

SANJIVANI RURAL EDUCATION SOCIETY'S
SANJIVANI COLLEGE OF ENGINEERING
KOPARGAON

(An Autonomous Institute Affiliated to SPPU Pune)



**DEPARTMENT OF INFORMATION
TECHNOLOGY**
COURSE STRUCTURE - 2020 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 - 2020 PATTERN
SECOND YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - III

Course		Course Title	Teaching Scheme			Credits	Evaluation Scheme - Marks						
Cat.	Code		Hours/ Week				Theory			OR	PR	TW	Total
			L	T	P		ISE	ESE	CA				
PC	IT201	Discrete Mathematics	3	1	-	4	30	50	20	-	-	-	100
PC	IT202	Digital Electronics & Computer Organization	4	-	-	4	30	50	20	-	-	-	100
PC	IT203	Fundamentals of Data Structures	3	-	-	3	30	50	20	-	-	-	100
PC	IT204	Object Oriented Programming	3	-	-	3	30	50	20	-	-	-	100
HS MC	HS205	Universal Human Values And Ethics	3	-	-	3	30	50	20	-	-	-	100
PC	IT206	Digital Electronics Laboratory	-	-	2	1	-	-	-	-	-	50	50
PC	IT207	Fundamental of Data Structure Laboratory	-	-	2	1	-	-	-	-	50	-	50
PC	IT208	Object Oriented Programming Laboratory	-	-	2	1	-	-	-	50	-	-	50
MC	MC209	Mandatory Course-III	2	-	-	NON Credit	-	-	-	-	-	-	-
Total			18	1	6	20	150	250	100	50	50	50	650

MC209	Mandatory Course-III	Constitution of India – Basic features and fundamental principles
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COURSE STRUCTURE - 2020 PATTERN
SECOND YEAR B. TECH. INFORMATION TECHNOLOGY

SEMESTER - IV

Course		Course Title	Teaching Scheme			Credits	Evaluation Scheme – Marks						
Cat.	Code		Hours/ Week				Theory			OR	PR	TW	Total
			L	T	P		ISE	ESE	CA				
PC	IT210	Microprocessor & Microcontroller	4	-	-	4	30	50	20	-	-	-	100
PC	IT211	Database Management System	3	-	-	3	30	50	20	-	-	-	100
BS	BS202	Engineering Mathematics - III	3	1	-	4	30	50	20	-	-	-	100
PC	IT213	Data Structures & Files	4	-	-	4	30	50	20	-	-	-	100
PC	IT214	Database Management System Laboratory	-	-	2	1	-	-	-	-	-	50	50
PC	IT215	Microprocessor & Microcontroller Laboratory	-	-	2	1	-	-	-	50	-	-	50
PC	IT216	Data Structures & Files Laboratory	-	-	2	1	-	-	-	-	50	-	50
PRJ	IT217	Seminar	2	-	-	2	-	-	-	-	-	100	100
PRJ	IT218	Mini Project	-	-	4	2	-	-	-	100	-	-	100
MC	MC219	Mandatory Course-IV	2	-	-	NON Credit	-	-	-	-	-	-	-
Total			18	1	10	22	120	200	80	150	50	150	750

MC219	Mandatory Course-IV	Innovation - Project based – Sc., Tech, Social, Design & Innovation
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COURSE STRUCTURE - 2020 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				
PC	IT301	Software Engineering, Modeling and Design	4	-	-	4	30	50	20	-	-	-	100
PC	IT302	Computer Network	4	-	-	4	30	50	20	-	-	-	100
PC	IT303	Internet of Things	3	-	-	3	30	50	20	-	-	-	100
PC	IT304	Theory of Computation	3	-	-	3	30	50	20	-	-	-	100
PE	IT305	Professional Elective-I	3	-	-	3	30	50	20	-	-	-	100
PC	IT306	Software Modeling and Design Laboratory	-	-	2	1	-	-	-	-	50	-	50
PC	IT307	Computer Network Laboratory	-	-	2	1	-	-	-	50	-	-	50
PC	IT308	Internet of Things Laboratory	-	-	2	1	-	-	-	-	-	50	50
PRJ	IT309	Mini Project Based on Skill Based Credit Course	-	-	2	1	-	-	50	-	-	-	50
MC	MC310	Mandatory Course-V	1	-	-	NON Credit	-	-	-	-	-	-	-
Total			18	-	08	21	150	250	150	50	50	50	700

IT309	Skill Based Credit Course	Minimum 12 week course to be conducted in association with the industry on software product development.
MC310	Mandatory Course-V	Behavioral and Interpersonal skills (non-verbal skills / behaviors, nonaggression)

IT305 Professional Elective- I	
Course Code	Course
IT305A	Software Testing and Quality Assurance
IT305B	Foundation of Data Science
IT305C	Data Mining Techniques

