Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416415

*** Platinum Jubilee Year ***

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

2021-22

Walchand College of Engineering, Sangli
(Government Aided Autonomous Institute)

Credit System for Final Year B.Tech. (Information Technology) Sem-VII 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	PC		Data Mining	3	0	0	0	3	3	20	20	60
2	PC		Cryptography and Network Security	3	0	0	0	3	3	20	20	60
			Professional Core (Lab)									
3	PC		Data Mining Lab	0	0	2	0	2	1	30	30	40
4	PC		Open Source Software Lab	0	0	2	1	3	2	30	30	40
5	PC		Agile Software Tools and Practice Lab	0	0	2	1	3	2	30	30	40
6	PR		Project-I	0	0	6	0	6	3	30	30	40
			Professional Elective (Theory)									
7	PE	Refer list	Elective 3	3	0	0	0	3	3	20	20	60
			Open Elective									
8	OE	Refer list	Open Elective 3	3	0	0	0	3	3	20	20	60
			Value Added Professional Courses #									
			--									
			Value Added Life-Skill Courses #									
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			Total	12	0	12	2	26	20			

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Elective Course List for Final Year B.Tech. (Information Technology) Sem-VII AY 2021-22

Sr.No.	Track	Course Code	Course Name
Elective 3			
1	Network Systems and Applications		Software Defined Network
2	Data Science		Visual Computing
3	Distributed System		High Performance Computing
4	Programming and Internet Technology		System Programming

Open Elective Course List for Final Year B.Tech. (Information Technology) Sem-VII AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Elective 3				
1	Civil	7		Management for Engineers
2	Mech	7		Automobile Engineering
3	Mech	7		Industrial Automation
4	Mech	7		Aerospace Engineering
5	Elect	7		Industrial Automation NPTL
6	Eln	7		Medical Image Processing

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.

The contact hours of each Final Year BTech project batch (of min 5 students) with the guide shall be 1 hour/week for Sem VII and 2 hours/week for Sem VIII.

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

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Credit System for Final Year B.Tech. (Information Technology) Sem-VIII AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
			Professional Core (Theory)									
			--									
			Professional Core (Lab)									
1	PC		Techno-Socio Activity	0	0	2	0	2	1	30	30	40
2	PR		Project-II	0	0	16	0	16	8	30	30	40
			Professional Elective (Theory)									
3	PE	Refer list	Elective 4	3	0	0	0	3	3	20	20	60
			AICTE Mandatory Courses @									
4	MC		Constitution of India	2	0	0	0	2	0	20	20	60
			Value Added Professional Courses #									
			--									
			Value Added Life-Skill Courses #									
			--									
			Total	5	0	18	0	23	12			

Elective Course List for Final Year B.Tech. (Information Technology) Sem-VIII AY 2021-22

Sr.No.	Track	Course Code	Course Name
Elective 4			
1	Network Systems and Applications		Wireless Network
2	Programming and Internet Technology		Advanced Data Structure
3	Interdisciplinary IT		Soft Computing
4	Data Science		Deep Learning

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.

The contact hours of each Final Year BTech project batch (of min 5 students) with the guide shall be 1 hour/week for Sem VII and 2 hours/week for Sem VIII.

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

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Tracks and Semester-wise Elective Courses for B.Tech. (Information Technology) AY 2021-22

Sr.No.	Sem	Elective	Course Code	Course Name
— Data Science				
1	5	Elective 1		Fundamentals of Artificial Intelligence
2	6	Elective 2		Mathematics for Machine Learning
3	7	Elective 3		Visual Computing
4	8	Elective 4		Deep Learning
Distributed System				
1	5	Elective 1		Distributed Computing
2	5	Elective 1		Data Management, Protection and Governance
3	6	Elective 2		Fundamentals of Distributed Operating Systems
4	7	Elective 3		High Performance Computing
Interdisciplinary IT				
1	5	Elective 1		Soft Computing
2	6	Elective 2		IoT Systems and Applications
3	8	Elective 4		Soft Computing
Network Systems and Applications				
1	5	Elective 1		Graph Theory
2	6	Elective 2		5G Technology
3	7	Elective 3		Software Defined Network
4	8	Elective 4		Wireless Network

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Tracks and Semester-wise Elective Courses for B.Tech. (Information Technology) AY 2021-22

Sr.No.	Sem	Elective	Course Code	Course Name
Programming and Internet Technology				
1	5	Elective 1		Advanced Programming Langauges
2	6	Elective 2		Full Stack Development
3	7	Elective 3		System Programming
4	8	Elective 4		Advanced Data Structure

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Mapping betwwen Courses and GATE Topics for B.Tech. (Information Technology) AY 2021-22

