

Walchand College of Engineering, Sangli

(A Government Aided Autonomous Institute)



Credit Systems for

FY B. Tech. (CSE)

Sem-I to II

AY 2020-21

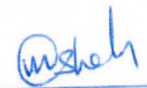


Walchand College of Engineering, Sangli

(A Government Aided Autonomous Institute)

Credit System for F. Y. B. Tech. (Group A in Sem-I and Group B in Sem-II) AY 2020-21

Sr.No.	AICTE Category	Course Code	Course Name	L	T	P	Hrs	Credits	ISE-1	MSE*	ISE-2	ESE
Professional Core (Theory)												
1	BS	5PH101	Engineering Physics	3	0	0	3	3	10	30	10	50
2	BS	5MA101	Engineering Mathematics-I	3	1	0	4	4	10	30	10	50
3	ES	5CV101	Engineering Mechanics	3	0	0	3	3	10	30	10	50
4	HS	5HS101	Communication Skills	2	1	0	3	3	10	30	10	50
5	ES	5CS101	Programming for problem solving	2	0	0	2	2	10	30	10	50
Professional Core (Lab)												
6	ES	5CV151	Engineering Mechanics Lab	0	0	2	2	1	25	25	25	25
7	ES	5ME152	Workshop Practice	0	0	2	2	1	25	25	25	25
8	ES	5CS151	Programming for problem solving Lab	0	0	2	2	1	25	25	25	25
9	BS	5PH151	Engineering Physics Lab	0	0	2	2	1	25	25	25	25
Mandatory Life Skill Courses												
@												
10	HS	5IC101	Environmental Sciences	2	0	0	2	0	10	30	10	50
Value Added Professional Courses												
11	VAPC	Refer list	Value Added Professional Courses				2	# 2				
Value Added Life-Skill Courses												
12	VALS	Refer list	Value Added Life Skill Courses				2	# 2				
Total				15	2	8	25	19				


Dr. M. A. Shah
Head
Department of Computer Science & Engineering


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Walchand College of Engineering, Sangli
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Course List for F. Y. B. Tech. (Group A in Sem-I and Group B in Sem-II) Sem-I AY 2020-21

Value Added Professional Courses		
1	VAPC001	Value Engineering
2	VAPC002	Arduino Programming
3	VAPC003	Python Programming

Value Added Life Skill Courses		
1	VALS001	Yoga
2	VALS002	Photography
3	VALS003	Work Life Balance


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Credit System for F. Y. B. Tech. (Group A in Sem-II and Group B in Sem-I) AY 2020-21

Sr.No.	AICTE Category	Course Code	Course Name	L	T	P	Hrs	Credits	ISE-1	MSE*	ISE-2	ESE
Professional Core (Theory)												
1	BS	5CH101	Engineering Chemistry	3	0	0	3	3	10	30	10	50
2	BS	5MA102	Engineering Mathematics-II	3	1	0	4	4	10	30	10	50
3	ES	5ME101	Engineering Graphics and CAD	2	0	0	2	2	10	30	10	50
4	BS	5EL101	Basic Electrical Engineering	3	0	0	3	3	10	30	10	50
5	ES	5EN101	Arduino Based Systems	2	0	0	2	2	10	30	10	50
Professional Core (Lab) *												
6	ES	5ME151	Engineering Graphics and CAD Lab	0	0	2	2	1	25	25	25	25
7	ES	5EL151	Basic Electrical Engineering Lab	0	0	2	2	1	25	25	25	25
8	BS	5CH151	Engineering Chemistry Lab	0	0	2	2	1	25	25	25	25
9	ES	5EN151	Arduino Based Systems Lab	0	0	2	2	1	25	25	25	25
Professional Elective (Theory)												
10	BS	Refer list	Elective on Basic Sciences	2	0	0	2	2	10	30	10	50
Value Added Professional Courses												
11	VAPC	Refer list	Value Added Professional Courses				2	# 2				
Value Added Life-Skill Courses												
12	VALS	Refer list	Value Added Life Skill Courses				2	# 2				
Total				15	1	8	24	20				

Mishra
Dr. M. A. Shah

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Walchand College of Engineering, Sangli
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Course List for F. Y. B. Tech. (Group A in Sem-II and Group B in Sem-I) AY 2020-21

