

# **Walchand College of Engineering**

*(Government Aided Autonomous Institute)*

Vishrambag, Sangli. 416415



## **Credit System for Final Year B.Tech. (Information Technology) Sem-VII and VIII**

**2022-23**



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for Final Year B.Tech. (Information Technology) Sem-VII AY 2022-23

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Core (Theory)</b>													
1	PC	5IT401	Data Mining	2	0	0	0	2	2	30	20	50	
2	PC	5IT402	Cryptography and Network Security	2	1	0	0	3	3	30	20	50	
3	HS	5IT403	Humanities-4 Legal, IPR, Safety	1	0	0	0	1	1	15	10	25	
<b>Professional Core (Lab)</b>													
4	PC	5IT451	Data Mining Lab	0	0	2	0	2	1	30	30	40	POE
5	PC	5IT452	Open Source Software Lab	0	0	2	1	3	2	30	30	40	POE
6	PR	5IT453	Techno-Socio Activity	0	0	0	1	1	1	15	15	20	
7	PR	5IT491	Project-I	0	0	6	0	6	3	30	30	40	POE
8	HS	5IT455	Humanities-3 Project Management	0	0	0	1	1	1	15	15	20	
<b>Professional Elective (Theory)</b>													
9	PE	Refer list	Elective-3	3	0	0	0	3	3	30	20	50	
<b>Open Elective</b>													
10	OE	Refer list	Open Elective-5	3	0	0	0	3	3	30	20	50	
<b>Total</b>				<b>11</b>	<b>1</b>	<b>10</b>	<b>3</b>	<b>25</b>	<b>20</b>				

**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.**



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Elective Course List for Final Year B.Tech. (Information Technology) Sem-VII AY 2022-23

Sr.No.	Track	Course Code	Course Name
<b>Elective-3</b>			
1	Distributed System	5IT411	Cloud Computing
2	Programming and Internet Technology	5IT412	Fundamentals of System Programming
3	Network Systems and Applications	5IT413	Mobile Ad-hoc Networks & Sensors
4	Data Science	5IT414	Basics of Visual Computing
5	Interdisciplinary IT	5IT415	Digital Image Processing



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Open Elective Course List for Final Year B.Tech. (Information Technology) Sem-VII AY 2022-23

Sr.No.	Offering Dept	Sem	Course Code	Course Name
<b>Open Elective 5</b>				
1	Civil	7	5OE415	Management for Engineers
2	Mech	7	5OE429	Industrial Automation
3	Elect	7	5OE443	Industrial Automation NPTEL
4	Eln	7	5OE457	Medical Image Processing



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for Final Year B.Tech. (Information Technology) Sem-VIII AY 2022-23

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Core (Theory)</b>													
--													
<b>Professional Core (Lab)</b>													
1	PC	5IT471	Agile Software Tools and Practice Lab	0	0	0	3	3	3	30	30	40	POE
2	PR	5IT492	Project-II	0	0	12	0	12	6	30	30	40	POE
<b>Professional Elective (Theory)</b>													
3	PE	Refer list	Elective-4	3	0	0	0	3	3	30	20	50	
4	PE	Refer list	Elective-5	3	0	0	0	3	3	30	20	50	
5	PE	Refer list	Elective-6	3	0	0	0	3	3	30	20	50	
<b>AICTE Mandatory Courses</b>													
6	MC	5IC401	Constitution of India	2	0	0	0	2	0	30	20	50	
<b>Total</b>				<b>11</b>	<b>0</b>	<b>12</b>	<b>3</b>	<b>26</b>	<b>18</b>				

**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.**



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Elective Course List for Final Year B.Tech. (Information Technology) Sem-VIII AY 2022-23

Sr.No.	Track	Course Code	Course Name
<b>Elective-4</b>			
1	Distributed System	5IT431	Information Storage Management
2	Programming and Internet Technology	5IT432	Parallel Algorithm
3	Network Systems and Applications	5IT433	Software Defined Network
4	Data Science	5IT434	Advanced Deep Learning
5	Interdisciplinary IT	5IT435	Augmented Reality and Virtual Reality
<b>Elective-5</b>			
1	Distributed System	5IT436	Geographical Information System
2	Programming and Internet Technology	5IT437	Decision Support System
3	Network Systems and Applications	5IT438	Information and Network Security
4	Data Science	5IT439	Social Network Analytics
5	Interdisciplinary IT	5IT440	Computer Graphics and Multimedia Techniques
<b>Elective-6</b>			
1	Distributed System	5IT441	Advanced Distributed Computing
2	Programming and Internet Technology	5IT442	Advanced Database Engineering
3	Network Systems and Applications	5IT443	Transacting Blockchain
4	Data Science	5IT444	Big Data Analytics
5	Interdisciplinary IT	5IT445	Software Reliability and Fault Detection



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Tracks and Semester-wise Elective Courses for B.Tech. (Information Technology) AY 2022-23

