

SRI VENKATESWARA COLLEGE OF ENGINEERING

**An Autonomous Institution,
Affiliated to Anna University, Chennai
SRIPERUMBUDUR TK - 602 117**



REGULATIONS 2018

**B.E COMPUTER SCIENCE AND ENGINEERING
Choice Based Credit System
Curriculum and Syllabus**

SEMESTER I

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/ Movable
THEORY										
1.	HS18151	Communicative English (Common to all Branches)	HS	3	3	0	0	3	NIL	F
2.	MA18151	Engineering Mathematics I (Common to all branches except MR)	BS	4	3	1	0	4	NIL	F
3.	PH18151	Engineering Physics (Common to all branches)	BS	3	3	0	0	3	NIL	F
4.	CY18151	Engineering Chemistry (Common to all branches except MR)	BS	3	3	0	0	3	NIL	F
5.	EE18151	Basic Electrical and Electronics Engineering (Common to AE, BT, CE, CS, IT, MR & ME)	ES	3	3	0	0	3	NIL	F
6.	IT18101	Programming for Problem Solving (Common to all branches except MR)	ES	3	3	0	0	3	NIL	F
PRACTICAL										
7.	PC18161	Physics and Chemistry Laboratory (Common to all branches)	BS	2	0	0	2	1	NIL	F
8.	GE18161	Engineering Practices Laboratory (Common to all branches)	ES	3	0	0	3	1.5	NIL	F
9.	IT18111	Programming for Problem Solving Laboratory (Common to all branches except MR)	ES	3	0	0	3	1.5	NIL	F
TOTAL				27	18	1	8	23	-	-

(Recommended by BoS - Meeting held on 28.07.2018)

SEMESTER II

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	HS18251	Technical English (Common to all branches)	HS	3	3	0	0	3	NIL	F
2.	MA18251	Engineering Mathematics II (Common to all branches except MR)	BS	4	3	1	0	4	NIL	F
3.	GE18151	Engineering Drawing (Common to all branches)	BS	5	3	0	2	4	NIL	F
4.	GE18251	Environmental Science and Engineering (Common to all branches)	BS	3	3	0	0	3	NIL	F
5.	CS18201	Digital Principles and System Design (Common to CS & IT)	ES	3	3	0	0	3	NIL	F
6.	CS18202	Object Oriented Programming	PC	3	3	0	0	3	NIL	F
PRACTICAL										
7.	CS18211	Digital Principles and System Design Laboratory (Common to CS & IT)	PC	3	0	0	3	1.5	NIL	F
8.	CS18212	Object Oriented Programming Laboratory	PC	3	0	0	3	1.5	NIL	F
TOTAL				27	18	1	8	23	-	-

(Recommended by BoS - Meeting held on 28.07.2018)

SEMESTER III

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	MA18352	Discrete Mathematics (Common to CS & IT)	BS	4	3	1	0	4	NIL	F
2.	CS18301	Data Structures	PC	3	3	0	0	3	NIL	F
3.	CS18302	Database Management Systems	PC	3	3	0	0	3	NIL	F
4.	CS18303	Microprocessor and its Applications	PC	3	3	0	0	3	NIL	F
5.	CS18304	Advanced Object Oriented Programming	PC	3	3	0	0	3	NIL	F
PRACTICAL										
6.	CS18311	Data Structures Laboratory	PC	3	0	0	3	1.5	NIL	F
7.	CS18312	Database Management Systems Laboratory	PC	3	0	0	3	1.5	NIL	F
8.	CS18313	Microprocessor Laboratory	PC	3	0	0	3	1.5	NIL	F
TOTAL				25	15	1	9	20.5	-	-

(Recommended by BoS - Meeting held on 19.02.2019)

SEMESTER IV

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	MA18453	Probability and Queuing Theory (Common to CS & IT)	BS	4	3	1	0	4	NIL	F
2.	CS18401	Computer Architecture (Common to CS and EE)	PC	3	3	0	0	3	NIL	F
3.	CS18402	Operating Systems	PC	3	3	0	0	3	NIL	F
4.	CS18403	Computer Networks (Common to CS and EE)	PC	3	3	0	0	3	NIL	F
5.	CS18404	Software Engineering	PC	3	3	0	0	3	NIL	F
6.	CS18405	Design and Analysis of Algorithms	PC	3	3	0	0	3	NIL	F
PRACTICAL										
7.	CS18411	Operating Systems Laboratory	PC	3	0	0	3	1.5	NIL	F
8.	CS18412	Computer Networks Laboratory	PC	3	0	0	3	1.5	NIL	F
9.	CS18413	Software Engineering Laboratory	PC	3	0	0	3	1.5	NIL	F
TOTAL				28	18	1	9	23.5	-	-