Sr.No.	Course Code	Course Name
Elective on Basic Sciences		
1	5BS101	Biology for Engineers
2	5BS104	Life Sciences

Value Added Professional Courses		
1	VAPC001	Value Engineering
2	VAPC002	Arduino Programming
3	VAPC003	Python Programming


Value Added Life Skill Courses		
1	VALS001	Yoga
2	VALS002	Photography
3	VALS003	Work Life Balance

Notes:


* For Lab courses, there will be only internal continuous assessment. ESE is a separate head of passing for both theory and lab courses.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person. The list of Value added courses v updated from time to time. The course may be on paid basis. The credits earned from these courses will be shown on grade card. For SPI an calculation, these courses will be excluded.

@ Minimum 2 mandatory life skill courses are to be completed for award of degree.


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Notes:

* For Lab courses, there will be only internal continuous assessment. ESE is a separate head of passing for both theory and lab courses.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person. The list of Value added courses will be updated from time to time. The course may be on paid basis. The credits earned from these courses will be shown on grade card. For SPI and CPI calculation, these courses will be excluded. These courses will be offered as per availability of faculty.

@ Minimum 2 mandatory life skill courses are to be completed for award of degree.

For further details refer to Academic and Examination rules and regulations.

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***** Platinum Jubilee Year *****

**Credit System for
S.Y. B.Tech. (Computer Science and Engineering)
Sem-III and IV**

2021-22



Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

Credit System for S.Y. B.Tech. (Computer Science and Engineering) Sem-III AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
Professional Core (Theory)												
1	BS	5MA201	Probability and Statistics	2	0	0	0	2	2	20	20	60
2	ES	5CS202	Discrete Mathematics	3	0	0	0	3	3	20	20	60
3	PC	5CS203	Data Structures	3	0	0	0	3	3	20	20	60
4	PC	5CS204	Data Communication	3	0	0	0	3	3	20	20	60
5	PC	5CS205	Computer Organization and Architecture	3	0	0	0	3	3	20	20	60
6	PC	5CS206	Software Engineering	3	0	0	0	3	3	20	20	60
Professional Core (Lab)												
7	PC	5CS251	Programming Lab 1	0	0	2	0	2	1	30	30	40
8	PC	5CS253	Data Structures Lab	0	0	2	0	2	1	30	30	40
9	PC	5CS255	Computer Organization and Architecture Lab	0	0	2	0	2	1	30	30	40
Value Added Professional Courses #												
--												
Value Added Life-Skill Courses #												
--												
Total				17	0	6	0	23	20			

Notes:

For Lab courses: There shall be only internal continuous assessment (LA1, LA2, ESE). LA1 and LA2 together shall be Lab ISE. The ESE is a separate head of passing.
 For Theory courses: There shall be two tests (T1 and T2) and one ESE. The ESE is a separate head of passing.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person.

The credits earned from these courses will be shown on grade card. For SGPA and CGPA calculation, these courses will be excluded.

The list of Value added courses will be updated from time to time. The courses may be on paid basis. These courses will be offered as per availability of faculty.

@ Minimum two AICTE mandatory courses need to be completed for award of degree.

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Walchand College of Engineering, Sangli

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Credit System for S.Y. B.Tech. (Computer Science and Engineering) Sem-IV AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
Professional Core (Theory)												
1	BS	5CS221	Applied Mathematics for Computer Science and Engineering	3	0	0	0	3	3	20	20	60
2	ES	5CS222	Formal Language and Automata Theory	3	1	0	0	4	4	20	20	60
3	PC	5CS223	Operating Systems	3	0	0	0	3	3	20	20	60
4	PC	5CS224	Database Engineering	3	0	0	0	3	3	20	20	60
5	PC	5CS225	Computer Network	3	0	0	0	3	3	20	20	60
Professional Core (Lab)												
6	PC	5CS274	Database Engineering Lab	0	0	2	0	2	1	30	30	40
7	PC	5CS275	Computer Network Lab	0	0	2	0	2	1	30	30	40
8	PC	5CS276	Programming Lab 2	0	0	2	0	2	1	30	30	40
9	HS	5CS277	Presentation and Report Writing	0	0	0	1	1	1	30	30	40
AICTE Mandatory Courses @												
10	MC	5IC201	Environment Science	2	0	0	0	2	0	20	20	60
Value Added Professional Courses #												
--												
Value Added Life-Skill Courses #												
--												
Total				17	1	6	1	25	20			



Walchand College of Engineering, Sangli

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Notes:

For Lab courses: There shall be only internal continuous assessment (LA1, LA2, ESE). LA1 and LA2 together shall be Lab ISE. The ESE is a separate head of passing.

