

Walchand College of Engineering, Sangli

(An Autonomous Institute)



Curriculum (Structure)

for

M. Tech. in Electronics Engineering

With Effect From

Academic Year

2018-2019 (F. Y. M. Tech.)

2019-2020 (S. Y. M. Tech.)

Walchand College of Engineering
(An Autonomous Institute)
Teaching and Evaluation Scheme
First year M. Tech. Program in Electronics Engineering
Semester I

Course			Teaching Scheme				Evaluation Scheme			
Category	Code	Name	L	T	P	Credits	Component	Marks		
								Max	Min for Passing	
MC	3EN501	Research Methodology for Electronics Engineers	2	-	-	2	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN502	Advanced Digital Signal Processing	3	1	-	4	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN503	Embedded System Design	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN504	Digital VLSI Design	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PE	3EN5**	Professional Elective 1	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN551	Digital VLSI Design Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PC	3EN552	Embedded System Design Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PE	3EN5**	Professional Elective 1 Laboratory	-	-	2	1	ISE	100	40	
Total			14	1	6	18	Total Credits: 18 Total Contact Hrs: 21			

Professional Elective 1		
3EN511	3EN561	Embedded Linux Programming
3EN512	3EN562	VLSI in Digital Signal Processing
3EN513	3EN563	Information Theory and Coding
3EN514	3EN564	Statistical Signal Processing

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Semester II

Course			Teaching Scheme				Evaluation Scheme			
Category	Code	Name	L	T	P	Credits	Component	Marks		
								Max	Min for Passing	
OE	2OE5**	Open Elective	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN521	Advanced Communication Networks and IoT	3	1	--	4	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PE	3EN5**	Professional Elective 2	3	-	--	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PE	3EN5**	Professional Elective 3	3	-	--	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PE	3EN5**	Professional Elective 4	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PE	3EN5**	Professional Elective 2 Laboratory	-	-	2	1	ISE	100	40	
PE	3EN5**	Professional Elective 3 Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PE	3EN5**	Professional Elective 4 Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PC	3EN541	Pre dissertation work and Seminar	-	-	4	2	ISE	100	40	
Total			15	1	10	21	Total Credits: 21 Total Contact Hrs: 26			

Professional Elective 2		
3EN531	3EN581	High speed VLSI design
3EN532	3EN582	RTL Simulation and Synthesis with PLDs
3EN533	3EN583	Pattern Recognition and Image Analysis
Professional Elective 3		
3EN534	3EN584	Analog VLSI Design
3EN535	3EN585	Embedded Linux system Design
3EN536	3EN586	Antenna Design
Professional Elective 4		
3EN537	3EN587	Wireless Sensor Networks
3EN538	3EN588	Advanced Embedded Programming
3EN539	3EN589	System On Chip

Open Elective		
Course Code	Course Name	Offered by Department
3OE501	Design Optimization	Applied Mechanics
3OE502	Structural Health Monitoring and Smart Materials	
3OE515	Life Cycle Assessment and Ecolabelling	Civil Engineering
3OE516	Construction Equipment	
3OE529	Business Analytics	Mechanical Engineering
3OE530	Industrial Safety	
3OE531	Operations Research	
3OE532	Cost Management of Engineering Projects	
3OE533	Composite Materials	
3OE534	Waste to Energy.	
3OE535	Project Based Learning with Embedded System	
3OE543	Control Techniques for Electrical Drives.	Electrical Engineering
3OE544	Neural Network and Fuzzy Control.	
3OE557	Remote sensing and Image Analysis	Electronics Engineering
3OE558	Automotive Electronics	
3OE559	Mechatronics	
3OE560	Digital Image processing	
3OE561	Nano materials and Nano-technology	
3OE562	Numerical Methods for Engineers	
3OE563	Optimization Techniques	
3OE571	Business Intelligence	Computer Science and Engineering
3OE 572	Cyber Security	
3OE585	Geographic Information Systems	Information Technology
3OE586	Data Visualization & Interpretation	
3OE587	Computational Engineering using Python	
3OE588	3D Modeling, Animation and Computer Simulation	

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Teaching and Evaluation Scheme

**Second year M. Tech. Program in Electronics Engineering
Semester III**

Course			Teaching Scheme				Evaluation Scheme			
Category	Code	Name	L	T	P	Credits	Component	Marks		
								Max	Min for Passing	
PE	3EN6**	Professional Elective 5	3	-	-	3	ISE 1	10	20	40
							MSE	30		
							ISE 2	10		
							ESE	50		
PC	3EN690	Dissertation phase I	-	-	5	10	ISE 1 (4 credit)	100	40	
							ISE 2 (2 credit)	100	40	
							ESE 1 (4 credit)	100	40	
MC	3IC6**	Mandatory Non Credit Course	2	-	-	-	ISE 1	35	40	
							MSE	30		
							ISE 2	35		
Total			5	-	5	13	Total Credits: 13 Total Contact Hrs: 10			

Program Elective Course V	
3EN611	Artificial Intelligence
3EN612	Advanced Automotive Electronics
3EN613	Introduction to machine learning
3EN614	DSP Architectures

List of Mandatory Non Credit Course	
3IC601	Constitution of India
3IC602	Pedagogy of Studies
3IC603	Disaster Management
3IC604	Value Education

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Teaching and Evaluation Scheme

**Second year M. Tech. Program in Electronics Engineering
Semester IV**

Course			Teaching Scheme				Evaluation Scheme		
Category	Code	Name	L	T	P	Credits	Component	Marks	
								Max	Min for Passing
PC	3EN691	Dissertation phase II	-	-	5	16	ISE 3 (4 credit)	100	40
							ISE 4 (4 credit)	100	40
							ESE 2 (8 credit)	100	40
MC	3IC6**	Mandatory Non Credit Course	2	-	-	-	ISE 1	35	40
							MSE	30	
							ISE 2	35	
Total			-	-	5	16	Total Credits: 16 Total Contact Hrs: 5		

Program Elective Course V	
3EN611	Artificial Intelligence
3EN612	Advanced Automotive Electronics
3EN613	Introduction to machine learning
3EN614	DSP Architectures

List of Mandatory Non Credit Course	
3IC601	Constitution of India
3IC602	Pedagogy of Studies
3IC603	Disaster Management
3IC604	Value Education

Semester	I	II	III	IV	Total
Credits	18	21	13	16	68

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Curriculum Comparison for WCE and AICTE

Category

M. Tech. Electronics Engineering					
Sr. No.	Category	Credits		%	
		AICTE	Dept	AICTE	Dept
1	PC	12	14	17.6	20.6
2	PE	15	15	22.1	22.1
3	PCL	10	6	14.7	8.8
4	OE	3	3	4.4	4.4
5	PC	26	26	38.2	38.2
6	MC	2	2	2.9	2.9
7	PC	0	2	0.0	2.9
8	PC	0	0	0.0	0.0
9	MC	0	0	0.0	0.0
Total Credits		68	68	100	100

Core theory courses (PC)

Programme Elective courses relevant to chosen specialization/ branch& (PE)

Core/Elective laboratory courses (PCL)

Open subjects – Electives from other technical and /or emerging subjects (OE)

Dissertation (PC)

Mandatory course on Research Methodology (MC)

Pre-dissertation work and seminar (PC)

Summer Internship (PC)

Mandatory Non- credit Courses (MC)