SEMESTER V

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	CS18501	User Interface Technologies (Common to CS and IT)	PC	4	3	1	0	4	NIL	F
2.	IT18502	Mobile Computing (Common to IT and CS)	PC	4	3	1	0	4	NIL	F
3.	CS18502	Datamining and Data warehousing	PC	4	3	1	0	4	CS18302	M
4.	CS18503	Theory of Computation	PC	4	3	1	0	4	NIL	F
5.	****	Professional Elective I	PE	3	3	0	0	3	NIL	M
PRACTICAL										
6.	CS18511	User Interface Technologies Laboratory (Common to CS and IT)	PC	4	0	0	4	2	NIL	F
7.	CS18512	Mobile Application Development Laboratory	PC	4	0	0	4	2	NIL	F
8.	HS18561	Interview and Career Skills Laboratory (Common to all branches except BT and EE)	EEC	3	0	0	3	2	NIL	F
TOTAL				30	15	4	11	25	-	-

(Recommended by BoS - Meeting held on 19.02.2019)

SEMESTER VI

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	CS18601	Artificial Intelligence	PC	4	3	1	0	4	NIL	F
2.	CS18602	Compiler Design	PC	4	3	1	0	4	NIL	F
3.	CS18603	Cryptography and Network Security	PC	4	3	1	0	4	CS18403	F
4.	GE18054	Professional Ethics (Common to CE, CS, EE, EC, IT and MR)	PC	3	3	0	0	3	NIL	M
5.	CS18604	Machine Learning Techniques	PC	4	3	1	0	4	NIL	F
6.	****	Professional Elective II	PE	3	3	0	0	3	NIL	M
PRACTICAL										
7.	CS18611	Compiler Design Laboratory	PC	4	0	0	4	2	NIL	F
8.	CS18612	Artificial Intelligence and Machine Learning Laboratory	PC	4	0	0	4	2	NIL	F
TOTAL				30	18	4	8	26	-	-

SEMESTER VII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	CS18701	Cloud Computing and Virtualization Techniques	PC	3	3	0	0	3	NIL	F
2.	CS18702	Cyber Security and Ethical Hacking	PC	4	3	1	0	4	NIL	F
3.	****	Professional Elective III	PE	3	3	0	0	3	NIL	M
4.	****	Professional Elective IV	PE	3	3	0	0	3	NIL	M
5.	****	Open Elective I	OE	3	3	0	0	3	NIL	M
PRACTICAL										
6.	CS18711	Mini Project	EEC	6	0	0	6	3	NIL	F
7.	CS18712	Cloud Computing and Virtualization Techniques Laboratory	PC	4	0	0	4	2	NIL	F
8.	CS18713	Security Practices Laboratory	PC	4	0	0	4	2	NIL	F
TOTAL				30	15	1	14	23	-	-

(Recommended by BoS - Meeting held on 19.02.2019)

SEMESTER VIII

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY	CONTACT PERIODS	L	T	P	C	Prerequisites	Fixed/Movable
THEORY										
1.	****	Professional Elective V	PE	3	3	0	0	3	NIL	M
2.	****	Professional Elective VI	PE	3	3	0	0	3	NIL	M
3.	****	Open Elective II	OE	3	3	0	0	3	NIL	M
PRACTICAL										
3.	CS18811	Project Work	EEC	24	0	0	24	12	NIL	F
TOTAL				33	9	0	24	21	-	-

(Recommended by BoS - Meeting held on 19.02.2019)

List of Electives

Professional Elective I, III & IV (Offered in ODD Semester)		
SL. No.	COURSE CODE	COURSE TITLE
1.	CS18001	Bioinformatics Techniques
2.	CS18003	Data Analytics
3.	CS18005	Graph Theory and Its Application
4.	CS18007	Information Retrieval Techniques
5.	CS18009	Internet of Things and Its Applications
6.	GE18051	Intellectual Property Rights (Common to all branches)
7.	CS18011	Mobile Application Development
8.	CS18013	Multimedia Systems
9.	CS18015	Natural Language Processing
10.	IT18002	Principles of Digital Image Processing (Common to IT and CS)
11.	CS18017	Resource Management Techniques
12.	CS18019	Social Network Engineering
13.	CS18021	Software Architecture
14.	CS18023	Software Planning and Project Management
15.	CS18025	Software Requirement Engineering
16.	IT18004	Software Testing and Quality Assurance (Common to IT and CS)
17.	GE18052	Total Quality Management (Common to ME, AE, CS, EC and MR)
18.	CS18027	Web Programming