For Theory courses: There shall be two tests (T1 and T2) and one ESE. The ESE is a separate head of passing.

The Value Added Courses are Optional Courses. The mode of teaching (LTPI) is decided by the resource person.

The credits earned from these courses will be shown on grade card. For SGPA and CGPA calculation, these courses will be excluded.

The list of Value added courses will be updated from time to time. The courses may be on paid basis. These courses will be offered as per availability of faculty.

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Walchand College of Engineering

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**Credit System for
T.Y. B.Tech. (Computer Science and Engineering)
Sem-V and VI**

2022-23



Walchand College of Engineering

(Government Aided Autonomous Institute)

Credit System for T.Y. B.Tech. (Computer Science and Engineering) Sem-V AY 2022-23

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
Professional Core (Theory)													
1	PC	5CS301	Compiler Design	3	0	0	0	3	3	30	20	50	
2	PC	5CS302	Design and Analysis of Algorithms	3	0	0	0	3	3	30	20	50	
Professional Core (Lab)													
3	PC	5CS351	Design and Analysis of Algorithms Lab	0	0	2	0	2	1	30	30	40	
4	PC	5CS352	Programming Lab 3	0	0	2	0	2	1	30	30	40	POE
5	PR	5CS345	Mini-Project-1	0	0	2	0	2	1	30	30	40	POE
6	PR	5CS346	Mini-Project-2	0	0	2	0	2	1	30	30	40	
7	HS	5HS302	Humanities-1: Human Relations at Work	0	0	0	3	3	3	30	30	40	
Professional Elective (Theory)													
8	PE	Refer list	Elective 1	3	0	0	0	3	3	30	20	50	
Professional Elective (Lab)													
9	PE	Refer list	Elective 2 Lab	0	0	2	0	2	1	30	30	40	
Open Elective													
10	OE	Refer list	Open Elective-1	2	0	0	0	2	2	30	20	50	
11	OE	Refer list	Open Elective-2	3	0	0	0	3	3	30	20	50	
Total				14	0	10	3	27	22				

Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing. The Y in the PoE indicates external component for ESE.

For further details, refer to Academic and Examination rules and regulations.



Walchand College of Engineering

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Elective Course List for T.Y. B.Tech. (Computer Science and Engineering) Sem-V AY 2022-23

Sr.No.	Track	Course Code	Course Name
Elective 1			
1	Image Processing	5CS311	Image Processing
2	AI&ML	5CS312	Artificial Intelligence and Machine Learning
3	Computer Network & Security	5CS313	Internet (Web) of Things
4	Image Processing	5CS314	Computer Graphics
5	Computing	5CS316	MOOC course on Introduction to Game Theory and Mechanism Design
Elective 2 Lab			
1	Image Processing	5CS353	Image Processing Lab
2	AI&ML	5CS354	Artificial Intelligence and Machine Learning Lab
3	Computer Network & Security	5CS355	Internet (Web) of Things Lab
4	Image Processing	5CS356	Computer Graphics Lab
5	Computing	5CS358	Introduction to Game Theory and Mechanism Design Lab



Walchand College of Engineering

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Open Elective Course List for T.Y. B.Tech. (Computer Science and Engineering) Sem-V AY 2022-23

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Elective 1				
1	Civil	5	5OE301	Basic Civil Engineering
2	Mech	5	5OE330	Energy Engineering
3	Elect	5	5OE343	Electrical Machine Technology
4	Civil	5	5OE301	Basic Civil Engineering
5	Eln	5	5OE356	Signals and Systems
6	Mech	5	5OE330	Energy Engineering
7	Elect	5	5OE343	Electrical Machine Technology
8	Eln	5	5OE356	Signals and Systems
Open Elective 2				
1	Civil	5	5OE315	Application of Remote Sensing
2	Mech	5	5OE329	Non-conventional Machining Processes
3	Civil	5	5OE315	Application of Remote Sensing
4	Eln	5	5OE357	Introduction to Electronics system
5	Mech	5	5OE329	Non-conventional Machining Processes
6	Eln	5	5OE357	Introduction to Electronics system



