

# Walchand College of Engineering

*(Government Aided Autonomous Institute)*

Vishrambag, Sangli. 416415



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

**Credit System for  
F.Y. B.Tech. (All Programmes)  
Sem-I and II**

**2021-22**



# Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

## Credit System for F.Y. B.Tech. (All Programmes) for Group A in Sem-I and Group B in Sem-II AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
<b>Professional Core (Theory)</b>												
1	BS	5PH101	Engineering Physics	3	0	0	0	3	3	20	20	60
2	BS	5MA101	Engineering Mathematics-I	3	1	0	0	4	4	20	20	60
3	ES	5CV101	Engineering Mechanics	3	0	0	0	3	3	20	20	60
4	HS	5HS101	Communication Skills	2	1	0	0	3	3	20	20	60
5	ES	5CS101	Programming for Problem Solving	2	0	0	0	2	2	20	20	60
<b>Professional Core (Lab)</b>												
6	ES	5CV151	Engineering Mechanics Lab	0	0	2	0	2	1	30	30	40
7	ES	5ME152	Workshop Practice	0	0	2	0	2	1	30	30	40
8	ES	5CS151	Programming for Problem Solving Lab	0	0	2	0	2	1	30	30	40
9	BS	5PH151	Engineering Physics Lab	0	0	2	0	2	1	30	30	40
<b>Value Added Professional Courses #</b>												
--												
<b>Value Added Life-Skill Courses #</b>												
--												
<b>Total</b>				<b>13</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>23</b>	<b>19</b>			

### 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.

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



# Walchand College of Engineering, Sangli

(Government Aided Autonomous Institute)

## Credit System for F.Y. B.Tech. (All Programmes) for Group B in Sem-I and Group A in Sem-II AY 2021-22

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	T1/LA1	T2/LA2	ESE
<b>Professional Core (Theory)</b>												
1	BS	5CH101	Engineering Chemistry	3	0	0	0	3	3	20	20	60
2	BS	5MA102	Engineering Mathematics-II	3	1	0	0	4	4	20	20	60
3	ES	5ME101	Engineering Graphics and CAD	2	0	0	0	2	2	20	20	60
4	BS	5EL101	Basic Electrical Engineering	3	0	0	0	3	3	20	20	60
5	ES	5EN101	Arduino Based Systems	2	0	0	0	2	2	20	20	60
6	BS	5BS104	Life Science	2	0	0	0	2	2	20	20	60
<b>Professional Core (Lab)</b>												
7	ES	5ME151	Engineering Graphics and CAD Lab	0	0	2	0	2	1	30	30	40
8	ES	5EL151	Basic Electrical Engineering Lab	0	0	2	0	2	1	30	30	40
9	BS	5CH151	Engineering Chemistry Lab	0	0	2	0	2	1	30	30	40
10	ES	5EN151	Arduino Based Systems Lab	0	0	2	0	2	1	30	30	40
<b>Value Added Professional Courses #</b>												
--												
<b>Value Added Life-Skill Courses #</b>												
--												
<b>Total</b>				<b>15</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>24</b>	<b>20</b>			

### 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.

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

# **Walchand College of Engineering**

*(Government Aided Autonomous Institute)*

Vishrambag, Sangli. 416415



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

**2022-23**



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for S.Y. B.Tech. (Computer Science and Engineering) Sem-III 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	BS	6MA202	Probability and Statistics	2	0	0	0	2	2	30	20	50		
2	ES	6CS201	Discrete Mathematics	3	1	0	0	4	4	30	20	50		
3	PC	6CS202	Data Structures	3	0	0	0	3	3	30	20	50		
4	PC	6CS203	Data Communication	3	0	0	0	3	3	30	20	50		
5	PC	6CS204	Computer Organization and Architecture	3	0	0	0	3	3	30	20	50		
6	PC	6CS205	Software Engineering	3	1	0	0	4	4	30	20	50		
<b>Professional Core (Lab)</b>														
7	PC	6CS251	Programming Lab 1	0	0	2	1	3	2	30	30	40	POE	
8	PC	6CS252	Data Structures Lab	0	0	2	0	2	1	30	30	40	POE	
9	PC	6CS254	Computer Organization and Architecture Lab	0	0	2	0	2	1	30	30	40	POE	
<b>Total</b>				<b>17</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>26</b>	<b>23</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.

