

Bachelor in Computer Science **(NEP Aligned)**

Syllabus As Per NEP 2020



SRI SRI
UNIVERSITY
LEARN • LEAD • SERVE

Faculty of Engineering & Technology (FET)
Sri Sri University

Table of Content

Sl. No	Content	From	To
1	Semester – I	3	3
2	Semester – II	4	4
3	Semester – III	5	5
4	Semester – IV	6	6
5	Semester – V	7	7
6	Semester – VI	8	8
7	Semester – VII	9	9
8	Semester – VIII	10	10
9	Major Courses.	11	12
10	Minor Courses (Relevant Discipline Baskets)	12	12
11	General Proficiency	12	12
12	Minor Courses (General Discipline Baskets)	13	13
13	Honours Courses	13	13
14	Skill Enhancement Courses	13	15
15	Multi-disciplinary Courses	15	15
16	Ability Enhancement Courses	15	15
17	Value-Added Courses	16	16
18	General Course Structure of B. Sc(Computer Science)	16	16

1st Year					
Course code	Semester – I	L	T	P	Cr
Major Courses					
TBC101	Programming in ‘C’	3	0	0	3
TBC102	Programming in ‘C’ Lab	0	0	1	1
TBC103	Database Management System	3	0	0	3
TBC104	Database Management System Lab	0	0	1	1
Minor Courses					
TMG101	Entrepreneurship Development	4	0	0	4
Multidisciplinary Courses					
	Foundational Mathematics	3	0	0	3
Ability enhancement course					
TAE101	IT Primer	2	0	0	2
TAE102	IT Primer	0	0	1	1
Skill enhancement course					
TSE113	Ex. - CISCO Networking (Foundation)	2	0	0	2
TSE114	CISCO Networking (Foundation) Lab	0	0	1	1
Value added course					
	Happiness Connect	0	0	2	2
TVA101	Sustainable Development Goals	0	0	1	1
General proficiency					
TGP101	General proficiency - I General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	1	1
Optional					
TOP101	Emerging IT Courses (Physical/ Hybrid) (AIML/Data Science/ Cyber Security)	3	0	0	3

Total Credit in 1st Semester – 25

B.Sc. Computer Science					
1st Year					
Course code	Semester – II	L	T	P	Cr
Major Courses					
TCS104	Data Structure using 'C'	3	0	0	3
TCS105	Data Structure using 'C' Lab	0	0	1	1
TBC105	Core Java	3	0	0	3
TBC106	Core Java Lab	0	0	1	1
TBC107	Web Development Technologies	3	0	0	3
TBC108	Web Development Technologies Lab	0	0	1	1
Minor Courses					
TMG102	Design Thinking	3	0	0	3
TMG103	Design Thinking Lab	0	0	1	1
Multidisciplinary Courses					
TCS211	Discrete Mathematics	3	0	0	3
Ability enhancement course					
TAE103	Professional Communication	2	0	0	2
TAE104	Professional Communication Lab	0	0	1	1
Skill enhancement course					
TSE115	Ex. - CISCO Networking (Advanced)	2	0	0	2
TSE116	CISCO Networking (Advanced) Lab	0	0	1	1
Value added course					
	Green Governance	0	0	2	2
General proficiency					
TGP102	General proficiency - II General proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	0	1
Optional					
TOP102	Emerging IT Courses (Physical/ Hybrid) (AIML/Data Science/ Cyber Security)	3	0	0	3

