

SANJIVANI RURAL EDUCATION SOCIETY'S
SANJIVANI COLLEGE OF ENGINEERING
KOPARGAON

(An Autonomous Institute Affiliated to SPPU Pune)



DEPARTMENT OF INFORMATION
TECHNOLOGY
COURSE STRUCTURE - 2019 PATTERN
B. TECH. IT

LIST OF ABBREVIATIONS			
Abbreviation	Full Form	Abbreviation	Full Form
ES	Engineering Science	HSMC	Humanity Science
PC	Professional Core	CA	Continuous Assessment
PE	Professional Elective	OR	End Semester Oral Examination
OE	Open Elective	PR	End Semester Practical Examination
ISE	In-Semester Evaluation	TW	Continuous Term work Evaluation
ESE	End-Semester Evaluation	BSC	Basic Science Course
PRJ	Project	MC	Mandatory Course

COURSE STRUCTURE - 2019 PATTERN

SECOND YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - III

Course		Course Title	Teaching Scheme Hours/ Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L	T	P		Theory			OR	PR	TW	Total
							ISE	ESE	CA				
PRJ	IT201	First Year Internship	-	-	-	2	-	-	-	50	-	-	50
BSC	BS202	Vector Calculus And Differential Equation	4	-	-	4	30	50	20	-	-	-	100
PC	IT203	Digital Electronics & Computer Organization	4	-	-	4	30	50	20	-	-	-	100
PC	IT204	Fundamentals of Data Structures	3	-	-	3	30	50	20	-	-	-	100
PC	IT205	Object Oriented Programming	3	-	-	3	30	50	20	-	-	-	100
HSMC	HS206	Universal Human Values And Ethics	3	-	-	3	30	50	20	-	-	-	100
PC	IT207	Digital Electronics Laboratory	-	-	2	1	-	-	-	25	25	25	75
PC	IT208	Fundamental of Data Structure Laboratory	-	-	2	1	-	-	-	25	25	25	75
PC	IT209	Object Oriented Programming Laboratory	-	-	2	1	-	-	-	25	25	25	75
MC	MC210	Mandatory Course-III	2	-	-	NON Credit	-	-	-	-	-	-	-
Total			19	-	6	22	150	250	100	125	75	75	775

MC210	Mandatory Course-III	Constitution of India – Basic features and fundamental principles
-------	----------------------	---

COURSE STRUCTURE - 2019 PATTERN

SECOND YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - IV

Course		Course Title	Teaching Scheme Hours/Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L	T	P		Theory			OR	PR	TW	Total
							IS E	ESE	CA				
PC	IT211	Discrete Mathematics	3	1	-	4	30	50	20	-	-	-	100
PC	IT212	Database Management System	3	-	-	3	30	50	20	-	-	-	100
PC	IT213	Microprocessor & Microcontroller	4	-	-	4	30	50	20	-	-	-	100
PC	IT214	Data Structures & Files	4	-	-	4	30	50	20	-	-	-	100
PC	IT215	Database Management System Laboratory	-	-	2	1	-	-	-	50	-	25	75
PC	IT216	Microprocessor & Microcontroller Laboratory	-	-	2	1	-	-	-	-	50	25	75
PC	IT217	Data Structures & Files Laboratory	-	-	2	1	-	-	-	-	50	25	75
PRJ	IT218	Seminar	2	-	-	2	-	-	-	50	-	-	50
PRJ	IT219	Mini Project	-	-	4	2	-	-	-	-	-	50	50
MC	MC220	Mandatory Course-IV	2	-	-	NON Credit	-	-	-	-	-	-	-
Total			18	1	10	22	120	200	80	100	100	125	725

MC220	Mandatory Course-IV	Innovation - Project based – Sc., Tech, Social, Design & Innovation
-------	---------------------	---

COURSE STRUCTURE - 2019 PATTERN

THIRD YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - V

Course		Course Title	Teaching Scheme Hours/Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L T P				Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PRJ	IT301	Professional Internship-II	-	-	-	2	-	-	-	50	-	-	50
PC	IT302	System Programming and Operating System	4	-	-	4	30	50	20	-	-	-	100
PC	IT303	Computer Network	3	-	-	3	30	50	20	-	-	-	100
PC	IT304	Internet of Things	3	-	-	3	30	50	20	-	-	-	100
PC	IT305	Theory of Computation	3	-	-	3	30	50	20	-	-	-	100
PE	IT306	Professional Elective-I	3	-	-	3	30	50	20	-	-	-	100
PC	IT307	System Programming and Operating system Lab	-	-	2	1	-	-	-	-	25	25	50
PC	IT308	Computer Network Laboratory	-	-	2	1	-	-	-	25	-	-	25
PC	IT309	Internet of Things Laboratory	-	-	2	1	-	-	-	-	25	-	25
PRJ	IT310	Skill Based Credit Course	1	-	-	1	-	-	50	-	-	-	50
MC	MC311	Mandatory Course-V	1	-	-	NON Credit	-	-	-	-	-	-	-
Total			18	-	6	22	150	250	150	75	50	25	700

IT310	Skill Based Credit Course	Minimum 12 week course to be conducted in association with the industry on software product development.
MC311	Mandatory Course-V	Behavioral and Interpersonal skills (non-verbal skills / behaviors, nonaggression)

