Detailed Program Scheme

Bachelor of Technology (B.Tech.)

Computer Science Engineering (CSE)

&

CSE with Specialization in AI and ML

Semester I-VIII
(2025-2029)

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RNB GLOBAL UNIVERSITY

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Document Release Notice	
Program Scheme for all Semesters	
Release: Version 1.0	
Name of Program	Bachelor of Technology (Computer Science Engineering & CSE with Specialization in AI & ML)
Abbreviated Program Name	B.Tech. (CSE) & CSE with AI & ML
Updated on	May 2025
Approved By	BOS

OVERVIEW

RNB Global University follows Semester System. Accordingly, each academic year is divided into two semesters, **Odd (July-December) and Even (January-June).** Besides this, the university follows a system of continuous evaluation along with regular updating in course curricula and teaching pedagogy.

Course Scheme

Name of Program	Bachelor of Technology (Computer Science Engineering & CSE with Specialization in AI & ML)
Duration of Program	4 years
Number of Semester	8
Total Credits of Program	214

DETAILED CREDIT STRUCTURE

Year 1	Semester I	27 Credits
	Semester II	28 Credits
Year 2	Semester III	29 Credits
	Semester IV	28 Credits
Year 3	Semester V	31 Credits
	Semester VI	26 Credits
Year 4	Semester VII	25 Credits
	Semester VIII	20 Credits
Total Credits		214 Credits

Abbreviations:
DSC: Discipline Specific Course
DSE: Discipline Specific Electives
GE: General Electives
AEC: Ability Enhancement Course
SEC: Skill Enhancement Course
IAPC: Internship/Apprenticeship / Project/ Community Outreach
VAC: Value Addition Course
BSC: Basic Science Courses

Definitions

1. Courses of study– Courses of study indicate pursuance of study in a particular discipline. Every discipline shall offer three categories of courses of study, viz. Discipline Specific Core courses (DSCs), Discipline Specific Electives (DSEs) and Generic Electives (GEs).

a) Discipline Specific Core (DSC): Discipline Specific Core is a course of study, which should be pursued by a student as a mandatory requirement of his/her programme of study. DSCs shall be the core credit courses of that particular discipline which will be appropriately graded and arranged across the semesters of study, being undertaken by the student, with multiple exit options as per NEP 2020. The DSCs specified in the framework would be identified by the concerned Department as core courses to be taught in a Programme.

For example, for award of single discipline specific Honours degree, such as B.A. (Honours) History, B.Com. (Honours), B.Sc. (Honours) Physics and similar such programmes, DSCs shall be the core courses of History, Commerce and Physics, respectively.

However, to pursue Honours degree programme in a 'Field of Multidisciplinary courses of Study' (rather than a single discipline) such as B.Sc. (Honours) Life Sciences, B.A. (Honours) Social Sciences/ Humanities, the DSCs shall comprise of core credit courses of more than one discipline. For example, for B.Sc. (Honours) Life Sciences programme, a student shall study credit courses of three disciplines i.e., Botany, Zoology and Chemistry. DSC 1 may be of Discipline A1 (say, Botany), DSC 2 may be of Discipline B 1 (say, Zoology) and DSC 3 may be of Discipline C 1 (say, Chemistry). However, the fourth year of such honours degree programme shall be devoted to the study of only one discipline and hence the DSC courses in the VII and VIII semesters shall be of Discipline A/B/C and not a combination of these three disciplines. Please refer to framework given as Illustration –I.

b) Discipline Specific Elective (DSE): The Discipline Specific Electives (DSEs) shall be a pool of credit courses of that particular discipline (single discipline programme of study) or those disciplines (multidisciplinary programme of study), as the case may be, which a student chooses to study from his/her particular discipline(s). There shall be a pool of DSEs from which a student may choose a course of study. The DSEs specified in the framework would be identified by the concerned Department as elective courses to be taught in a Programme.

For example, to pursue B.Sc. (Honours) Physics, DSEs chosen should be from a pool of DSEs of Physics.

Similarly, to pursue B.Sc. (Honours) Life Sciences programme, the DSEs chosen should be a pool of courses of DSEs of Botany, Zoology and Chemistry, the core subjects for this programme of study.

However, to pursue Honours degree programme in a 'Field of Multidisciplinary courses of Study' (rather than a single discipline) such as B.Sc. (Honours) Life Sciences, B.A. (Honours) Social Sciences/ Humanities, in the fourth year of such honours degree programme in the VII and VIII semesters, the student shall be required to choose DSEs from any one of the Disciplines A/B/C and not a combination of these three disciplines. Please refer to framework given as Illustration - I.

c) Generic Elective (GE): Generic Electives shall be a pool of courses which is meant to provide multidisciplinary or interdisciplinary education to students. GEs shall consist of a pool of courses offered by various disciplines of study (excluding the GEs offered by the parent discipline), in groups of odd and even semesters, from which a student can choose. The GEs specified in the framework would be identified by the concerned Department as GEs to be taught in a Programme.

