

# GLA UNIVERSITY

## MATHURA



**Institute of Engineering and Technology**

**Department of**

**Computer Engineering & Applications**

**Bachelor of Technology- CSE**

**Specialization**

**AIML**

**(2023 onwards)**

## Credits Distributions

<b>Sr. No.</b>	<b>Category</b>	<b>No. of Credits</b>
1	Humanities and Social Sciences (HS)	16
2	Basic Sciences (BS)	21
3	Engineering Sciences (ES)	08
4	Professional Core (PC)	69
5	Professional Elective (PE)	32
6	Open Elective (OE)	16
7	Project Work (PW)	18
8	Mandatory Non-Credit Courses (MNC) (4 Courses)	-
<b>Total</b>		<b>180</b>

## First Semester (AIML)

S. NO.	CODE	CAT	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1.	BCSC xxxx	PC	PROBLEM SOLVING AND C PROGRAMMING	2	0	0	2	2
2.	BMAS xxxx	BS	Mathematics - I (Linear algebra)	3	1	0	4	4
3.	APFJ xxxx	PW	Project based learning	3	0	0	3	3
4.	BPHS xxxx	BS	Engineering Physics	2	1	0	3	4
5.	BELH xxxx	HS	English Communication I	2	0	0	2	2
6.	BCSE xxxx	PE	Introduction Artificial Intelligence.	3	0	0	3	3
<b>PRACTICALS</b>								
1.	BCSC xxxx	PC	PROBLEM SOLVING AND C PROGRAMMING Lab	0	0	4	2	4
2.	APFJ xxxx	PW	Project based learning lab	0	0	2	1	4
3.	BPHS xxxx	ES	Engineering Physics Lab	0	0	2	1	2
4.	BELH xxxx	HS	English Communication Lab I	0	0	2	1	2
5.	BCSE xxxx	PE	Introduction to Artificial Intelligence Lab	0	0	2	1	2
<b>TOTAL</b>				<b>15</b>	<b>02</b>	<b>12</b>	<b>23</b>	<b>31</b>

## Second Semester (AIML)

S. NO.	CODE	CAT	SUBJECT	TEACHING SCHEME			CREDIT S	CONTACTS HRS/WK
				L	T	P		
1.	BCSC xxxx	PC	Programming in Python	2	0	0	2	2
2.	BCSS xxxx	BS	Mathematics - II Probability and Statistics	3	1	0	4	4
3.	BCSC xxxx	PC	Database Technology	2	0	0	2	3
4.	BCSE xxxx	PE	Data engineering	2	0	0	2	2
5.	BELH xxxx	HS	English Communication - II	2	0	0	2	2
6.	BCSG xxxx	ES	Digital Logic Design	3	0	0	3	3
7.	APFJ xxxx	PW	Project based learning	3	0	0	3	3
<b>PRACTICALS</b>								
1.	BCSC xxxx	PC	Programming in Python Lab	0	0	4	2	4
2.	BCSC xxxx	PC	Database Technology Lab	0	0	4	2	4
3.	BCSE xxxx	PE	Data Engineering Lab	0	0	4	2	4
4.	BELH xxxx	HS	English Language Lab - II	0	0	2	1	2
5.	BCSG xxxx	ES	Digital Logic Design Lab	0	0	2	1	2
6.	BCSE xxxx	PE	Project based learning LAB	0	0	2	1	2
<b>TOTAL</b>				<b>17</b>	<b>1</b>	<b>18</b>	<b>27</b>	<b>37</b>

## Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1	BCSC 00xx	Web Technology - I	2	0	0	0	2	2	
2.	BCSC 0061	PROBLEM SOLVING AND C PROGRAMMING	2	0	0	0	2	2	
3.	BCSS 0152	Programming in Python	2	0	0	0	2	2	
4.	BCSC 0165	Database Technology	3	0	0	0	3	3	
5.	BCSC 00xx	Data Structures and Algorithms	3	0	0	0	3	3	Programming
6.	BCSC 00xx	Object Oriented Programming	2	0	0	0	2	2	Programming
7.	BCSC 00xx	Web Technology - II	2	0	0	0	2	2	
8.	BCSC 00xx	Algorithms Design & Analysis	4	0	0	0	4	4	Programming, Data Structures
9.	BCSC 00xx	Operating System	3	0	0	0	3	3	
10.	BCSC 00xx	Data Communication & Network System	3	0	0	0	3	3	
11.	BCSC 00xx	Software Engineering and Project Management	3	0	0	0	3	3	
12.	BCSC 00xx	High Performance Computing	3	0	0	0	3	3	
13.	BCSC 00xx	Theory of Computation	4	1	0	0	4	4	
14.	BCSC 00xx	Emerging Technologies and Business Domains	3	0	0	0	3	3	
15.	BCSC 00xx	Introduction to Machine Learning	3	0	0	0	3	3	
16.	BCSC 00xx	Optimization Techniques	3	1	0	0	4	4	
17.	BCSC 00xx	Computer Organization & Microprocessor	3	0	0	0	3	3	
<b>PRACTICALS</b>									
1.	BCSC 0859	Web Technology Lab - I	0	0	4	0	2	4	
2.	BCSC 0858	Computer Programming Lab- I	0	0	4	0	2	4	
3.	BCSC 0760	Computer Programming Lab- II	0	0	4	0	2	4	
4.	BCSC 0861	Database Technology Lab	0	0	2	0	1	2	
5.	BCSC 00xx	Data Structures and Algorithms Lab	0	0	4	0	2	4	Programming Lab
6.	BCSC 00xx	Object Oriented Programming Lab	0	0	4	0	2	4	Programming Lab
7.	BCSC 00xx	Web Technology Lab - II	0	0	4	0	2	4	

8.	BCSC 00xx	Algorithms Design & Analysis Lab	0	0	2	0	1	2	Programming, Data Structures
9.	BCSC 00xx	Operating System Lab	0	0	2	0	1	2	
10.	BCSC 00xx	Data Communication & Network System Lab	0	0	2	0	1	2	
11.	BCSC 00xx	Software Engineering and Project Management Lab	0	0	2	0	1	2	
12.	BCSC 00xx	High Performance Computing Lab	0	0	2	0	1	2	
13.	BCSC 00xx	Neural Network and Deep Learning Lab	0	0	2	0	1	4	
14.	BCSC 00xx	Computer Organization & Microprocessor Lab	0	0	2	0	1	2	
<b>Total</b>			<b>47</b>	<b>1</b>	<b>42</b>	<b>0</b>	<b>69</b>	<b>90</b>	

### Mandatory Non-Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSC 00xx	MNG-I	2	0	0	0	0	2	
2.	BCSC 00xx	MNG-II	2	0	0	0	0	2	
3.	BCSC 00xx	MNG-III	2	0	0	0	0	2	
4.	BCSC 00xx	MNG-IV	2	0	0	0	0	2	
<b>TOTAL</b>			<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	

### Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1.	BELH 0001	English Communication – I	2	0	0	0	2	2	
2.	BELH 0002	English Communication – II	2	0	0	0	2	2	
3.	BCSC 00xx	Skill Enhancement Course- I	1	0	2	0	2	2	
4.	BCSC 00xx	Skill Enhancement Course- II	1	0	2	0	2	2	
<b>PRACTICALS</b>									

1.	BELH 0801	English Language Lab – I	0	0	2	0	1	2	
2.	BELH 0808	English Language Lab – II	0	0	2	0	1	2	
3.	BCSC 00xx	Soft Skills – I	0	0	2	0	1	2	
4.	BCSC 00xx	Soft Skills – II	0	0	2	0	1	2	
5.	BCSC 00xx	Soft Skills – III	0	0	4	0	2	8	
6.	BCSC 00xx	Soft Skills – IV	0	0	4	0	2	8	
<b>TOTAL</b>			<b>6</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>16</b>	<b>32</b>	

## Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1.	BMAS 0105	Mathematics - I	3	1	0	0	4	4	
2.	BCSS 0152	Mathematics - II	3	1	0	0	4	4	
3.	BCSC 00xx	Mathematics - III	3	1	0	0	4	4	
4.	BCSC 00xx	Mathematics - IV	3	1	0	0	4	4	
5.	BPHS 1004	Engineering Physics	3	1	0	0	4	4	
<b>PRACTICALS</b>									
1.	BPHS 0801	Engineering Physics Lab	0	0	2	0	1	2	
<b>TOTAL</b>			<b>15</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>21</b>	<b>22</b>	