Sr.No.	Sem	Elective	Course Code	Course Name
<b>Data Science</b>				
1	5	Elective-1	5IT314	Fundamentals of Artificial Intelligence
2	6	Elective-2	5IT334	Data Handling and Machine Learning
3	7	Elective-3	5IT414	Basics of Visual Computing
4	8	Elective-4	5IT434	Advanced Deep Learning
5	8	Elective-5	5IT439	Social Network Analytics
6	8	Elective-6	5IT444	Big Data Analytics
<b>Distributed System</b>				
1	5	Elective-1	5IT311	Distributed Computing
2	5	Elective-1	5IT316	Data Management, Protection and Governance
3	6	Elective-2	5IT331	Fundamentals of Distributed Operating Systems
4	7	Elective-3	5IT411	Cloud Computing
5	8	Elective-4	5IT431	Information Storage Management
6	8	Elective-5	5IT436	Geographical Information System
7	8	Elective-6	5IT441	Advanced Distributed Computing
<b>Interdisciplinary IT</b>				
1	5	Elective-1	5IT315	Soft Computing
2	6	Elective-2	5IT335	IoT Systems and Applications
3	7	Elective-3	5IT415	Digital Image Processing
4	8	Elective-4	5IT435	Augmented Reality and Virtual Reality
5	8	Elective-5	5IT440	Computer Graphics and Multimedia Techniques
6	8	Elective-6	5IT445	Software Reliability and Fault Detection

(Continued..)



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Tracks and Semester-wise Elective Courses for B.Tech. (Information Technology) AY 2022-23

Sr.No.	Sem	Elective	Course Code	Course Name
<b>Network Systems and Applications</b>				
1	5	Elective-1	5IT313	Graph Theory
2	6	Elective-2	5IT333	5G Technology
3	7	Elective-3	5IT413	Mobile Ad-hoc Networks & Sensors
4	8	Elective-4	5IT433	Software Defined Network
5	8	Elective-5	5IT438	Information and Network Security
6	8	Elective-6	5IT443	Transacting Blockchain
<b>Programming and Internet Technology</b>				
1	5	Elective-1	5IT312	Advanced Programming Languages
2	6	Elective-2	5IT332	Full Stack Development
3	7	Elective-3	5IT412	Fundamentals of System Programming
4	8	Elective-4	5IT432	Parallel Algorithm
5	8	Elective-5	5IT437	Decision Support System
6	8	Elective-6	5IT442	Advanced Database Engineering





# Walchand College of Engineering

(Government Aided Autonomous Institute)

## List of Professional Core (Theory) Courses for B.Tech. (Information Technology) AY 2022-23

Sr.No.	Sem	Course Code	Course Name
<b>Professional Core (Theory) Courses</b>			
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	6IT201	Discrete Mathematics
13	3	6IT202	Data Structures
14	3	6IT203	Microprocessors
15	3	6IT204	Data Communication
16	4	6IT221	Theory of Computation
17	4	6IT222	Computer Architectures
18	4	6IT223	Computer Networks
19	4	6IT224	Software Engineering
20	5	5IT301	Database Engineering
21	5	5IT302	Operating System
22	5	5IT303	Computer Algorithm
23	6	5IT321	Unix Operating System
24	6	5IT322	Parallel Computing
25	7	5IT401	Data Mining
26	7	5IT402	Cryptography and Network Security
27	7	5IT403	Humanities-4 Legal, IPR, Safety



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## List of Professional Core (Lab) Courses for B.Tech. (Information Technology) AY 2022-23

Sr.No.	Sem	Course Code	Course Name
<b>Professional Core (Lab) Courses</b>			
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	6IT252	Data Structures Lab
10	3	6IT253	Microprocessors Lab
11	3	6IT254	C and CPP Programming Lab
12	3	6IT255	Python Programming Lab
13	3	6IT256	Presentation and Report Writing
14	4	6IT272	Computer Network Lab
15	4	6IT274	Software Engineering Lab
16	4	6IT275	Java Programming Lab
17	4	6IT278	Android Programming Lab
18	4	6IT276	Mini Project 1
19	4	6IT277	Intellectual Property Rights
20	5	5IT351	Database Engineering Lab
21	5	5IT352	Computer Algorithm Lab
22	5	5IT345	Mini-Project-2
23	5	5IT346	Mini-Project-3
24	5	5HS302	Humanities-1: Human Relations at Work
25	6	5IT371	Unix Operating System Lab
26	6	5IT372	Web Technology Lab
27	6	5IT347	Mini-Project-4
28	6	5IT348	Mini-Project-5
29	6	5HS301	Humanities-2: German Language
30	7	5IT451	Data Mining Lab
31	7	5IT452	Open Source Software Lab
32	7	5IT453	Techno-Socio Activity
33	7	5IT491	Project-I
34	7	5IT455	Humanities-3 Project Management
35	8	5IT471	Agile Software Tools and Practice Lab
36	8	5IT492	Project-II



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Open Electives offered by B.Tech. (Information Technology) to other programmes AY 2022-23

Sr.No.	Offering Dept	Sem	Course Code	Course Name
<b>Open Electives Offered</b>				
1	IT	5	5OE385	Joy of Python Programming
2	IT	5	5OE386	Cloud Computing System
3	IT	6	5OE392	Web Development & Applications
4	IT	6	5OE393	Fundamentals Of Machine Learning
5	IT	7	5OE485	Data Visualization & Interpretation



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Open Electives available from other programmes to B.Tech. (Information Technology) AY 2022-23

Sr.No.	Offering Dept	Sem	Course Code	Course Name
<b>Open Electives Available</b>				
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	Elect	5	5OE344	Industrial Instrumentation
13	Elect	6	5OE350	Renewable Energy
14	Elect	6	5OE351	Energy Management
15	Elect	7	5OE443	Industrial Automation NPTEL
16	Eln	5	5OE356	Signals and Systems
17	Eln	5	5OE357	Introduction to Electronics system
18	Eln	6	5OE364	Cyber Physical System
19	Eln	6	5OE365	Biomedical Engineering
20	Eln	7	5OE457	Medical Image Processing