Walchand College of Engineering

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Credit System for T.Y. B.Tech. (Computer Science and Engineering) Sem-VI AY 2022-23

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
Professional Core (Theory)													
1	PC	5CS321	Cloud Computing	3	0	0	0	3	3	30	20	50	
2	PC	5CS322	Advanced Database System	3	0	0	0	3	3	30	20	50	
Professional Core (Lab)													
3	PC	5CS371	Advanced Database System Lab	0	0	2	0	2	1	30	30	40	POE
4	PR	5CS347	Mini-Project-3	0	0	2	0	2	1	30	30	40	POE
5	PR	5CS348	Mini-Project-4	0	0	2	0	2	1	30	30	40	
6	HS	5HS301	Humanities-2: German Language	0	0	0	3	3	3	30	30	40	
Professional Elective (Theory)													
7	PE	Refer list	Elective 3	2	0	0	0	2	2	30	20	50	
Professional Elective (Lab)													
8	PE	Refer list	Elective 4 Lab	0	0	4	0	4	2	30	30	40	
Open Elective													
9	OE	Refer list	Open Elective-3	2	0	0	0	2	2	30	20	50	
10	OE	Refer list	Open Elective-4	3	0	0	0	3	3	30	20	50	
Total				13	0	10	3	26	21				

Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing. The Y in the PoE indicates external component for ESE.

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Walchand College of Engineering

(Government Aided Autonomous Institute)

Elective Course List for T.Y. B.Tech. (Computer Science and Engineering) Sem-VI AY 2022-23

Sr.No.	Track	Course Code	Course Name
Elective 3			
1	Image Processing	5CS331	Remote Sensing and Geographic Information System
2	Computer Network & Security	5CS332	Advanced Computer Network
3	AI&ML	5CS333	Deep Learning
4	AI&ML	5CS334	Soft Computing
Elective 4 Lab			
1	Computer Network & Security	5CS373	Advanced Web and Mobile Application Development Lab
2	Computing	5CS372	Software Engineering Tools Lab



Walchand College of Engineering

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Open Elective Course List for T.Y. B.Tech. (Computer Science and Engineering) Sem-VI AY 2022-23

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Elective 3				
1	Civil	6	5OE322	Physical Geology
2	Mech	6	5OE336	3D Printing
3	Civil	6	5OE322	Physical Geology
4	Eln	6	5OE364	Cyber Physical System
5	Mech	6	5OE336	3D Printing
6	Eln	6	5OE364	Cyber Physical System
Open Elective 4				
1	Civil	6	5OE323	Diaster Management
2	Mech	6	5OE337	Basics of Automobile Engineering
3	Civil	6	5OE323	Diaster Management
4	Eln	6	5OE365	Biomedical Engineering
5	Mech	6	5OE337	Basics of Automobile Engineering
6	Eln	6	5OE365	Biomedical Engineering

Walchand College of Engineering

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**Credit System for
Final Year B.Tech. (Computer Science and Engineering)
Sem-VII and VIII**

AY 2023-24



Walchand College of Engineering
(Government Aided Autonomous Institute)

Credit System for Final Year B.Tech. (Computer Science and Engineering) Sem-VII AY 2023-24

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext	
Professional Core (Theory)														
1	PC	5CS401	Cryptography and Network Security	3	0	0	0	3	3	30	20	50		
2	HS	5CS403	Humanities-4 Legal, IPR, Safety	1	0	0	0	1	1	15	10	25		
Professional Core (Lab)														
3	PC	5CS453	Cryptography and Network Security Laboratory	0	0	2	0	2	1	30	30	40		
4	PR	5CS454	Techno-Socio Activity	0	0	0	1	1	1	15	15	20		
5	PR	5CS491	Project-I	0	0	6	0	6	3	30	30	40	POE	
6	HS	5CS455	Humanities-3 Project Management	0	0	0	1	1	1	15	15	20		
Professional Elective (Theory)														
7	PE	Refer list	Elective 5	3	0	0	0	3	3	30	20	50		
8	PE	Refer list	Elective 6	3	0	0	0	3	3	30	20	50		
Professional Elective (Lab)														
9	PC	Refer list	Elective 5 Lab	0	0	2	0	2	1	30	30	40		
Open Elective														
10	OE	Refer list	Open Elective-5	3	0	0	0	3	3	30	20	50		
Total				13	0	10	2	25	20					

Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing. The Y in the PoE indicates external component for ESE.