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



# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for S.Y. B.Tech. (Computer Science and Engineering) Sem-IV 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	BS	6CS225	Applied Mathematics for Computer Science and Engineering	3	0	0	0	3	3	30	20	50	
2	ES	6CS221	Formal Language and Automata Theory	3	1	0	0	4	4	30	20	50	
3	PC	6CS222	Operating Systems	3	0	0	0	3	3	30	20	50	
4	PC	6CS223	Database Engineering	3	0	0	0	3	3	30	20	50	
5	PC	6CS224	Computer Network	3	0	0	0	3	3	30	20	50	
<b>Professional Core (Lab)</b>													
6	PC	6CS274	Database Engineering Lab	0	0	2	0	2	1	30	30	40	POE
7	PC	6CS275	Computer Network Lab	0	0	2	0	2	1	30	30	40	POE
8	PC	6CS271	Programming Lab 2	0	0	2	1	3	2	30	30	40	POE
9	HS	6CS277	Presentation and Report Writing	0	0	0	1	1	1	15	15	20	
<b>AICTE Mandatory Courses</b>													
10	MC	6IC201	Environmental Science	2	0	0	0	2	0	30	20	50	
<b>Total</b>				<b>17</b>	<b>1</b>	<b>6</b>	<b>2</b>	<b>26</b>	<b>21</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.

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

# **Walchand College of Engineering**

(Government Aided Autonomous Institute)

**Vishrambag, Sangli. 416 415**



**Credit System for**

**T.Y. B. Tech. (Computer Science & Engineering)**

**Sem-V and VI**

**AY 2023-24**

# Walchand College of Engineering<sup>6</sup>

(Government Aided Autonomous Institute)

## Credit System for T.Y. B. Tech. (Computer Science & Engineering) Sem-V AY 2023-24

Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Core (Theory)</b>													
01	PC	6CS301	Compiler Design	3	0	0	0	3	3	30	20	50	
02	PC	6CS302	Design and Analysis of Algorithms	3	0	0	0	3	3	30	20	50	
03	PC	6CS303	Artificial Intelligence	3	0	0	0	3	3	30	20	50	
<b>Professional Core (Lab)</b>													
04	PC	6CS351	Design and Analysis of Algorithms Laboratory	0	0	2	0	2	1	30	30	40	
05	PC	6CS352	Programming Laboratory III	0	0	2	1	3	2	30	30	40	POE
06	PR	6CS341	Mini-Project I	0	0	2	0	4	2	30	30	40	POE
<b>Professional Elective (Theory)</b>													
07	PE	Refer List	Elective 1	3	0	0	0	3	3	30	20	50	
<b>Open Elective</b>													
08	OE	Refer List	Open Elective 1	3	0	0	0	3	3	30	20	50	
<b>Humanities</b>													
09	HS	6CS353	Humanities I: Project Management and Ethics	0	0	0	2	2	2	30	30	40	
10	HS	6HS301	Integrated/ Employability Skills-I	0	0	0	2	2	2	30	30	40	
Total				15	0	06	05	28	24				

### 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 POE/OE indicates external component for ESE.

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



Dr. N. L. Gavankar  
DAC/Secretary, BoS



Dr. M. A. Shah  
Head, (CSE) / Chairman, BoS



Dr. Mrs. S. P. Sonavane  
Dean Academics  
**Dean Academics**  
Walchand College of Engg.  
Vishrambag, Sangli - 416 415

**Walchand College of Engineering**  
(Government Aided Autonomous Institute)

**Elective Course List for T.Y. B.Tech. (Computer Science & Engineering) Sem-V AY 2023-24**

Sr.No.	Track	Course Code	Course Name
<b>Professional Elective I</b>			
01	Image Processing	6CS311	Image Processing
02	Computer and Network Security	6CS312	Internet of Things

Sr.No.	Offering Dept.	Course Code	Course Name
<b>Open Elective-1</b>			
01	Civil Engg.	6OE301	Building Planning and Design
02	Civil Engg.	6OE302	Disaster Management
03	Applied Mechanics Dept	6OE315	Theory of structures
04	Mechanical Engg.	6OE329	Non-Conventional Machining Processes
05	Electrical Engg.	6OE343	Electrical Machine Technology
06	Electronics Engg.	6OE357	Introduction to Electronic Systems
07	Electronics Engg.	6OE358	Signals and Systems
08	CSE Engg.*	6OE371	Data Science
09	IT Engg.	6OE385	Cloud Computing System
10	IT Engg.	6OE386	Joy of Python Programming
11	IT Engg.	6OE387	Data Science for Engineers

Open Elective-1 offered by **Department of Computer Science & Engineering** is allowed for students of all other departments (Except Department of Computer Science & Engineering)



Dr. N. L. Gavankar  
DAC/Secretary, BoS



Dr. M. A. Shah  
Head, (CSE) / Chairman, BoS



Dr. Mrs. S. P. Sonavane  
Dean Academics  
Dean Academics  
Walchand College of Engg.  
Vishrambag, Sangli - 416 415

