Walchand College of Engineering, Sangli

(An Autonomous Institute)

Curriculum (Structure)

for

M.Tech.

Computer Science & Engineering

With Effect From

Academic Year

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

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

Walchand College of Engineering, Sangli

(An Autonomous Institute)

Teaching and Evaluation Scheme

First year M. Tech. Program in Computer Science & Engineering

Semester I

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing	
MC	3CO501	Research Methodology for Computer Science Engineers	2	-	-	2	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PC	3CO502	Mathematical foundations of Computer Science	3	-	-	3	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PC	3CO503	Advanced Data Structures	3	-	-	3	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PE	3CO5**	Professional Elective 1	3	-	-	3	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PE	3CO5**	Professional Elective 2	3	-	-	3	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PC	3CO551	Mathematical foundations of Computer Science Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PC	3CO552	Advanced Data Structures Laboratory	-	-	2	1	ISE	50	20	
							ESE	50	20	
PE	3CO5**	Professional Elective Laboratory 1	-	-	2	1	ISE	50	20	
							ESE	50	20	
PE	3CO5**	Professional Elective Laboratory 2	-	-	2	1	ISE	50	20	
							ESE	50	20	
Total			14	0	8	18	**Total Credits: 18** **Total Contact Hrs: 22**			

List of Professional Elective 1			List of Professional Elective 2		
3CO511	3CO561	Software Architecture	3CO514	3CO564	Data Science
3CO512	3CO562	Image Processing	3CO515	3CO565	Information System Security
3CO513	3CO563	Internet of Things	3CO516	3CO566	Advanced Network Technologies

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Teaching and Evaluation Scheme
First year M. Tech. Program in Computer Science & Engineering
Semester II

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing
OE	3OE5**	Open Elective	3	-	--	3	ISE 1	10	
							MSE	30	
							ISE 2	10	40
							ESE	50	20
PC	3CO521	Advanced Algorithms	3	-	--	3	ISE 1	10	
							MSE	30	
							ISE 2	10	40
							ESE	50	20
PC	3CO522	Soft Computing	3	-	-	3	ISE 1	10	
							MSE	30	
							ISE 2	10	40
							ESE	50	20
PE	3CO5**	Professional Elective 3	3	-	--	3	ISE 1	10	
							MSE	30	
							ISE 2	10	40
							ESE	50	20
PE	3CO5**	Professional Elective 4	3	-	-	3	ISE 1	10	
							MSE	30	
							ISE 2	10	40
							ESE	50	20
PC	3CO551	Advanced Algorithms Laboratory	-	-	2	1	ISE	50	20
							ESE	50	20
PC	3CO552	Soft Computing Laboratory	-	-	2	1	ISE	50	20
							ESE	50	20
PE	3CO5**	Professional Elective Laboratory 3	-	-	2	1	ISE	50	20
							ESE	50	20
PE	3CO5**	Professional Elective Laboratory 4	-	-	2	1	ISE	50	20
							ESE	50	20
PC	3CO541	Pre-dissertation work and seminar	-	-	4	2	ISE	100	40
Total			15	0	12	21	**Total Credits: 21** **Total Contact Hrs: 27**		

List of Professional Elective 2		List of Professional Elective 3	
3CO531	Machine Learning	3CO534	High Performance Computing
3CO532	Computer Vision	3CO535	Theory and Applications of Remote Sensing & GIS
3CO533	Network Security	3CO536	Modern Operating System

List of Professional Elective Laboratory 2		List of Professional Elective Laboratory 3	
3CO581	Machine Learning Laboratory	3CO584	High Performance Computing Laboratory
3CO582	Computer Vision Laboratory	3CO585	Theory and Applications of Remote Sensing & GIS Laboratory
3CO583	Network Security Laboratory	3CO586	Modern Operating System Laboratory

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	

Walchand College of Engineering, Sangli

(An Autonomous Institute)
Teaching and Evaluation Scheme
Second year M. Tech. Program in Computer Science & Engineering
Semester I

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing	
PE	3CO6**	Professional Elective 5	3	-	-	3	ISE 1	10		40
							MSE	30		
							ISE 2	10		
							ESE	50	20	
PC	3CO690	Dissertation phase I	-	-	5	4	ISE	100	40	
	3CO691	Dissertation phase II				2	ISE	100	40	
						4	ESE	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**			

List of Professional Elective 5	
3CO611	Recommender Systems
3CO612	Human Computer Interaction and Interface Design
3CO613	Computer Forensics

Semester II

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing
PC	3CO692	Dissertation phase III	-	-	5	4	ISE	100	40
	3CO693	Dissertation phase IV				4	ISE	100	40
						8	ESE	100	40
MC	3IC6**	Mandatory Non Credit Course	2	-	-	-	ISE 1	35	40
							MSE	30	
							ISE 2	35	
Total			2	-	5	16	Total Credits: 16 Total Contact Hrs: 7		

The header spans: Course (Category, Code, Name), Teaching Scheme (L, T, P, Credits), Evaluation Scheme (Component, Marks: Max, Min for Passing)

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

M. Tech. Computer Science and Engineering					
Sr. No.	**Category**	**Credits**		**%**	
		AICTE	**Dept**	**AICTE**	**Dept**
1	PC	12	12	17.6	17.6
2	PE	15	15	22.1	22.1
3	PCL	10	8	14.7	11.8
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**	**100.0**	**100.0**

Category

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)