## Engineering Sciences

SNO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1.	BCSG 00XX	Introduction to Machine Learning	2	0	0	0	2	2	
2.	BCSG 0153	Digital Logic Design	3	0	0	0	3	3	
<b>PRACTICALS</b>									
1.	BCSG 08XX	Introduction to Machine Learning Lab	0	0	4	0	2	4	

2.	BCSG 0752	Digital System Design Lab	0	0	2	0	1	2	
<b>Total</b>			<b>8</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>08</b>	<b>11</b>	

## Open Electives

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1.	BCSC 00xx	Open Elective-I	4	0	0	0	0	4	
2.	BCSC 00xx	Open Elective -II	4	0	0	0	0	4	
3.	BCSC 00xx	Open Elective -III	4	0	0	0	0	4	
4.	BCSC 00xx	Open Elective -IV	4	0	0	0	0	4	
<b>Total</b>			<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	

## Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT	PRE- REQUISITES
			L	T	P	J			
1.	APFJ 0001	Tiny Project	0	0	0	2	2	0	
2.	BCSJ 0000	Mini- Project-I, II	0	0	0	0	2	0	2 <sup>nd</sup> Year
3.	BCSC 00xx	Mini- Project-III, IV	0	0	0	0	2	0	3 <sup>rd</sup> Year
4.	BCSC 00xx	Major Project - I	0	0	0	0	3	0	4 <sup>th</sup> Year
5.	BCSC 00xx	Major Project - II	0	0	0	0	8	0	
6.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	

## List of programme electives

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
<b>THEORY</b>									
1.	BCSE xxxx	Introduction to Artificial Intelligence	3	0	0	0	3	3	
2.	BCSE xxxx	Deep learning	3	0	0	0	3	3	
3.	BCSE xxxx	Data Engineering and Visualization	3	0	0	0	3	3	
4.	BCSE xxxx	Computational Linguistics and Natural Language Processing-I	3	0	0	0	3	3	
5.	BCSE xxxx	Applied Natural Language Processing	3	0	0	0	3	3	
6.	BCSE xxxx	Generative AI	3	0	0	0	3	3	
7.	BCSE xxxx	Computer vision	3	0	0	0	3	3	
8	BCSE xxxx	Application of Machine Learning in Industry	3	0	0	0	3	3	
9.	BCSE xxxx	Emerging Technologies-I(CC)	3	0	0	0	3	3	
10.	BCSE xxxx	Emerging Technologies-II(DevOps)	3	0	0	0	3	3	
11.	BCSE xxxx	Emerging Technologies-III(CyberSec)	3	0	0	0	3	3	
12.	BCSE xxxx	Reinforcement learning	3	0	0	0	3	3	
13.	BCSE xxxx	Certifications Microsoft	3	0	0	0	3	3	
<b>PRACTICALS</b>									
1.	BCSE xxxx	Introduction to Artificial Intelligence Lab	0	0	2	0	1	2	
2.	BCSE xxxx	Deep learning Lab	0	0	2	0	1	2	
3.	BCSE xxxx	Data Engineering and Visualization Lab	0	0	2	0	1	2	
4.	BCSE xxxx	Computational Linguistics and Natural Language Processing-I Lab	0	0	2	0	1	2	
5.	BCSE xxxx	Applied Natural Language Processing Lab	0	0	2	0	1	2	
6.	BCSE xxxx	Generative AI Lab	0	0	2	0	1	2	
7.	BCSE xxxx	Computer Vision Lab	0	0	2	0	1	2	
8.	BCSE xxxx	Application of Machine Learning in Industry Lab	0	0	2	0	1	2	
9.	BCSE xxxx	Reinforcement learning Lab	0	0	2	0	1	2	
10.	BCSE xxxx	Deep learning Lab	0	0	2	0	1	2	
11.	BCSE xxxx	Emerging Technologies-I Lab	0	0	2	0	1	2	



12.	BCSE xxxx	Emerging Technologies-II Lab	0	0	2	0	1	2	
13.	BCSE xxxx	Emerging Technologies-III Lab	0	0	2	0	1	2	
14.	BCSE xxxx	Open-Source Technologies Lab	0	0	2	0	1	2	
15.	BCSE xxxx	Project based learning lab	0	0	2	0	1	2	