Total Credit in 2nd Semester - 28

B.Sc. Computer Science					
2nd Year					
Course code	Semester – III	L	T	P	Cr
Major Courses					
TCS209	Operating System	3	0	0	3
TCS210	Operating System Lab	0	0	1	1
TBC201	Computer System Architecture	3	0	0	3
TBC202	Computer System Architecture Lab	0	0	1	1
TBC203	Problem Solving Using Python	3	0	0	3
TBC204	Problem Solving Using Python Lab	0	0	1	1
Minor Courses					
TMR201	Computer Network & Data Communication	3	0	0	3
TMR202	Computer Network & Data Communication Lab	0	0	1	1
Multidisciplinary Courses					
	Probability & Statistics	3	0	0	3
Ability enhancement course					
TAE201	Soft Skill Development	0	0	2	2
Skill enhancement course					
TSE117	Skill Courses/ Apprenticeship – III/ Internship – III/ OJT - III	0	0	0	3
Value added course					
TVA201	Disaster Management	0	0	2	2
General Proficiency					
TGP201	<u>General proficiency - III</u> General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	0	1

Total Credit in 3rd Semester – 27

B.Sc. Computer Science					
2nd Year					
Course code	Semester – IV	L	T	P	Cr
Major Courses					
TCS205	Analysis & designing of algorithm	3	0	0	3
TCS206	Analysis & designing of algorithm Lab.	0	0	1	1
TBC205	Formal Languages & Automata Theory	3	0	0	3
TBC206	Formal Languages & Automata Theory Lab.	0	0	1	1
Minor Courses					
TMR203	Data Warehousing & Data Mining	3	0	0	3
TMR204	Data Warehousing & Data Mining Lab	0	0	1	1
Ability enhancement course					
TAE106	Introduction To AI	2	0	1	3
Skill enhancement course					
TSE118	Skill Courses/ Apprenticeship – IV/ Internship – IV/ OJT - IV	0	0	0	3
Value added course					
TVA202	Constitution of India	0	0	2	2
General Proficiency					
TGP202	<u>General proficiency - IV</u> General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	1	1

Total Credit in 4th Semester – 21

B.Sc. Computer Science					
3rd Year					
Course code	Semester – V	L	T	P	Cr
Major Courses					
TBC301	Cloud Computing	3	0	0	3
TBC302	Cloud Computing Lab	0	0	1	1
TBC303	Internet of Things	3	0	0	3
TBC304	Internet of Things Lab	0	0	1	1
TAI201	Machine Learning	3	0	0	3
TAI202	Machine Learning Lab	0	0	1	1
Minor Courses					
TMR301	Software Project Management	3	0	0	3
TMR302	Software Project Management Lab	0	0	1	1
Internship – I/Skill enhancement course					
TSE119	Skill Courses/ Apprenticeship – V/ Internship – V/ OJT - V	0	0	0	3
Value added course					
	Vedic Mathematics	0	0	1	1
General proficiency					
TGP301	<u>General proficiency - V</u> General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	0	1

Total Credit in 5th Semester – 21

B.Sc. Computer Science					
3rd Year					
Course code	Semester – VI	L	T	P	Cr
Major Courses					
TBC305	Android Application Development	3	0	0	3
TBC306	Android Application Development Lab	0	0	1	1
TBC307	ASP .Net	3	0	0	3
TBC308	ASP .Net Lab	0	0	1	1
Minor Courses					
TMG301	Industry & Market Research	4	0	0	4
Ability enhancement course					
TAE301	Employability Planning & Preparation – I	1	0	1	2
Project / Dissertation					
TSE301	Major project (Implementation & Presentation)	0	0	6	6
Skill enhancement course					
TSE120	Skill Courses/ Apprenticeship – VI/ Internship – VI/ OJT - VI	0	0	0	3
Value added course					
TVA301	Universal Human Values	0	0	1	1
General proficiency					
TGP302	<u>General proficiency - VI</u> General proficiency General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	0	1

