



JOY UNIVERSITY

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**School of Computational Intelligence**  
**Department of Computing & Information Systems**  
**B.Tech. CSE (Artificial Intelligence and Data Science)**  
**Semester I**

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS 1111	Fundamentals of Computing	3	0	2	5	4
2.	BTDS1112	Introduction to Programming	3	0	2	5	4
3.	BTDS1113	Mathematics I	3	1	0	4	4
4.	BTDS1114	Physics I	3	1	0	4	4
5.	AEEN1111	Effective Communication	3	0	0	3	3
6.	AUAM1111	Performing Arts/Sports (Non-Graded)	3	0	0	3	0
		<b>TOTAL</b>	<b>18</b>	<b>2</b>	<b>4</b>	<b>24</b>	<b>19</b>

**Semester II**

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS1121	Python Programming	3	0	2	5	4
2.	BTDS1122	Probability, Statistics and Stochastic Processes	3	0	0	3	3
3.	BTDS1123	Mathematics II	3	1	0	4	4
4.	BTDS1124	Physics II	3	0	2	5	4
5.	BTDS1125	Discrete Structures for Computer Science	3	0	0	3	3
6.	AEV1121	Environmental Science	2	0	0	2	2
		<b>TOTAL</b>	<b>17</b>	<b>1</b>	<b>4</b>	<b>22</b>	<b>20</b>

### Semester III

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS 1211	Artificial Intelligence	3	0	0	3	3
2.	BTDS1212	Signals and Systems	3	0	0	3	3
3.	BTDS1213	Digital Design	3	0	2	5	4
4.	BTDS1214	Data Structures and Algorithms	3	0	2	5	4
5.	BTDS1215	Object-Oriented Programming	3	0	2	5	4
6.	AEPH 1213	Professional Ethics	2	0	0	2	2
7.	AUAM 1211	Indian Constitution	1	0	0	1	0
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>24</b>	<b>20</b>

### Semester-IV

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS 1221	Introduction to Data Science and Data Analytics	3	0	2	5	4
2.	BTDS1222	Database Management Systems	3	0	2	5	4
3.	BTDS1223	Design and Analysis of Algorithms	3	0	2	5	4
3.	BTDS1224	Computer organization	3	0	0	3	3
5.	BTDS1225	Operating systems	3	0	0	3	3
6.	BTDS 1226	Engineering Economics and foreign trade	3	0	0	3	3
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>6</b>	<b>24</b>	<b>21</b>

### Semester V

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS 1311	Deep Learning	3	0	2	5	4
2.	BTDS1312	Computer Networks	3	0	2	5	4
3.	BTDS1313	Computer Architecture	3	0	0	3	3
4.	BTDS 1314	Software Engineering	3	0	0	3	3
5.	BTDS1315	Programming with Java	3	0	2	5	4
6.	BTDS1316	Theory of Computation	3	1	0	4	4
7.	BTDS 1317	Principles of Management	3	0	0	3	3
<b>TOTAL</b>			<b>21</b>	<b>1</b>	<b>6</b>	<b>28</b>	<b>25</b>

### Semester VI

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS1321	Predictive Analysis	3	0	2	5	4
2.	BTDS1322	Compiler Design	3	0	0	3	3
3.	BTDS1323	Cryptography and Network Security	3	0	0	3	3
4.	BTDS1324	Realistic AI	3	0	2	5	4
5.	BTDS1325	Data Visualization	3	0	0	3	3
6.	PEDS 132#	Programme Specific Elective I	3	0	2	5	4
7.	GEDS132#	Generic Elective I	3	0	0	3	3
		<b>TOTAL</b>	<b>21</b>	<b>0</b>	<b>6</b>	<b>27</b>	<b>24</b>

### Programme Specific Electives I

Sl. No.	COURSE CODE	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	PEDS1411	Applied Artificial Intelligence	3	0	0	3	3
2.	PEDS1412	Applied Machine Learning	3	0	0	3	3
3.	PEDS1413	Scalable Machine Learning	3	0	0	3	3
4.	PEDS1414	Neuromorphic Computing	3	0	0	3	3
5.	PEDS1415	Computer Vision	3	0	0	3	3
6.	PEDS1416	Internet of things	3	0	0	3	3
		<b>TOTAL</b>					

### Generic Electives I

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/ Wk	Credits
1.	GEDS1321	Continual Learning	3	0	0	3	3
2.	GEDS1322	Social Network Analysis	3	0	0	3	3
3.	GEDS1323	Full Stack Development-DevOps	3	0	0	3	3
4.	GEDS1324	Foundations of Quantum Information Processing	3	0	0	3	3
5.	GEDS1325	Block Chain and its Applications	3	0	0	3	3
6.	GEDS1326	Digital Image Processing	3	0	0	3	3
<b>TOTAL</b>							

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS1411	High Performance Computing	3	0	2	5	4
2.	BTDS1412	Ethics, Policy, Laws and Standards in AI	3	0	0	3	3
3.	BTDS1413	Web Technology	3	0	2	5	4
4.	BTDS1414	Pattern Recognition	3	0	0	3	3
5.	BTDS3415	Industrial Internship	0	0	0	0	2
6.	GEDS141#	Generic Elective II	3	0	0	3	3
7.	BTDS1415	Systems Engineering	3	0	0	3	3
<b>TOTAL</b>			<b>18</b>	<b>0</b>	<b>4</b>	<b>22</b>	<b>22</b>

## Generic Electives II

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	GEDS1411	Nature Inspired Computing	3	0	0	3	3
2.	GEDS1412	Fuzzy sets, Logics and Systems	3	0	0	3	3
3.	GEDS1413	Full Stack Development-UI/UX	3	0	0	3	3
4.	GEDS1414	Cognitive Computing	3	0	0	3	3
5.	GEDS1415	Six Sigma	3	0	0	3	3
6.	GEDS1416	Computational and Systems Biology	3	0	0	3	3
		<b>TOTAL</b>					

## Semester VIII

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	BTDS 3421	Capstone Project	0	0	0	0	15
2.	PEDS 142#	Programme Specific Elective II	3	0	0	3	3
3.	PEDS 142#	Programme Specific Elective III	3	0	0	3	3
		<b>TOTAL</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>24</b>

## Programme Specific Electives II

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	PEDS1421	Game Theory for Data Science	3	0	0	3	3
2.	PEDS1422	Semantic Web Technology	3	0	0	3	3
3.	PEDS1423	Resource Constrained Artificial Intelligence	3	0	0	3	3
4.	PEDS1424	Web data Mining	3	0	0	3	3
5.	PEDS1425	GPU Computing	3	0	0	3	3
6.	PEDS1426	Approximation Algorithms	3	0	0	3	3
		<b>TOTAL</b>					

## Programme Specific Electives

Sl. No.	Course Code	Course Title	L	T	P	Contact Hrs/Wk	Credits
1.	PEDS1426	Evolutionary Computation	3	0	0	3	3
2.	PEDS1427	Advanced Python- Object Oriented Programming	3	0	0	3	3
3.	PEDS1428	Generative AI	3	0	0	3	3
4.	PEDS1429	Digital Marketing	3	0	0	3	3
5.	PEDS1420	Augmented Intelligence	3	0	0	3	3
		TOTAL					

## Credit Summary

<b>Semesters</b>	<b>Credits</b>
Semester-I	19
Semester-II	20
Semester-III	20
Semester-IV	21
Semester-V	25
Semester-VI	24
Semester-VII	22
Semester VIII	21
<b>Total</b>	<b>172</b>