

STUDY AND EVALUATION SCHEME

(SUBJECT WISE DISTRIBUTION OF MARKS AND CORRESPONDING CREDITS)

Name of Course. *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester:1

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total
			Theory			Practical			Total Marks Mid Sem. Exam	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	End Sem. Exam		L	T	P	
1	CHL0101	Engineering Chemistry	60	20	20	60	20	20	200	3	1	2	5
2	MAL0101	Calculus for Engineers	60	20	20	-	-	-	100	3	1	0	4
3	EEL0101	Basic Electrical Engineering	60	20	20	60	20	20	200	3	1	2	5
4	MEL0102	Engineering Graphics	60	20	20	60	20	20	200	3	0	2	4
5	CSP0101	Design Thinking	-	-	-	60	20	20	100	0	0	2	1
6	CSAU0102 ¹	Programming Logics (Scratch Programming)	60	20	20	60	20	20	200	2	0	4	0
7	NCC-0101 ²	NCC	60	20	20	60	20	20	200	1	0	2	2
										Total Credits			19

1. represents "Audit Course".
2. NCC is a choice-based subject. Credits will be added if the subject will be opted.

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester:2

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	PHL0201	Physics-I	60	20	20	60	20	20	200	3	1	2	5
2	MAL0201	Statistics for Engineers	60	20	20	-	-	-	100	3	1	0	4
3	CSL02011	Programming for Problem Solving using C	60	20	20	60	20	20	200	3	0	4	5
4	HUL0201	Communication Skills	60	20	20	60	20	20	200	2	0	2	3
5	MEL0203	Workshop/Manufacturing Practices	60	20	20	60	20	20	200	1	0	4	3
6	MCL0201	Universal Human Values-	60	20	20	-	-	-	100	2	1	0	3
7	AU-1023	Sports and Yoga or NSS								2	0	0	0
8	NCC02022	NCC	60	20	20	60	20	20	200	1	0	2	2
9	CSD02014	Minor Project				60	20	20	100	0	0	4	2
10	IKS-015	Indian Knowledge System(IKS)	-	-	-	-	-	-	-	-	-	-	2
										Total Credits			23

- CSL0201* Programming for Problem Solving using C will be completed by MOOC Course-https://onlinecourses.neptel.c.in/noc25_cs56/preview
- NCC** is a choice-based subject. Credits will be added if the subject will be opted.
- Represent Non graded Mandatory audit course.
- The main focus of the minor project is to develop a graphical use interface-based application to achieve the objective of collaborative problem-solving and software development skills.
- IKS is an audit course with credit earned through the participation in the events announced by the university
- Students will go for Industrial training in summer break.**

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester:3

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total Credits
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	En Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	CSP0309	Object Oriented Programming using Java	-	-	-	60	20	20	100	0	0	6	3
2	CSL0309/ CSL0312	Data structures and Algorithms – CS/Cy/DS Data Analytics - AIML	60	20	20	60	20	20	200	2	0	4	4
3	CSL0310	Computer System Organization (I unit Digital Elec)	60	20	20	60	20	20	200	3	0	2	4
4	CSL0311	Database Management System	60	20	20	60	20	20	200	2	0	4	4
5		⁵ Specilization-1 CS/AI/DS/Cyber	60	20	20	60	20	20	200	1	0	4	3
6	MAL0305	Discrete Structure and Matrices	60	20	20	-	-	-	100	3	0	0	3
7	HUL0301	Humanities-I (Making of Morden India)	60	20	20	-	-	-	100	2	0	0	2
8	CSD0301 ²	Seminar I	-	-	-	60	20	20	100	0	0	2	1
9	CSD0302 ³	Minor Project				60	20	20	100	0	0	4	2
10	NCC-0303 ⁴	NCC	60	20	20	60	20	20	200	1	0	2	2
										Total Credits			26

1. Massive Open Online Courses (MOOC) – will be declared later
2. Evaluation of **Industrial Training-I/Internship-I**
3. The main focus of the minor project is to design and develop a networked system to achieve the objective of networking and database integration.
4. NCC is a choice-based subject. Credits will be added if the subject will be opted.