Minimum two AICTE mandatory courses need to be completed for award of degree.

The contact hours of guide for Final Year B.Tech project are 4 hrs for Sem VII and 8 hours/week for Sem VIII, for 9 students.

For further details, refer to Academic and Examination rules and regulations.


HoD


31/1/24
Dean Academics



Walchand College of Engineering
(Government Aided Autonomous Institute)

Elective Course List for Final Year B.Tech. (Computer Science and Engineering) Sem-VII AY 2023-24

Sr.No.	Track	Course Code	Course Name
Elective 5 Lab			
1	Computing	5CS451	High Performance Computing Lab
2	Computing	5CS452	Data Mining Lab
Elective 5			
1	Computing	5CS411	High Performance Computing
2	Computing	5CS412	Data Mining
Elective 6			
1	Computer Network & Security	5CS413	Software Defined Network
2	Image Processing	5CS414	Computer Vision
3	AI&ML	5CS415	MOOC Course on Reinforcement Learning


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Walchand College of Engineering
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Open Elective Course List for Final Year B.Tech. (Computer Science and Engineering) Sem-VII AY2023-24

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Elective 5				
1	Civil	7	5OE415	Management for Engineers
2	Mech	7	5OE429	Industrial Automation
3	Civil	7	5OE415	Management for Engineers
4	Eln	7	5OE457	Medical Image Processing
5	Mech	7	5OE429	Industrial Automation
6	Eln	7	5OE457	Medical Image Processing


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Dean Academics



Walchand College of Engineering
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Credit System for Final Year B.Tech. (Computer Science and Engineering) Sem-VIII AY 2023-24

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext	
Professional Core (Theory)														
1	PC	5CS421	Data Management, Protection and Governance	3	0	0	0	3	3	30	20	50		
Professional Core (Lab)														
2	PR	5CS492	Project-II	0	0	12	0	12	6	30	30	40	POE	
Professional Elective (Theory)														
3	PE	Refer list	Elective 7	3	0	0	0	3	3	30	20	50		
4	PE	Refer list	Elective 8	3	0	0	0	3	3	30	20	50		
5	PE	Refer list	Elective 9	3	0	0	0	3	3	30	20	50		
AICTE Mandatory Courses														
6	MC	5IC401	Constitution of India	2	0	0	0	2	0	30	20	50		
Total				14	0	12	0	26	18					

Notes:

For Theory courses: There shall be MSE, ISE and ESE. The ESE is a separate head of passing.

For Lab courses: There shall be continuous assessment (LA1, LA2, ESE). The ESE is a separate head of passing. The Y in the PoE indicates external component for ESE.

Minimum two AICTE mandatory courses need to be completed for award of degree.

The contact hours of guide for Final Year BTech project are 4 hrs for Sem VII and 8 hours/week for Sem VIII, for 9 students.

For further details, refer to Academic and Examination rules and regulations.


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Dean Academics



Walchand College of Engineering
(Government Aided Autonomous Institute)

Elective Course List for Final Year B.Tech. (Computer Science and Engineering) Sem-VIII AY 2023-24

Sr.No.	Track	Course Code	Course Name
Elective 7			
1	AI&ML	5CS431	Search Engine Design and Optimization
2	Computer Network & Security	5CS432	Computer Forensic
Elective 8			
1	AI&ML	5CS433	Human Computer Interaction
2	AI&ML	5CS434	MOOC Course on Social Networks
3	Image Processing	5CS435	MOOC Course on Virtual Reality
4	Computer Network & Security	5CS436	MOOC Course on Blockchain and its Applications
5	Computing	5CS437	MOOC Course on Introduction to parallel programming with OpenMP and MP
Elective 9			
1	AI&ML	5CS438	Advanced Machine Learning
2	Computing	5CS439	Big Data Computing


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Dean Academics



Walchand College of Engineering
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Tracks and Semester-wise Elective Courses for B.Tech. (Computer Science and Engineering) AY 2023-24