Sr.No.	Sem	Course Code	Course Name	GATE Mapping
				GATE Mapping
1	1	5MA101	Engineering Mathematics-I	Linera Algebra
2	1	5CS101	Programming for Problem Solving	Programming and Data Structures
3	1	5CS151	Programming for Problem Solving Lab	Programming and Data Structures
4	2	5MA102	Engineering Mathematics-II	Calculus
5	3	5MA201	Probability and Statistics	Probability
6	3	5IT201	Discrete Mathematics	Discrete Mathematics
7	3	5IT202	Data Structures	Programming and Data Structures
8	3	5IT203	Microprocessors	Computer Organization and Architecture
9	3	5IT204	Data Communication	Computer Networks
10	3	5IT252	Data Structures Lab	Programming and Data Structures
11	3	5IT253	Microprocessors Lab	Computer Organization and Architecture
12	3	5IT255	C and CPP Programming Lab	Programming and Data Structures
13	4	5IT221	Theory of Computation	Theory of Computations
14	4	5IT222	Computer Architectures	Computer Organization and Architecture
15	4	5IT223	Computer Networks	Computer Networks
16	4	5IT272	Computer Network Lab	Computer Network
17	5		Database Engineering	Databases
18	5		Operating System	Operating System
19	5		Computer Algorithm	Algorithms
20	5		Database Engineering Lab	Databases

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List of Professional Core (Theory) Courses for B.Tech. (Information Technology) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
			Professional Core (Theory) Courses
1	1	5PH101	Engineering Physics
2	1	5MA101	Engineering Mathematics-I
3	1	5CV101	Engineering Mechanics
4	1	5HS101	Communication Skills
5	1	5CS101	Programming for Problem Solving
6	2	5CH101	Engineering Chemistry
7	2	5MA102	Engineering Mathematics-II
8	2	5ME101	Engineering Graphics and CAD
9	2	5EL101	Basic Electrical Engineering
10	2	5EN101	Arduino Based Systems
11	2	5BS104	Life Science
12	3	5MA201	Probability and Statistics
13	3	5IT201	Discrete Mathematics
14	3	5IT202	Data Structures
15	3	5IT203	Microprocessors
16	3	5IT204	Data Communication
17	4	5IT221	Theory of Computation
18	4	5IT222	Computer Architectures
19	4	5IT223	Computer Networks
20	4	5IT224	Software Engineering
21	5		Database Engineering
22	5		Operating System
23	5		Computer Algorithm
24	6		Unix Operating System
25	6		Parallel Computing
26	7		Data Mining
27	7		Cryptography and Network Security

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List of Professional Core (Lab) Courses for B.Tech. (Information Technology) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
			Professional Core (Lab) Courses
1	1	5CV151	Engineering Mechanics Lab
2	1	5ME152	Workshop Practice
3	1	5CS151	Programming for Problem Solving Lab
4	1	5PH151	Engineering Physics Lab
5	2	5ME151	Engineering Graphics and CAD Lab
6	2	5EL151	Basic Electrical Engineering Lab
7	2	5CH151	Engineering Chemistry Lab
8	2	5EN151	Arduino Based Systems Lab
9	3	5IT252	Data Structures Lab
10	3	5IT253	Microprocessors Lab
11	3	5IT255	C and CPP Programming Lab
12	3	5IT256	Python Programming Lab
13	4	5IT272	Computer Network Lab
14	4	5IT274	Software Engineering Lab
15	4	5IT275	Java Programming Lab
16	4	5IT278	Android Programming Lab
17	4	5IT276	Mini Project 1
18	4	5IT277	Presentation and Report Writing
19	5		Database Engineering Lab
20	5		Mini-Project 2
21	5		Mini-Project 3
22	5		Humanities 1: Human Relations at Work
23	6		Unix Operating System Lab
24	6		Web Technology Lab
25	6		Mini-Project 4
26	6		Mini-Project 5
27	6		Humanities 2: German Language
28	7		Data Mining Lab
29	7		Open Source Software Lab
30	7		Agile Software Tools and Practice Lab
31	7		Project-I
32	8		Techno-Socio Activity
33	8		Project-II

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Open Electives offered by B.Tech. (Information Technology) to other programmes AY 2021-22

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

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Open Electives available from other programmes to B.Tech. (Information Technology) AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
				Open Electives Available
1	Civil	5		Basic Civil Engineering
2	Civil	5		Application of Remote Sensing
3	Civil	6		Physical Geology
4	Civil	6		Diaster Management
5	Civil	7		Management for Engineers
6	Mech	5		Energy Engineering
7	Mech	5		Non-conventional Machining Processes
8	Mech	6		3D Printing
9	Mech	6		Basics of Automobile Engineering
10	Mech	7		Automobile Engineering
11	Mech	7		Industrial Automation
12	Mech	7		Aerospace Engineering
13	Elect	5		Electrical Machine Technology
14	Elect	5		Industrial Instrumentation
15	Elect	6		Renewable Energy
16	Elect	6		Energy Management
17	Elect	7		Industrial Automation NPTL
18	Eln	5		Signals and Systems
19	Eln	5		Introduction to Electronics system
20	Eln	6		Cyber Physical System
21	Eln	6		Biomedical Engineering
22	Eln	7		Medical Image Processing