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester: 4

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total Credits
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	CSL0402	Data Communication and Computer Networks	60	20	20	60	20	20	200	3	0	2	4
2	CSL4010	Operating Systems (Linux Lab)	60	20	20	60	20	20	200	2	0	4	4
3	CSL4011	Design & Analysis of Algorithms	60	20	20	60	20	20	200	2	0	4	4
4	CSP0406	Advanced Java				60	20	20	100	0	0	6	3
5		⁵ Specilization-2 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
6	CSL4012	Software Engineering	60	20	20	-	-	-	100	3	0	0	3
7	MCL0401	***Environmental Sciences	-	-	-	-	-	-	-	-	-	-	0
8	CSD0402 ²	Minor Project				60	20	20	100	0	0	4	2
9	NCC0403 ³	NCC	60	20	20	60	20	20	200	1	0	2	2
10	IKS-02 ⁴	Indian Knowledge System (IKS)	-	-	-	-	-	-	-	-	-	-	2
										Total Credits			24

1. Massive Open Online Courses (MOOC) – will be declared later
2. The main focus of the minor project is to develop a mobile app or related type of app with backend integration to achieve the objective of enrichment of industry-relevant skills in app designing and cloud computing.
3. NCC is a choice-based subject. Credits will be added if the subject will be opted.
4. IKS is an audit course with credit earned through the participation in the events announced by the university
5. 5 Courses are mentioned in Specialization Cluster
6. Students will go for Industrial training in summer break

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester: 5

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits allotted (Subject Wise)			Total Credits
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	CSL0509	Cryptography	60	20	20	60	20	20	200	3	0	2	4
2	CSL0502	Theory of Computation	60	20	20	60	20	20	200	3	0	2	4
3	CSL0504	Data Warehousing & Data Mining	60	20	20	60	20	20	200	2	0	4	4
4		⁵ Specilization-3 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
5		⁶ Specilization-4 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
6	HUL0502	Humanities II - personality development and communication skills	60	20	20	-	-	-	100	2	0	0	2
7	MCL0505	Constitution of India	-	-	-	-	-	-	-	-	-	-	0
8	CSD0502 ²	Seminar II	-	-	-	60	20	20	100	0	0	2	1
9	CSD0503 ³	Minor Project	-	-	-	60	20	20	100	0	0	4	2
10	NCC-0505 ⁴	NCC_	60	20	20	60	20	20	200	1	0	2	2
										Total Credits			25

- Massive Open Online Courses (MOOC) – will be declared later
- Evaluation of Industrial training-II/Internship-II
- The main focus of the minor project is to develop a machine learning models for predictions to achieve the objective of application of data analytics and machine learning techniques to solve real-world problems.
- NCC is a choice-based subject. Credits will be added if the subject will be opted.
- 5, 6 Courses are mentioned in Specialization Cluster

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester: 6

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total Credits
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	CSL0609	Cloud Computing	60	20	20	60	20	20	200	3	0	2	4
2	CSL0601	Internet of Things	60	20	20	60	20	20	200	3	0	2	4
3		⁵ Specilization-5 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
4		⁶ Specilization-6 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
5	HUL0602	Principles of Managerial Economics	60	20	20	-	-	-	100	3	1	0	4
6	CSD0603 ²	Project-1	-	-	-	60	20	20	100	0	0	4	2
7	NCC-0606 ³	NCC	60	20	20	60	20	20	200	1	0	2	2
8	IKS-03 ⁴	Indian Knowledge System (IKS)	-	-	-	-	-	-	-	-	-	-	2
										Total Credits			22

1. Massive Open Online Courses (MOOC) – will be declared later.
2. The main focus of the minor project is to develop an IoT based application to achieve the objective of integration of machine learning and IoT technologies.
3. NCC is a choice-based subject. Credits will be added if the subject will be opted.
4. IKS is an audit course with credit earned through the participation in the events announced by the university
5. 5, 6 Courses are mentioned in Specialization Cluster

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester:7

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total Credit
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	HULO702	Soft Skills – (CRT)	60	20	20	-	-	-	100	2	0	0	2
2		⁴ Specilization-7 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
3		⁵ Specilization-8 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
4		⁶ Specilization-9 CS/AI/DS/Cyber	60	20	20	60	20	20	200	2	0	4	4
5	CSD0705 ²	Major Project I - Advanced Trends in Computing (Research oriented)				60	20	20	100	0	0	4	2
6	CSD0702 ³	Seminar III	-	-	-	60	20	20	100	0	0	4	2
7	MOOC ¹	MOOC	60	20	20				100	-	-	-	2
Total Credits													20