Sr.No.	Sem	Elective	Course Code	Course Name
AI&ML				
1	5	Elective 1	5CS312	Artificial Intelligence and Machine Learning
2	5	Elective 2 Lab	5CS354	Artificial Intelligence and Machine Learning Lab
3	6	Elective 3	5CS333	Deep Learning
4	6	Elective 3	5CS334	Soft Computing
5	7	Elective 6	5CS415	MOOC Course on Reinforcement Learning
6	8	Elective 7	5CS431	Search Engine Design and Optimization
7	8	Elective 8	5CS433	Human Computer Interaction
8	8	Elective 8	5CS434	MOOC Course on Social Networks
9	8	Elective 9	5CS438	Advanced Machine Learning
Computer Network & Security				
1	5	Elective 1	5CS313	Internet (Web) of Things
2	5	Elective 2 Lab	5CS355	Internet (Web) of Things Lab
3	6	Elective 3	5CS332	Advanced Computer Network
4	6	Elective 4 Lab	5CS373	Advanced Web and Mobile Application Development Lab
5	7	Elective 6	5CS413	Software Defined Network
6	8	Elective 7	5CS432	Computer Forensic
7	8	Elective 8	5CS436	MOOC Course on Blockchain and its Applications

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Tracks and Semester-wise Elective Courses for B.Tech. (Computer Science and Engineering) AY 2023-24

Sr.No.	Sem	Elective	Course Code	Course Name
Computing				
1	5	Elective 1	5CS316	MOOC course on Introduction to Game Theory and Mechanism Design
2	5	Elective 2 Lab	5CS358	Introduction to Game Theory and Mechanism Design Lab
3	6	Elective 4 Lab	5CS372	Software Engineering Tools Lab
4	7	Elective 5	5CS411	High Performance Computing
5	7	Elective 5	5CS412	Data Mining
6	7	Elective 5 Lab	5CS451	High Performance Computing Lab
7	7	Elective 5 Lab	5CS452	Data Mining Lab
8	8	Elective 8	5CS437	MOOC Course on Introduction to parallel programming with OpenMP and MP
9	8	Elective 9	5CS439	Big Data Computing
Image Processing				
1	5	Elective 1	5CS311	Image Processing
2	5	Elective 1	5CS314	Computer Graphics
3	5	Elective 2 Lab	5CS353	Image Processing Lab
4	5	Elective 2 Lab	5CS356	Computer Graphics Lab
5	6	Elective 3	5CS331	Remote Sensing and Geographic Information System
6	7	Elective 6	5CS414	Computer Vision
7	8	Elective 8	5CS435	MOOC Course on Virtual Reality


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List of Professional Core (Theory) Courses for B.Tech. (Computer Sc. and Engg.) AY 2023-24

Sr.No.	Sem	Course Code	Course Name
Professional Core (Theory) Courses			
1	1	6PH101	Engineering Physics
2	1	6MA101	Engineering Mathematics-I
3	1	6CV101	Engineering Mechanics
4	1	6HS101	Communication Skills
5	1	6BS104	Life Science
6	2	6CH101	Engineering Chemistry
7	2	6MA102	Engineering Mathematics-II
8	2	6ME101	Engineering Graphics and CAD
9	2	6EL101	Basic Electrical Engineering
10	2	6EN101	Basic Electronics Engineering
11	3	6MA202	Probability and Statistics
12	3	6CS201	Discrete Mathematics
13	3	6CS202	Data Structures
14	3	6CS203	Data Communication
15	3	6CS204	Computer Organization and Architecture
16	3	6CS205	Software Engineering
17	4	6CS225	Applied Mathematics for Computer Science and Engineering
18	4	6CS221	Formal Language and Automata Theory
19	4	6CS222	Operating Systems
20	4	6CS223	Database Engineering
21	4	6CS224	Computer Network
22	5	5CS301	Compiler Design
23	5	5CS302	Design and Analysis of Algorithms
24	6	5CS321	Cloud Computing
25	6	5CS322	Advanced Database System
26	7	5CS401	Cryptography and Network Security
27	7	5CS403	Humanities-4 Legal, IPR, Safety
28	8	5CS421	Data Management, Protection and Governance

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List of Professional Core (Lab) Courses for B.Tech. (Computer Sc. and Engg.) AY 2023-24