**Walchand College of Engineering**  
(Government Aided Autonomous Institute)

**Credit System for T.Y. B.Tech. (Computer Science & Engineering) Sem-VI AY 2023-24**


Sr.No.	Category	Course Code	Course Name	L	T	P	I	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Core (Theory)</b>													
01	PC	6CS321	Cloud Computing	3	0	0	0	3	3	30	20	50	
02	PC	6CS322	Advanced Database System	3	0	0	0	3	3	30	20	50	
03	PC	6CS323	Machine Learning	3	0	0	0	3	3	30	20	50	
<b>Professional Core (Lab)</b>													
04	PC	6CS371	Advanced Database System Laboratory	0	0	2	0	2	1	30	30	40	POE
05	PC	6CS372	Machine Learning Laboratory	0	0	2	0	2	1	30	30	40	
06	PR	6CS342	Mini-Project II	0	0	4	0	4	2	30	30	40	POE
<b>Professional Elective (Theory)</b>													
07	PE	Refer List	Elective II	3	0	0	0	3	3	30	20	50	
<b>Professional Elective (Lab)</b>													
08	PE	Refer List	Elective III Lab	0	0	2	1	3	2	30	30	40	
<b>Open Elective</b>													
09	OE	Refer List	Open Elective II	3	0	0	0	3	3	30	20	50	
<b>Humanities</b>													
10	HS	Refer List	Humanities II	0	0	0	2	2	2	30	30	40	
11	HS	6HS302	Integrated/ Employability Skills-2	0	0	0	2	2	2	30	30	40	
Total				15	0	10	05	30	25				


**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 POE/OE indicates external component for ESE.

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

  
Dr. N. L. Gavankar  
DAC/Secretary, BoS

  
Dr. M. A. Shah  
Head, (CSE) / Chairman, BoS

  
Dr. Mrs. S. P. Sonavane  
Dean Academics  
Walchand College of Engg.  
Vishrambag, Sangli - 416 415

Page No. 4/5  
Date: 26/07/2023

# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Elective Course List for T.Y. B.Tech. (Computer Science & Engineering) Sem-VI AY 2023-24

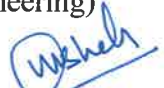
Sr.No.	Track	Course Code	Course Name
<b>Professional Elective II</b>			
01	Image Processing	6CS331	Remote Sensing & GIS
02	Computing	6CS332	Soft Computing
03	Computer and Network Security	6CS333	Wireless Sensor Network
<b>Professional Elective III Lab</b>			
01	Computing	6CS381	IOS Lab
02	Computing	6CS382	Robotics Lab


Sr.No.	Offering Dept.	Course Code	Course Name
<b>Open Elective-2</b>			
01	Civil Engg.	6OE308	Ecology
02	Civil Engg.	6OE309	Solid Waste Management
03	Applied Mechanics Dept	6OE322	Maintenance and Rehabilitation of Structures
04	Mechanical Engg.	6OE336	Basics of Automobile Engineering
05	Electrical Engg.	6OE350	Industrial Automation
06	Electronics Engg.	6OE364	Cyber Physical Systems
07	Electronics Engg.	6OE365	Biomedical Engineering
08	CSE *	6OE378	Soft Computing
09	IT	6OE392	Web Development and Applications
10	IT	6OE393	Fundamentals of Machine Learning
11	IT	6OE394	Remote Sensing and Geographical Information Systems

Sr.No.	Course Code	Course Name
<b>Humanities-II</b>		
01	6HS303	German Language
02	6HS304	French Language
03	6HS305	Japanese Language
04	6HS306	Introduction to Entrepreneurship

\* Open Elective-2 offered by Department of Computer Science & Engineering is allowed for students of all other departments (Except Department of Computer Science & Engineering)

  
Dr. N. L. Gavankar  
DAC/Secretary, BoS

  
Dr. M. A. Shah  
Head, (CSE) / Chairman, BoS

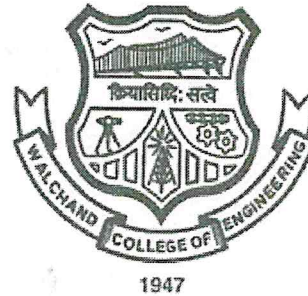
  
Dr. Mrs. S. P. Sonavane  
Dean Academics  
Walchand College of Engg.  
Vishrambag, Sangli - 416 415