Total Credit in 6th Semester – 25

B.Sc. Computer Science					
4th Year					
Course code	Semester – VII	L	T	P	Cr
Major Courses (Hons)					
TBC401	Soft Computing	3	0	0	3
TBC402	Soft Computing Lab	0	0	1	1
TBC403	Computer Graphics	3	0	0	3
TBC404	Computer Graphics Lab	0	0	1	1
TBC405	Introduction to Data Analytics	3	0	0	3
TBC406	Introduction to Data Analytics Lab	0	0	1	1
Minor Courses					
TMR401	Cyber Security Foundation	3	0	0	3
TMR402	Cyber Security Foundation Lab	0	0	1	1
Ability enhancement course					
	Research Methodology - I	2	0	0	2
Skill enhancement course/ Internship					
TSE121	Skill Courses/ Apprenticeship – VI/ Internship – VI/ OJT - VI	0	0	0	3
Value added course					
	Indian Knowledge System	0	0	1	1
General Proficiency					
TGP401	<u>General Proficiency - VII</u> General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	1	1

Total Credit in 7th Semester – 23

B.Sc. Computer Science					
4th Year					
Course code	Semester – VIII	L	T	P	Cr
Major Courses					
TBC407	Business Process Reengineering	4	0	0	4
TBC408	Introduction to Expert Systems	3	0	0	3
TBC409	Introduction to Expert Systems Lab	0	0	1	1
Minor Courses					
TMG401	Enterprise Resource Planning (ERP) system	3	0	0	3
TMG402	Enterprise Resource Planning (ERP) system Lab	0	0	1	1
Research Project / Dissertation					
TSE401	Research project in relevant specialization (Only for HONS With Research))	0	0	12	12
General Proficiency					
TGP402	<u>General Proficiency - VIII</u> General proficiency General Proficiency shall be assessed based on the participation in Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Debate, Hackathon and so on.	0	0	1	1

Total Credit in 8th Semester - 25

Major Courses

Sl. No	Course Code	Core Course	L	T	P	Cr
1	TBC101	Programming in 'C'	3	0	0	3
2	TBC102	Programming in 'C' Lab	0	0	1	1
3	TBC103	Database Management System	3	0	0	3
4	TBC104	Database Management System Lab	0	0	1	1
5	TCS104	Data Structure using 'C'	3	0	0	3
6	TCS105	Data Structure using 'C' Lab	0	0	1	1
7	TBC105	Core Java	3	0	0	3
8	TBC106	Core Java Lab	0	0	1	1
9	TBC107	Web Development Technologies	3	0	0	3
10	TBC108	Web Development Technologies Lab	0	0	1	1
11	TCS209	Operating System	3	0	0	3
12	TCS210	Operating System Lab	0	0	1	1
13	TBC201	Computer System Architecture	3	0	0	3
14	TBC202	Computer System Architecture Lab	0	0	1	1
15	TBC203	Problem Solving Using Python	3	0	0	3
16	TBC204	Problem Solving Using Python Lab	0	0	1	1
17	TCS205	Analysis & designing of algorithm	3	0	0	3
18	TCS206	Analysis & designing of algorithm Lab.	0	0	1	1
19	TBC205	Formal Languages & Automata Theory	3	0	0	3
20	TBC206	Formal Languages & Automata Theory Lab.	0	0	1	1
21	TBC301	Cloud Computing	3	0	0	3
22	TBC302	Cloud Computing Lab	0	0	1	1
23	TBC303	Internet of Things	3	0	0	3
24	TBC304	Internet of Things Lab	0	0	1	1
25	TAI201	Machine Learning	3	0	0	3
26	TAI202	Machine Learning Lab	0	0	1	1
27	TBC305	Android Application Development	3	0	0	3
28	TBC306	Android Application Development Lab	0	0	1	1
29	TBC307	ASP .Net	3	0	0	3
30	TBC308	ASP .Net Lab	0	0	1	1
31	TBC401	Soft Computing	3	0	0	3
32	TBC402	Soft Computing Lab	0	0	1	1
33	TBC403	Computer Graphics	3	0	0	3
34	TBC404	Computer Graphics Lab	0	0	1	1
35	TBC405	Introduction to Data Analytics	3	0	0	3