Sr.No.	Sem	Course Code	Course Name
Professional Core (Lab) Courses			
1	1	6CV151	Engineering Mechanics Lab
2	1	6ME152	Workshop Practice
3	1	6CS151	Programming for Problem Solving Lab
4	1	6PH151	Engineering Physics Lab
5	2	6ME151	Engineering Graphics and CAD Lab
6	2	6EL151	Basic Electrical Engineering Lab
7	2	6CH151	Engineering Chemistry Lab
8	2	6EN151	Basic Electronics Engineering Lab
9	3	6CS251	Programming Lab 1
10	3	6CS252	Data Structures Lab
11	3	6CS254	Computer Organization and Architecture Lab
12	4	6CS274	Database Engineering Lab
13	4	6CS275	Computer Network Lab
14	4	6CS271	Programming Lab 2
15	4	6CS277	Presentation and Report Writing
16	5	5CS351	Design and Analysis of Algorithms Lab
17	5	5CS352	Programming Lab 3
18	5	5CS345	Mini-Project-1
19	5	5CS346	Mini-Project-2
20	5	5HS302	Humanities-1: Human Relations at Work
21	6	5CS371	Advanced Database System Lab
22	6	5CS347	Mini-Project-3
23	6	5CS348	Mini-Project-4
24	6	5HS301	Humanities-2: German Language
25	7	5CS453	Cryptography and Network Security Laboratory
26	7	5CS454	Techno-Socio Activity
27	7	5CS491	Project-I
28	7	5CS455	Humanities-3 Project Management
29	8	5CS492	Project-II


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Open Electives offered by B.Tech. (Computer Sc. and Engg.) to other programmes AY 2023-24

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Offered				
1	CSE	5	5OE372	Data Science using Python
2	CSE	5	5OE371	Software Engineering and Database Essentials
3	CSE	6	5OE378	Fundamentals of Internet of Things
4	CSE	6	5OE379	Artificial Intelligence and Machine Learning
5	CSE	7	5OE471	Cyber Security
6	CSE	5	5OE372	Data Science using Python
7	CSE	5	5OE371	Software Engineering and Database Essentials
8	CSE	6	5OE378	Fundamentals of Internet of Things
9	CSE	6	5OE379	Artificial Intelligence and Machine Learning
10	CSE	7	5OE471	Cyber Security

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Open Electives available from other programmes to B.Tech. (Computer Sc. and Engg.) AY 2023-24

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Available				
1	Civil	5	5OE301	Basic Civil Engineering
2	Civil	5	5OE315	Application of Remote Sensing
3	Civil	6	5OE322	Physical Geology
4	Civil	6	5OE323	Diaster Management
5	Civil	7	5OE415	Management for Engineers
6	Mech	5	5OE330	Energy Engineering
7	Mech	5	5OE329	Non-conventional Machining Processes
8	Mech	6	5OE336	3D Printing
9	Mech	6	5OE337	Basics of Automobile Engineering
10	Mech	7	5OE429	Industrial Automation
11	Elect	5	5OE343	Electrical Machine Technology
12	Civil	5	5OE301	Basic Civil Engineering
13	Eln	5	5OE356	Signals and Systems
14	Civil	5	5OE315	Application of Remote Sensing
15	Eln	5	5OE357	Introduction to Electronics system
16	Civil	6	5OE322	Physical Geology
17	Eln	6	5OE364	Cyber Physical System
18	Civil	6	5OE323	Diaster Management
19	Eln	6	5OE365	Biomedical Engineering
20	Civil	7	5OE415	Management for Engineers
21	Eln	7	5OE457	Medical Image Processing
22	Mech	5	5OE330	Energy Engineering
23	Mech	5	5OE329	Non-conventional Machining Processes
24	Mech	6	5OE336	3D Printing
25	Mech	6	5OE337	Basics of Automobile Engineering
26	Mech	7	5OE429	Industrial Automation
27	Elect	5	5OE343	Electrical Machine Technology
28	Eln	5	5OE356	Signals and Systems
29	Eln	5	5OE357	Introduction to Electronics system
30	Eln	6	5OE364	Cyber Physical System
31	Eln	6	5OE365	Biomedical Engineering
32	Eln	7	5OE457	Medical Image Processing

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