Page No. 5/5  
Date: 26/07/2023

# Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416415



Credit System for

**Final Year B.Tech. (Computer Science & Engineering)**

**Sem.-VII and VIII**


**Applicable to AY 2024-25 and AY 2025 -26**


# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for Final Year B.Tech. (Computer Science & Engineering) Sem.-VII and VIII Applicable to AY 2024-25 and AY 2025 -26

Sr.No.	Category	Course Code	Course Name	L	T	P	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Core (Theory)</b>												
01	PC	6CS401	Cryptography and Network Security	3	0	0	3	3	30	20	50	
02	PC	6CS402	High Performance Computing	3	0	0	3	3	30	20	50	
03	PC	6CS403	Data Management, Protection and Governance	3	0	0	3	3	30	20	50	
04	PC	6CS404	Research Methodology	2	0	0	2	2	30	20	50	
<b>Professional Core (Lab)</b>												
05	PC	6CS451	Cryptography and Network Security Laboratory	0	0	2	2	1	30	30	40	
06	PC	6CS452	High Performance Computing Laboratory	0	0	2	2	1	30	30	40	
07	PR	6CS491	Project Work I	0	0	6	6	3	30	30	40	POE
08	PC	6CS453	Techno-Socio Activity	0	1	0	1	1	30	30	40	
<b>Professional Elective (Theory)</b>												
09	PE	Refer List	Professional Elective IV	3	0	0	3	3	30	20	50	
<b>Open Elective</b>												
10	OE	Refer List	Open Elective III	3	0	0	3	3	30	20	50	
<b>Humanities</b>												
11	HS	6HS401	Accounting and Finance for Engineers	2	0	0	2	2	30	20	50	
<b>Total</b>				<b>19</b>	<b>1</b>	<b>8</b>	<b>30</b>	<b>25</b>				

  
Dr. N. L. Gavankar  
DAC/Secretary, BoS

  
Dr. M.A. Shah  
Head, Electrical Engg. Dept./  
Chairman, BoS

  
Dr. A.K. Kokane  
Dean Academics

# Walchand College of Engineering

(Government Aided Autonomous Institute)

## Credit System for Final Year B.Tech. (Computer Science & Engineering) Sem.-VII and VIII Applicable to AY 2024-25 and AY 2025 -26

### Elective Course List for Final Year B.Tech. (Computer Science & Engineering) Sem-VII

Sr.No.	Track	Course Code	Course Name
<b>Professional Elective-IV</b>			
01	Computing	6CS411	Human Computer Interaction
02	Computing	6CS412	Data Mining
03	Computer and Network Security	6CS413	Software-Defined Network



Dr. N. L. Gavankar  
DAC/Secretary, BoS



Dr. M.A. Shah  
Head, Electrical Engg. Dept./  
Chairman, BoS



Dr. A.K. Kokane  
Dean Academics



# Walchand College of Engineering


(Government Aided Autonomous Institute)


## Credit System for Final Year B.Tech. (Computer Science & Engineering) Sem.-VII and VIII Applicable to AY 2024-25 and AY 2025 -26


Sr.No.	Category	Course Code	Course Name	L	T	P	Hrs	Cr	MSE/LA1	ISE/LA2	ESE	Ext
<b>Professional Elective (Theory)</b>												
01	PE	Refer List	Professional Elective V	3	0	0	3	3	30	20	50	
02	PE	Refer List	Professional Elective VI	3	0	0	3	3	30	20	50	
<b>Professional Core (Lab)</b>												
03	PR	6CS492	Project Work II	0	0	12	12	6	30	30	40	POE
<b>AICTE Mandatory Course</b>												
04	MC	6IC401	Constitution of India	2	0	0	2	0	30	20	50	
<b>Total</b>				<b>08</b>	<b>0</b>	<b>12</b>	<b>20</b>	<b>12</b>				

### Elective Course List for Final Year B.Tech. (Computer Science & Engineering) Sem-VIII

Sr.No.	Track	Course Code	Course Name
<b>Professional Elective V</b>			
01	Computer and Network Security	6CS431	Computer Forensics/ NPTEL Course
02	Image Processing	6CS432	Computer Vision/ NPTEL Course
03	Computing	<b>6CS433</b>	Search Engine Design and Optimization/ NPTEL Course
<b>Professional Elective VI</b>			
01	Computing	6CS434	Systems Testing and Quality Assurance Techniques/ NPTEL Course
02	Image Processing	6CS435	Augmented Reality Virtual Reality (ARVR) / NPTEL Course

  
Dr. N. L. Gavankar  
DAC/Secretary, BoS

  
Dr. M.A. Shah  
Head, Electrical Engg. Dept./  
Chairman, BoS

  
Dr. A.K. Kokane  
Dean Academics  
I/C  
24