36	TBC406	Introduction to Data Analytics Lab	0	0	1	1
37	TBC407	Business Process Reengineering	4	0	0	4
38	TBC408	Introduction to Expert Systems	3	0	0	3
39	TBC409	Introduction to Expert Systems Lab	0	0	1	1

Minor Courses (Relevant Discipline Baskets)

Sl. No	Course Code	Minor Course	L	T	P	Cr
1	TMR201	Computer Network & Data Communication	2	0	0	3
2	TMR202	Computer Network & Data Communication Lab	0	0	4	2
3	TMR203	Data Warehousing & Data Mining	2	0	0	3
4	TMR204	Data Warehousing & Data Mining Lab	0	0	4	2
5	TMR301	Software Project Management	2	0	0	3
6	TMR302	Software Project Management Lab	0	0	4	2
7	TMR401	Cyber Security Foundation	3	0	0	3
8	TMR402	Cyber Security Foundation Lab	0	0	1	1

General Proficiency

General Proficiency shall be assessed based on the participation in NCC, NSS, Conferences (Research paper Publication (Journal/ Conference)), Organizing events, Participation in Events (Conferences/Workshops/ Training/Webinar/Seminar), competitions (Inter University, State, National, International level) including Music, Debate, Sports, Hackathon and so on.

Sl. No	Course Code	Minor Courses	L	T	P	Cr
1	TGP101	General proficiency -I	0	0	0	1
2	TGP 102	General proficiency – II	0	0	0	1
3	TGP 201	General proficiency – III	0	0	0	1
4	TGP 202	General proficiency – IV	0	0	0	1
5	TGP 301	General proficiency – V	0	0	0	1
6	TGP 302	General proficiency – VI	0	0	0	1
7	TGP 401	General proficiency – VII	0	0	0	1
8	TGP 402	General proficiency - VIII	0	0	0	1

Minor Courses (General Discipline Baskets)

Sl. No	Course Code	Minor Courses	L	T	P	Cr
1	TMG101	Entrepreneurship Development	4	0	0	4
2	TMG102	Design Thinking	3	0	0	3
3	TMG103	Design Thinking Lab	0	0	1	1
4	TMG301	Industry & Market Research	4	0	0	4
5	TMG401	Enterprise Resource Planning (ERP) system	3	0	0	3
6	TMG402	Enterprise Resource Planning (ERP) system Lab	0	0	1	1

Honours Courses

Sl. No	Course Code	Honours Courses	L	T	P	Cr
1	TBC401	Soft Computing	3	0	0	3
2	TBC402	Soft Computing Lab	0	0	1	1
3	TBC403	Computer Graphics	3	0	0	3
4	TBC404	Computer Graphics Lab	0	0	1	1
5	TBC405	Introduction to Data Analytics	3	0	0	3
6	TBC406	Introduction to Data Analytics Lab	0	0	1	1

Skill Enhancement Courses

Sl. No	Course Code	Skill Courses	L	T	P	Cr
1	TSE101	Solar panel Technician level -I (Foundation)	2	0	0	2
2	TSE102	Solar panel Technician level -I Lab	0	0	2	1
3	TSE103	Solar panel Technician level – II (Advanced)	2	0	0	2
4	TSE104	Solar panel Technician level – II Lab	0	0	2	1
5	TSE105	Electronic Technician level -I (Foundation)	2	0	0	2
6	TSE106	Electronic Technician level -I Lab	0	0	2	1
7	TSE107	Electronic Technician level -II (Advanced)	2	0	0	2
8	TSE108	Electronic Technician level -II Lab	0	0	2	1
9	TSE109	Electrician level -I (Foundation)	2	0	0	2
10	TSE110	Electrician level -I Lab	0	0	2	1

