

Walchand College of Engineering

(Government Aided Autonomous Institute)

Vishrambag, Sangli. 416415



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

**Credit System for
S.Y. M.Tech. (Control System Engineering)
Sem-III and IV**

2021-22



Walchand College of Engineering, Sangli

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Credit System for S.Y. M.Tech. (Control System 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	PC	5CS601	Legal, Financial aspects of Industrial Project	2	0	0	0	2	2	20	20	60
Professional Core (Lab)												
2	PR	5CS690	Dissertation Phase 1	0	0	20	0	20	10	30	30	40
3	PC	5CS602	Industry Orientation Course	0	0	0	1	1	1	30	30	40
Professional Elective (Theory)												
4	PE	Refer list	Elective 5	2	0	0	0	2	2	20	20	60
Professional Elective (Lab)												
5	PR	Refer list	Activity Based Elective Lab 2	0	0	2	0	2	1	30	30	40
Value Added Professional Courses #												
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Value Added Life-Skill Courses #												
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Total				4	0	22	1	27	16			



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Elective Course List for S.Y. M.Tech. (Control System Engineering) Sem-III AY 2021-22

Sr.No.	Track	Course Code	Course Name
Activity Based Elective Lab 2			
1	Process Modelling and Dynamics	5CS651	Modern Power Electronics Lab
2	Advanced Control Algorithms	5CS652	Robust Control Lab
Elective 5			
1	Process Modelling and Dynamics	5CS611	Modern Power Electronics
2	Advanced Control Algorithms	5CS612	Robust Control

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.

The contact hours of each dissertation with the guide (research supervisor) shall be of one hour per week.

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



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Credit System for S.Y. M.Tech. (Control System 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)												
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Professional Core (Lab)												
1	PR	5CS691	Dissertation Phase 2	0	0	24	0	24	12	30	30	40
2	PR	5CS671	Techno-Socio Activity	0	0	0	1	1	1	30	30	40
Professional Elective (Theory)												
3	PE	Refer list	Elective 6	3	0	0	0	3	3	20	20	60
Value Added Professional Courses #												
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Value Added Life-Skill Courses #												
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Total				3	0	24	1	28	16			



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Elective Course List for S.Y. M.Tech. (Control System Engineering) Sem-IV AY 2021-22

Sr.No.	Track	Course Code	Course Name
Elective 6			
1	Advanced Control Algorithms	5CS621	Robotics and AI
2	Advanced Control Algorithms	5CS622	Real Time Control Application

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 dissertation with the guide (research supervisor) shall be of one hour per week.

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



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Tracks and Semester-wise Elective Courses for M.Tech. (Control System Engineering) AY 2021-22

Sr.No.	Sem	Elective	Course Code	Course Name
Advanced Control Algorithms				
1	1	Elective 1	5CS511	Optimal Control
2	1	Elective 2	5CS513	Multivariable Control
3	2	Elective 3	5CS523	Adaptive Control
4	2	Elective 4	5CS525	Neural Network and Fuzzy Control
5		Activity Based Elective	5CS575	Neural Network and Fuzzy Control Lab
6	3	Elective 5	5CS612	Robust Control
7		Activity Based Elective	5CS652	Robust Control Lab
8	4	Elective 6	5CS621	Robotics and AI
9	4	Elective 6	5CS622	Real Time Control Application
Process Modelling and Dynamics				
1	1	Elective 1	5CS512	System Identification
2	1	Elective 2	5CS514	Advanced Digital Signal Processing
3	2	Elective 3	5CS524	Computational Methods
4	2	Elective 4	5CS526	Modern Signal Processing
5		Activity Based Elective	5CS576	Modern Signal Processing Lab
6	3	Elective 5	5CS611	Modern Power Electronics
7		Activity Based Elective	5CS651	Modern Power Electronics Lab



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List of Professional Core (Theory) Courses for M.Tech. (Control System Engineering) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
Professional Core (Theory) Courses			
1	1	5CS501	Applied Digital Control
2	1	5CS502	Advanced Process Control
3	2	5CS521	Non-Linear Dynamical Systems
4	2	5CS522	PLC and Embedded Control
5	3	5CS601	Legal, Financial aspects of Industrial Project



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List of Professional Core (Lab) Courses for M.Tech. (Control System Engineering) AY 2021-22

Sr.No.	Sem	Course Code	Course Name
Professional Core (Lab) Courses			
1	1	5CS560	Research Methodology
2	1	5CS551	Activity Based Lab for Applied Digital Control
3	1	5CS552	Activity Based Lab for Advanced Process Control
4	1	5CS553	Presentation and Technical Report Writing
5	1	5CS554	Professional Skills 1
6	2	5CS571	Activity Based Lab for Non-Linear Dynamical Systems
7	2	5CS572	Activity Based Lab for PLC and Embedded Control
8	2	5CS573	Industrial Project
9	2	5CS574	Professional Skills 2
10	3	5CS690	Dissertation Phase 1
11	3	5CS602	Industry Orientation Course
12	4	5CS691	Dissertation Phase 2
13	4	5CS671	Techno-Socio Activity



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Open Electives offered by M.Tech. (Control System Engineering) to other programmes AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Offered				
1	Elect_Control	2	5OE106	Control Techniques for Electrical Drives



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Open Electives available from other programmes to M.Tech. (Control System Engineering) AY 2021-22

Sr.No.	Offering Dept	Sem	Course Code	Course Name
Open Electives Available				
1	Civil_Env	2	5OE101	Solid Waste Management
2	Civil_Struct	2	5OE102	Structural Health Monitoring
3	Mech_Prod	2	5OE103	Advanced Production systems
4	Mech_Heat	2	5OE104	Waste to Energy
5	Mech_Design	2	5OE105	Industrial Product Design
6	Elect_Control	2	5OE106	Control Techniques for Electrical Drives
7	Eln	2	5OE108	Introduction to Embedded Systems
8	CSE	2	5OE109	Machine Learning in Practice
9	IT	2	5OE110	Machine Learning & Applications