics and Statistical Physics  
 21OS13 Measurement and Instrumentation

**CHEMISTRY**

- 21OS21 Bioinorganic Chemistry  
 21OS22 Surface Finishing and Coating Technology  
 21OS23 Bioelectrochemistry  
 21OS24 Chemical Sensors and Biosensors  
 21OS25 Chemistry of Concrete  
 21OS26 Biomaterials  
 21OS27 Composite Materials  
 21OS28 Advanced Oxidation Processes for Wastewater Treatment

**ENGLISH**

- 21OS31 English and Soft Skills for Employability  
 21OS32 English for Competitive Examinations

**Summary of Credit Distribution**

BSc APPLIED SCIENCE								
S. No	Course Work subject Area	Credits Per Semester						Total Credits
		I	II	III	IV	V	VI	
1	HS	3	3	0	0	0	0	6
2	PC	20	21	24	22	22	3	112
3	PE	0	0	0	0	0	12	12
4	SEC	0	0	0	3	0	3	6
5	OE	0	0	0	0	3	0	3
6	EEC	0	0	0	0	0	6	6
	<b>Total</b>	23	24	24	25	25	24	<b>145</b>

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