11	TSE111	Electrician level -II (Advanced)	2	0	0	2
12	TSE112	Electrician level -II Lab	0	0	2	1
13	TSE113	CISCO Networking (Foundation)	2	0	0	2
14	TSE114	CISCO Networking Lab	0	0	2	1
15	TSE115	CISCO Networking (Advanced)	2	0	0	2
16	TSE116	CISCO Networking Lab	0	0	2	1
17	TSE117	Web Development & Management (Foundation)	2	0	0	2
18	TSE118	Web Development & Management Lab	0	0	2	1
19	TSE119	Web Development & Management (Advanced)	2	0	0	2
20	TSE120	Web Development & Management Lab	0	0	2	1
21	TSE121	Fortinet Network Security Expert Program (Foundation)	2	0	0	2
22	TSE122	Fortinet Network Security Expert Program Lab	0	0	2	1
23	TSE123	Fortinet Network Security Expert Program (Advanced)	2	0	0	2
24	TSE124	Fortinet Network Security Expert Program Lab	0	0	2	1
25	TSE125	Digital Marketing (Foundation)	2	0	0	2
26	TSE126	Digital Marketing Lab	0	0	2	1
27	TSE127	Digital Marketing (Advanced)	2	0	0	2
28	TSE128	Digital Marketing Lab	0	0	2	1
29	TSE129	Digital Embedded System (Foundation)	2	0	0	2
30	TSE130	Digital Embedded System Lab	0	0	2	1
31	TSE131	Digital Embedded System (Advanced)	2	0	0	2
32	TSE132	Digital Embedded System Lab	0	0	2	1
33	TSE133	Mobile Technology	2	0	0	2
34	TSE134	Mobile Technology Lab	0	0	2	1
35	TSE135	Software testing	2	0	0	2
36	TSE136	Software testing Lab	0	0	2	1

37	TSE137	Multimedia Technology	2	0	0	2
38	TSE138	Multimedia Technology Lab	0	0	2	1
39	TSE139	Free and open-source software	2	0	0	2
40	TSE140	Free and open-source software Lab	0	0	2	1
41	TSE301	Major project (Implementation & Presentation)	0	0	6	6
42	TSE401	Research Project / Dissertation	0	0	12	12

Multi-disciplinary Courses

Sl. No	Course Code	Multidisciplinary Courses	L	T	P	Cr
1		Foundational Mathematics	3	0	0	3
2	TCS211	Discrete Mathematics	3	0	0	3
3		Probability & Statistics	3	0	0	3

Ability Enhancement Courses

Sl. No.	Course Code	Ability Enhancement Courses	L	T	P	Cr
1	TAE101	IT Primer	2	0	0	2
2	TAE102	IT Primer	0	0	1	1
3	TAE103	Professional Communication	2	0	0	2
4	TAE104	Professional Communication Lab	0	0	1	1
5	TAE201	Soft Skill Development	0	0	2	2
6	TAE202	Introduction To AI	2	0	1	3
7	TAE301	Employability Planning & Preparation – I	1	0	1	2
8		Research Methodology - I	2	0	0	2

Value-Added Courses

Sl. No	Course Code	Value-added Courses	L	T	P	Cr
1		Happiness Connect	0	0	2	2
2	TVA101	Sustainable Development Goals	0	0	1	1
3		Green Governance	0	0	2	2
4	TVA202	Constitution of India	0	0	2	2
5	TVA201	Disaster Management	0	0	2	2
6		Vedic Mathematics	0	0	1	1
7	TVA301	Universal Human Values	0	0	1	1
8		Indian Knowledge System	0	0	1	1

General Course Structure of B. Sc(Computer Science)

Sl. No.	Category	Breakup of Credits
1	Major Courses	80
2	Minor Courses	32
3	Multi - disciplinary	9
4	Ability Enhancement Courses (AEC)	15
5	Internship/ Skill Enhancement Courses (SEC)	21
6	Value Added Courses common for all UG	12
7	General proficiency	8
8	Project / Dissertation	18
Total		195