COURSE STRUCTURE - 2020 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	IT311	Cryptography and Cyber Security	3	-	-	3	30	50	20	-	-	-	100
PC	IT312	Artificial Intelligence	3	-	-	3	30	50	20	-	-	-	100
PC	IT313	System Programming and Operating System	4	-	-	4	30	50	20	-	-	-	100
PE	IT314	Professional Elective-II	3	-	-	3	30	50	20	-	-	-	100
HSMC	HS315	Corporate Readiness	2	-	-	2	-	-	50	-	-	-	50
PRJ	PR316	IPR & EDP	2	-	-	2	-	30	20	-	-	-	50
PC	IT317	Cryptography and Cyber Security Laboratory	-	-	2	1	-	-	-	-	50	-	50
PC	IT318	Artificial Intelligence Laboratory	-	-	2	1	-	-	-	50	-	-	50
PC	IT319	System Programming & Operating System Lab	-	-	2	1	-	-	-	-	50	-	50
PRJ	IT320	Creational Activity	-	-	2	1	-	-	-	-	-	50	50
MC	MC321	Mandatory Course-VI	1	-	-	Non Credit	-	-	-	-	-	-	-
Total			18	-	8	21	120	230	150	100	50	50	700

IT314 Professional Elective- II	
Course Code	Course
IT314A	Project Management
IT314B	Big Data Analytics
IT314C	Compiler Design

Mandatory Course-VI	
MC321	Suitable Technical / Non-Technical Activities finalized by Department

COURSE STRUCTURE - 2020 PATTERN

SEMESTER - VII

Course		Course Title	Teaching Scheme Hours/ Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		L T P				Theory			OR	PR	TW	Total
							CIA	ISE	ESE				
PC	IT401	Natural Language Processing	3	-	-	3	20	30	50	-	-	-	100
PC	IT402	Distributed Systems	4	-	-	4	20	30	50	-	-	-	100
PC	IT403	Machine Learning	3	-	-	3	20	30	50	-	-	-	100
PE	IT404	Professional Elective-III	3	-	-	3	20	30	50	-	-	-	100
PE	IT405	Professional Elective-IV	3	-	-	3	20	30	50	-	-	-	100
PC	IT406	Natural Language Processing & Machine Learning Laboratory	-	-	4	2	-	-	-	-	50	50	100
PC	IT407	Distributed Systems Laboratory	-	-	2	1	-	-	-	50	-	-	50
PRJ	IT408	Project Stage - I	-	-	6	3	-	-	-	50	-	100	150
MC	MC409	Mandatory Course – VII	1	-	-	Non Credit	-	-	-	-	-	-	Pass/Fail
Total			17	-	12	22	100	150	250	100	50	150	800

MC409	Mandatory Course – VII	Finance related course proposed by Financial Smart
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IT404 Professional Elective- III		IT405 Professional Elective- IV	
Course Code	Course	Course Code	Course
IT404A	Software Architecture	IT405A	Cloud Computing
IT404B	Digital Twin	IT405B	Ubiquitous Computing
IT404C	Cognitive Intelligence	IT405C	Business Intelligence

HONORS SPECIALIZATION IN CYBER SECURITY

Course		Course Title	Teaching Scheme Hours/ Week			Credits	Evaluation Scheme-Marks						
Cat.	Code		L T P				Theory			OR	PR	TW	Total
							ISE	ESE	CIA				
HSIT	IT8104	Ethical Hacking & Digital Forensic Tools	3	-	-	3	30	50	20	-	-	-	100
HSIT	IT8105	Ethical Hacking & Digital Forensic Tools Lab	-	-	2	1	-	-	-	50	-	-	50
Total			4	-	2	4	30	50	20	50	-	-	150

COURSE STRUCTURE - 2020 PATTERN

SEMESTER - VIII

Course		Course Title	Teaching Scheme Hours/Week			Credits	Evaluation Scheme - Marks						
Cat.	Code		Theory				OR	PR	TW	Total			
			L	T	P						CIA	ISE	ESE
OE	IT410	Open Elective-I	3	-	-	3	-	25	75	-	-	-	100
OE	IT411	Open Elective-II	3	-	-	3	-	25	75	-	-	-	100
OE	IT412	Open Elective-III	2	-	-	2	-	25	75	-	-	-	100
PRJ	IT413	Professional Internship	-	-	12	6	-	-	-	50	-	100	150
PRJ	IT414	Project Stage - II	-	-	8	4	-	-	-	50	-	-	50
Total			8	-	20	16	-	75	225	100	-	100	500

IT410 Open Elective- I		IT411 Open Elective- II		IT412 Open Elective- II	
Course Code	Course	Course Code	Course	Course Code	Course
IT410OE1	Product and Brand Management	IT411OE1	Design & Implementation of Human-Computer Interfaces	IT412OE1	Introduction to Haskell Programming
IT410OE2	Organizational Behaviour	IT411OE2	Ethical Hacking	IT412OE2	Computer Graphics
IT410OE3	E-Business	IT411OE3	Introduction to Industry 4.0 And Industrial Internet of Things	IT412OE3	Google Cloud Computing Foundations
IT410OE4	Management Information System				

HONORS SPECIALIZATION IN CYBER SECURITY

Course		Course Title	Teaching Scheme Hours/Week			Credits	Evaluation Scheme-Marks						
Cat.	Code		Theory				OR	PR	TW	Total			
			L	T	P						ISE	ESE	CIA
HSIT	IT8106	Mobile Hacking	4	-	-	4	30	50	20	-	-	-	100
Total			4	-	-	4	30	50	20	-	-	-	100