Professional Elective II, V & VI (Offered in Even Semester)		
SL. No.	COURSE CODE	COURSE TITLE
1.	CS18002	Advanced User Interface Technologies (Common to CS and IT)
2.	CS18004	Agile Methodologies (Common to CS and IT)
3.	CS18006	Block Chain Technology
4.	CS18008	Business Intelligence
5.	CS18010	Computer Graphics
6.	CS18012	Mobile Adhoc Networks
7.	CS18014	Object Oriented Analysis and Design
8.	CS18016	Parallel and Distributed Computing
9.	CS18018	Real Time Operating Systems
10.	CS18020	Service Oriented Architecture and Web Services
11.	CS18022	Software Defined Networks
12.	CS18024	Unix Internals

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Professional Electives (Can be Chosen whenever offered)		
SL. No.	COURSE CODE	COURSE TITLE
1.	SE18001	Mathematics for AI & ML (Common to all branches except MR)
2.	SE18002	Corporate Finance (Common to all branches except MR)
3.	SE18003	Financial Statement Analysis (Common to all branches except MR)
4.	SE18004	Managerial Economics (Common to all branches except MR)
5.	SE18005	Market Research (Common to all branches except MR)
6.	SE18006	Production Management (Common to all branches except MR)
7.	SE18007	Project Management (Common to all branches except MR)
8.	SE18008	Introduction to Securities Market (Common to all branches except MR)
9.	SE18009	Supply Chain Management (Common to all branches except MR)

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OPEN ELECTIVES

OPEN ELECTIVES OFFERED IN ODD SEMESTER*

SL. No.	COURSE CODE	COURSE TITLE	OFFERING DEPARTMENT
1	OE18101	Fundamentals of Automobile Engineering	AUT
2	OE18103	Fundamentals of Automotive Air Conditioning	AUT
3	OE18201	Introduction to Biofuels and Bioenergy	BIO
4	OE18203	Basics of Environmental Biotechnology	BIO
5	OE18205	Introduction to Bioinformatics and Computational Biology	BIO
6	OE18207	Basics of Nanobiotechnology	BIO
7	OE18209	Introduction to Biomaterials	BIO
8	OE18301	Waste to Energy	CHE
9	OE18303	Industrial Safety	CHE
10	OE18305	Composite Materials	CHE
11	OE18307	Industrial Waste Water Treatment	CHE
12	OE18309	Fuel Cell Technology	CHE
13	OE18401	Basic Civil Engineering	CVE
14	OE18403	Fundamentals of Remote Sensing and GIS	CVE
15	OE18405	Electronic Waste Management	CVE
16	OE18407	Basics and Principles of Green Building Design	CVE
17	OE18409	Principles of Vastu in Interior Design	CVE
18	OE18501	Basic Operating Systems	CSE
19	OE18503	Basics on Cyber Security and Ethical Hacking	CSE
20	OE18505	Introduction to Internet of Things	CSE
21	OE18507	Multimedia and Animation Techniques	CSE
22	OE18509	Python Programming	CSE
23	OE18601	Electrical Machines and Applications	EEE
24	OE18603	Control System Engineering	EEE
25	OE18605	Micro and Smart Grid	EEE
26	OE18607	Electric Vehicle Technology	EEE
27	OE18609	Nanotechnology	EEE
28	OE18701	Autotronics	ECE
29	OE18703	Sensing Techniques	ECE
30	OE18705	System Design using Microcontrollers	ECE

31	OE18801	IT Essentials for Engineers	INT
32	OE18803	Internet of Everything	INT
33	OE18805	Foundation on Mobile App Development	INT
34	OE18901	Elements of Marine Engineering	MAR
35	OE18903	Marine Propulsion	MAR
36	OE18001	Basics of Mechanical Engineering	MEC
37	OE18003	Elements of Mechanical Components	MEC
38	OE18005	Industrial Engineering and Management	MEC
39	OE18007	Basics of Energy Resources	MEC
40	OH18001	Content Writing	HSS
41	OH18003	Critical Thinking	HSS
42	OH18005	Urban / Rural Development and Constitutional Provisions	HSS
43	OC18001	Nanochemistry	ACH
44	OC18003	Polymer Chemistry	ACH
45	OM18001	Statistical Methods for Engineers	APM
46	OM18003	Linear Programming	APM

OPEN ELECTIVES OFFERED IN EVEN SEMESTER*

SL. No.	COURSE CODE	COURSE TITLE	OFFERING DEPARTMENT
1	OE18102	Automotive Fault Diagnostics	AUT
2	OE18104	Fundamentals of Automotive Pollution and Control Methods	AUT
3	OE18106	Fundamentals of Automotive Safety and Maintenance	AUT
4	OE18202	Introduction to Food Manufacturing	BIO
5	OE18204	Testing of Biological Materials	BIO
6	OE18206	Introduction to Tissue Engineering	BIO
7	OE18208	Introduction to Cancer Biology	BIO
8	OE18210	Basic Bio-pharmaceutical Technology	BIO
9	OE18302	Industrial Pollution Prevention	CHE
10	OE18304	Solid Waste Management	CHE
11	OE18306	Plant Utilities	CHE
12	OE18308	Green Energy	CHE
13	OE18310	Energy Management	CHE
14	OE18402	Integrated Solid Waste Management	CVE