1. Massive Open Online Courses (MOOC) – will be declared later
2. The main focus is to develop a research driven project to achieve the academic learning with industrial research requirements.
3. Evaluation of Industrial training-III/Internship-III
4. 4,5,6 Courses are mentioned in Specialization Cluster

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Name of Course: *B.Tech. in Computer Science & Engineering (Specialization in Computer Science, Artificial Intelligence & Machine Learning, Data Science, Cyber Security)*

Semester: 8

S. No.	Subject Code	Subject Name	Maximum Marks Allotted							Credits Allotted (Subject Wise)			Total Credits
			Theory			Practical			Total Marks	Period Per Week			
			End Sem. Exam	Mid Sem. Exam	Class Participation	End Sem. Exam	Progressive Evaluation	Internal Viva		L	T	P	
1	CSL0803	MOOC Course (Management oriented)				60	20	20	100	0	0	4	2
2	CSL0804	Entrepreneurship and Startup Culture	60	20	20	-	-	-	100	2	0	0	2
3	CSD0802	Comprehensive Viva				60	20	20	100	0	0	4	2
4	CSD0804 ²	Internship/Capstone Project	-	-	-	60	20	20	100	-	-	20	10
5	IKS-04 ³	Indian Knowledge System (IKS)	-	-	-	-	-	-	-	-	-	-	2
Total Credits													16

1. Massive Open Online Courses (MOOC) – will be declared later
2. Final Capstone project will be developed by the students to achieve the delivery of a project for real-world implementation.
3. IKS is an audit course with credit earned through the participation in the events announced by the university

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List of Specialization -CS

Subject Code	Subject Name	Semester	Specialization No.
CSE0309	Web Technologies	III	Specialization -1
CSP0304	Python Programming	IV	Specialization -2
CSE0410	Introduction to AI	V	Specialization -3
CSE0521	Data Science & Analytics	V	Specialization -4
CSE0629	Full Stack Development	VI	Specialization -5
CSE0611	Compiler Design	VI	Specialization -6
CSE0729	Dev Ops	VII	Specialization -7
CSE0710	Software Testing	VII	Specialization -8
CSE0717	Quantum Computing Basics	VII	Specialization-9

List of Specialization -Cyber Security

Subject Code	Subject Name	Semester	Specialization No.
CSE0309	Web Technologies	III	Specialization -1
CSP0304	Python Programming	IV	Specialization -2
CSE0411	AI for Cyber Security	V	Specialization -3
CSE0530	Ethical Hacking fundamentals	V	Specialization -4
CSE0629	Network Security	VI	Specialization -5
CSE0630	Application Security	VI	Specialization -6
CSE0730	Digital Forensics	VII	Specialization -7
CSE0729	Advanced Threat Intelligence	VII	Specialization -8
CSE0731	Generative AI	VII	Specialization-9

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List of Specialization -Data Science

Subject Code	Subject Name	Semester	Specialization No.
CSE0310	Data Visualization & preprocessing	III	Specialization -1
CSE0412	Introduction to Machine Learning	IV	Specialization -2
CSE0525	Statistical Modelling & Inference	V	Specialization -3
CSE0526	Deep Learning	V	Specialization -4
CSE0630	Natural Language Processing	VI	Specialization -5
CSE0631	Predictive Analytics & Forecasting	VI	Specialization -6
CSE0730	Business Analytics	VII	Specialization -7
CSE0732	Data Governance	VII	Specialization -8
CSE0733	Advanced Big Data Analytics	VII	Specialization-9

List of Specialization -AIML

Subject Code	Subject Name	Semester	Specialization No.
CSE0310	Introduction to Machine Learning	III	Specialization -1
CSE0413	Deep Learning	IV	Specialization -2
CSE0527	Computer Vision	V	Specialization -3
CSE0528	Natural language Processing	V	Specialization -4
CSE0632	Parallel & Distributed Computing	VI	Specialization -5
CSE0633	Advanced Deep Learning Architectures	VI	Specialization -6
CSE0731	Generative AI	VII	Specialization -7
CSE0734	Reinforcement learning for Advanced Systems	VII	Specialization -8
CSE0735	AI ethics & Fairness	VII	Specialization-9