IT316 Professional Elective- I	
Course Code	Course
IT306A	Cloud Computing
IT306B	Foundation of Data Science
IT306C	Data Mining Techniques
IT306D	Compiler Design

COURSE STRUCTURE - 2019 PATTERN

THIRD YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER- VI

Course		Course Title	Teaching Scheme			Credits	Evaluation Scheme-Marks						
Cat.	Code		Hours/ Week				Theory			OR	PR	TW	Total
			L	T	P		ISE	ESE	CIA				
PC	IT312	Cryptography and Cyber Security	3	-	-	3	30	50	20	-	-	-	100
PC	IT313	Artificial Intelligence	3	-	-	3	30	50	20	-	-	-	100
PE	IT314	Professional Elective-II	3	-	-	3	30	50	20	-	-	-	100
OE	IT315	Open Elective-I	4	-	-	4	30	50	20	-	-	-	100
PRJ	PR316	IPR & EDP	2	-	-	1	15	25	10	-	-	-	50
PRJ	PR317	IPR & EDP Lab	-	-	2	1	-	-	-	-	-	50	50
HSMC	HS318	Corporate Readiness	1	-	2	2	-	-	-	-	-	50	50
PC	IT319	Cyber Security Laboratory	-	-	2	1	-	-	-	-	50	-	50
PC	IT320	Artificial Intelligence Laboratory	-	-	2	1	-	-	-	50	-	-	50
MC	MC321	Mandatory Course-VI	1	-	-	Non Credit	-	-	-	-	-	-	-
Total			17	-	08	20	135	225	90	50	50	100	650

IT314 Professional Elective- II		IT315 Open Elective-I	
Course Code	Course	Course Code	Course
IT314A	Software Testing and Quality Assurance	IT315	Object Oriented Programming with JAVA/ C++/Python
IT314B	Big Data Analytics	Equivalent courses for IT315: 1. NPTEL Course: "Object Oriented Programming with C++". 2. NPTEL Course: "The Joy of Computing using Python". 3. NPTEL Course: "Programming in Java". 4. NPTEL Course: "Blockchain and it's Applications".	
IT314C	Natural Language Processing		
IT314D	Optimization Techniques		

Mandatory Course-VI	
MC320	Suitable Technical / Non-Technical Activities finalized by Department

COURSE STRUCTURE - 2019 PATTERN

FINAL YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - VII

Course		Course Title	Teaching Scheme Hours/ Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L T P				Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PRJ	IT401	Professional Internship-III	-	-	-	2	-	-	-	50	-	-	50
PC	IT402	Software Engineering, Modeling and Design	3	-	-	3	30	50	20	-	-	-	100
PC	IT403	Machine Learning	3	-	-	3	30	50	20	-	-	-	100
PE	IT404	Professional Elective-III	3	-	-	3	30	50	20	-	-	-	100
OE	IT405	Open Elective-II	3	-	-	3	-	75	25	-	-	-	100
OE	IT406	Open Elective-III	2	-	-	2	-	30	20	-	-	-	50
PC	IT407	Software Modeling And Design Laboratory	-	-	2	1	-	-	-	50	-	-	50
PC	IT408	Machine Learning Laboratory	-	-	2	1	-	-	-	-	50	-	50
PRJ	IT409	Project Stage-I	-	-	4	2	-	-	-	-	-	50	50
MC	MC410	Mandatory Course – VII	1	-	-	Non Credit	-	-	-	-	-	-	-
Total			15	-	8	20	500			100	50	50	650

IT404 Professional Elective- III		IT405 Open Elective-II	
Course Code	Course	Course Code	Course
IT404A	Project Management	IT 405	Programming in Java (NPTEL)
IT404B	Digital Twin	IT406 Open Elective-III	
IT404C	Cognitive Intelligence	Course Code	Course
IT404D	Fog Computing	IT 406	AWS DevOps (Coursera)

Mandatory Course-VII

MC410	Spiritual, Mindfulness and Meditation
-------	---------------------------------------

COURSE STRUCTURE - 2019 PATTERN

FINAL YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - VIII

Course		Course Title	Teaching Scheme Hours/Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L T P				Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
PC	IT411	Cryptocurrency Technology and Smart contract	3	-	-	3	30	50	20	-	-	-	100
PC	IT412	Ethical Hacking	3	-	-	3	30	50	20	-	-	-	100
PC	IT413	Distributed Systems	3	-	-	3	30	50	20	-	-	-	100
PE	IT414	Professional Elective-IV	3	-	-	3	30	50	20	-	-	-	100
PC	IT415	Cryptocurrency Technology and Smart Contract Laboratory	-	-	2	1	-	-	-	50	-	-	50
PC	IT416	Ethical Hacking Laboratory	-	-	2	1	-	-	-	-	50	-	50
PRJ	IT417	Project Stage-II	-	-	8	4	-	-	-	50	-	100	150
MC	MC418	Mandatory Course -VIII	1	-	-	Non Credit	-	-	-	-	-	-	-
Total			13		12	18	400			100	50	100	650

IT414 Professional Elective- IV	
Course Code	Course
IT414A	Software Architecture
IT414B	Ubiquitous Computing
IT414C	Business Intelligence
IT414D	Software Defined Network

Mandatory Course-VII	
MC418	To be finalized by department