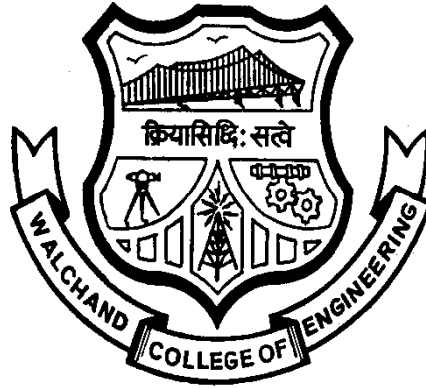# Walchand College of Engineering, Sangli

(An Autonomous Institute)

Curriculum (Structure)

for

M. Tech.

Computer Science and Information Technology

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 and Information Technology
Semester I

Course			Teaching Scheme				Evaluation Scheme		
Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing
MC	3IT501	Research Methodology for IT Engineers	2	-	-	2	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT502	Advanced Algorithms	3	1	0	4	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT503	Cryptology	3	1	0	4	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT504	UNIX Internals	2	0	0	2	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PE	3IT5**	Professional Elective 1	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PE	3IT5**	Professional Elective 2	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT551	UNIX Internals Lab	0	0	2	1	ISE	50	20
							ESE	50	20
Total			16	2	2	19	Total Credits: 19 Total Contact Hrs: 20		

Professional Elective 1		Professional Elective 2	
3IT511	Artificial Intelligence	3IT516	Software Reliability and Fault Detection
3IT512	Machine learning	3IT517	Wireless Sensor Network
3IT513	Distributed Operating Systems	3IT518	Cloud and Virtualization Techniques
3IT514	Decision Support Systems	3IT519	Information Retrieval
3IT515	Agile Software Design	3IT520	Web Development

Course			Teaching Scheme				Evaluation Scheme		
Category	**Code**	**Name**	**L**	**T**	**P**	**Credits**	**Component**	**Max**	**Min for Passing**
OE	3OE5**	Open Elective	3	-	--	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT521	Data Mining Methods and Applications	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT522	Image Processing and Pattern Recognition	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PE	3IT5**	Professional Elective 3	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PE	3IT5**	Professional Elective 4	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT571	Data Mining Methods and Applications Lab	0	0	2	1	ISE	50	20
							ESE	50	20
PC	3IT572	Image Processing and Pattern Recognition Lab	0	0	2	1	ISE	50	20
							ESE	50	20
PC	3IT573	Scientific Computing Lab	0	0	2	1	ISE	50	20
							ESE	50	20
PC	3IT541	Pre-dissertation work and seminar	-	-	4	2	ISE	100	40
Total			15	0	10	20	**Total Credits: 20** **Total Contact Hrs: 25**		

Professional Elective 3	
3IT531	Deep Learning
3IT532	Real time Operating Systems
3IT533	High Performance Computing
3IT534	Big Data Analysis
3IT535	Soft Computing
Professional Elective 4	
3IT540	Database Design and Performance Tuning
3IT536	Software Defined Network
3IT537	Computer Security and Forensics
3IT538	Data Warehousing
3IT539	Parallel Algorithms

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
First year M. Tech. Program in Computer Science and Information Technology
Semester I

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing
PE	3IT6**	Professional Elective 5	3	0	0	3	ISE 1	10	40
							MSE	30	
							ISE 2	10	
							ESE	50	20
PC	3IT690	Dissertation phase I	-	-	5	4	ISE	100	40
	3IT691	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	0	5	13	**Total Credits: 13** **Total Contact Hrs: 10**		

Semester II

Category	Code	Name	L	T	P	Credits	Component	Max	Min for Passing
PC	3IT692	Dissertation phase III	-	-	5	4	ISE	100	40
	3IT693	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			-	-	5	16	**Total Credits: 16** **Total Contact Hrs: 5**		

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

Professional Elective 5	
3IT631	Graph Theory
3IT632	Social Media analytics
3IT633	Game Theory

Semester	I	II	III	IV	Total
Credits	19	20	13	16	68

M. Tech. Computer Science and Information Tech.					
Sr. No.	Category	Credits		%	
		AICTE	Dept	AICTE	Dept
1	PC	12	16	17.6	23.5
2	PE	15	15	22.1	22.1
3	PCL	10	4	14.7	5.9
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)