15	OE18404	Life Cycle Assessment	CVE
16	OE18406	Air Pollution and Control Engineering	CVE
17	OE18408	Water Pollution and its Management	CVE
18	OE18502	Artificial Intelligence Basics	CSE
19	OE18504	Database Systems and Applications	CSE
20	OE18506	Internet Programming	CSE
21	OE18508	Introduction to Cloud and Big Data Analytics	CSE
22	OE18510	Introduction to Data Structures	CSE
23	OE18602	Industrial Automation	EEE
24	OE18604	MEMS and Nano Devices	EEE
25	OE18606	Renewable Energy Systems	EEE
26	OE18608	Indian Power Grid	EEE
27	OE18610	Power Converters	EEE
28	OE18702	Consumer Electronics	ECE
29	OE18704	Introduction to Communication Systems	ECE
30	OE18706	Robotics Systems	ECE
31	OE18802	Embedded and Real Time Systems	INT
32	OE18804	Ethical Hacking and IT Security	INT
33	OE18806	User Interface Design	INT
34	OE18808	AI for Android	INT
35	OE18902	Introduction to Marine Diesel Engines and Machineries	MAR
36	OE18904	Marine Vehicles	MAR
37	OE18002	Elements of Automation	MEC
38	OE18004	Quality concepts and tools	MEC
39	OE18006	Refrigeration and Air conditioning Systems	MEC
40	OE18008	Thermal Management of Electronics Devices	MEC
41	OP18002	Sensors and Transducers	APH
42	OP18004	Essential Properties for Selection of Materials	APH
43	OP18006	Opto Electronics and Applications	APH
44	OP18008	Basics of Environmental Safety	APH
45	OH18002	Environmental Law, Policy and International Conventions	HSS
46	OH18004	Climate Change and Vulnerability Assessment	HSS
47	OH18006	Gender Sensitization and Social Impact	HSS

48	OC18002	Fuel Cell Chemistry	ACH
49	OC18004	Industrial Catalysis	ACH
50	OM18002	Linear Algebra for Engineers	APM
51	OM18004	Transform Techniques for Boundary Value Problems	APM

*Students can choose Open Electives offered only by other departments

Value Added Courses

S.NO.	COURSE CODE	COURSE TITLE	CONTACT PERIODS	L	T	P	C
1.	VD18501	Python Programming for Beginners	2	2	0	0	2
2.	VD18502	Deep learning Techniques	2	2	0	0	2
3.	VD18503	Digital Forensics	2	2	0	0	2
4.	VC18001	Communicative German (Common to All Branches, Except MR)	2	2	0	0	2
5.	VC18002	Communicative Japanese (Common to All Branches, Except MR)	2	2	0	0	2
6.	VC18003	Communicative Hindi (Common to All Branches, Except MR)	2	2	0	0	2
7.	VC18004	Design Thinking and Prototyping Laboratory (Common to All Branches Except MR) (Common to All branches, Except MR)	2	2	0	0	2
8.	VC18005	Basics of Entrepreneurship Development (Common to All Branches)	2	2	0	0	2
9.	VC18006	Advance in Entrepreneurship Development	3	1	0	2	2

Mandatory Courses

S.NO.	COURSE CODE	COURSE TITLE	CATEGORY
1.	MC18001	Indian Constitution and Society (Common to All Branches except MR)	MC

Internship Training

S.NO.	COURSE TITLE	CATEGORY
1.	Internship*	EEC

- This course must be done in an Industry approved by the Department during vacation from semester 3 to semester 6 for a period not less than 2 weeks.

(Recommended by BoS - Meeting held on 19.02.2019)

Summary

Category	Credits per Semester								
	1	2	3	4	5	6	7	8	Total
Humanities and Social Sciences (HS), including Management	3	3							6
Basic Sciences (BS) including Mathematics, Physics, Chemistry, Biology	11	11	4	4					30
Engineering Sciences (ES), including Materials, Workshop, Drawing, Basics of, Electrical/Electronics/Mechanical/ Computer Engineering, Instrumentation	9	3							12
Professional Subjects-Core (PC), relevant to the chosen specialization/branch; (May be split into Hard (no choice) and Soft (with choice), if required)		6	16.5	19.5	20	23	11		96
Professional Subjects – Electives (PE), relevant to the chosen specialization/ branch					3	3	6	6	18
Open subjects – Electives from other technical and /or emerging subjects (OE)							3	3	6
Project Work, Seminar and/or Internship in Industry or Elsewhere (EEC)					2		3	12	17
Total Credits	23	23	20.5	23.5	25	26	23	21	185