In case a student opts for DSEs beyond his/her discipline specific course(s) of study, such DSEs shall be treated as GEs for that student.

d) Ability Enhancement course (AEC), Skill Enhancement Course (SEC) & Value Addition Course (VAC) These three courses shall be a pool of courses offered by all the Departments in groups of odd and even semesters from which students can choose. A student who desires to make Academic Project/Entrepreneurship as Minor has to pick the appropriate combination of courses of GE, SEC, VAC, & Internship/Apprenticeship/Project/Community (IAPC) which shall be offered in the form of various modules as specified in the scheme of studies.

(i). AEC courses are the courses based upon the content that leads to knowledge enhancement through various areas of study. They are Language and Literature and Environmental Science and Sustainable

Development which will be mandatory for all disciplines.

(ii). SEC courses are skill-based courses in all disciplines and are aimed at providing hands-on-training, competencies, skills, etc. SEC courses may be chosen from a pool of courses designed to provide skill-based instruction.

(iii). VAC courses are value based courses which are meant to inculcate ethics, culture, Indian Knowledge systems, constitutional values, soft skills, sports education and such similar values to students which will help in all round development of students.

e) Basic Science Courses(BSC): These include a range of basic science courses that provide students with a strong foundation in fundamental scientific principles. These courses are designed to equip students with essential knowledge and skills that are necessary for understanding advanced engineering concepts and for solving real-world problems. Here are some common basic science courses offered in B.Tech.

programs:

i. **Physics:** Physics courses cover topics such as classical mechanics, electro magnetism, thermodynamics, and quantum mechanics. These courses help students understand the fundamental principles governing the behavior of matter and energy.

ii. **Chemistry:** Chemistry courses introduce students to the structure, properties, and reactions of various chemical substances. Topics covered may include organic chemistry, inorganic chemistry, physical chemistry, and analytical chemistry.

iii. **Mathematics:** Mathematics courses form the backbone of engineering education. Topics typically covered include calculus, differential equations, linear algebra, probability theory, and numerical methods. These mathematical tools are essential for analyzing and solving engineering problems.

iv. **Biology:** Some B.Tech. programs may include basic biology courses to provide students with an understanding of living organisms and their biological processes. Topics covered may include cell biology, genetics, evolution, and ecology.

These basic science courses are typically spread across the first two years of the B.Tech program, after which students delve into more specialized courses related to their chosen engineering discipline. The knowledge gained from these basic science courses forms the basis for advanced engineering coursework and prepares students for careers in various technical field.

PROGRAM OBJECTIVE

1. Graduate will establish himself/herself as effective professionals by solving real world problems using investigative and analytical skills along with the knowledge acquired in the field of Computer Science and Engineering.
2. Graduate will demonstrate his/her ability to adapt to rapidly changing environment in advanced areas of Computer Science and scale new height in their profession through lifelong learning.

3. Graduate will prove his/her ability to work and communicate effectively as a team member and /or leader to complete the task with minimal resources, meeting deadlines.
4. Graduate will embrace professional code of ethics in the profession while deliberately being part of projects which contributes to the society at large without disturbing the ecological balance.
5. Graduate will demonstrate the critical thinking and communication skills required in a technical environment.

DURATION OF THE PROGRAM/MAXIMUM DURATION

The B.Tech Program shall be of four years with eight semesters. A student will be required to complete the program within minimum 4 years and maximum a duration of 6 years from the date of first registration in the first Semester.

The student shall be required to undergo 5-6 weeks Summer Internship at the end of the Second year (4th Semester) & submits its report in the 5th Semester..

An academic year consists two semester, Odd Semester (July-Dec) and Even Semester (Jan-June). Duration of Each semester can increase or decrease. Generally each semester has 15-18 weeks of academic works.

The examination for the Ist, IIIrd, and Vth, VIIth semesters shall ordinarily be held in the month of November/December and of the IInd, IVth ,VIth and VIIIth semesters in the month of April/May or on such dates as may be fixed by the University.

REGISTRATION AT THE START OF EVERY SEMESTER

Every semester, students admitted to a program should register him/her for the next Semester. The student must also register for the elective courses, if any, (both discipline specific and open electives) that he/she wishes to take in that particular semester (especially in the final year/last 2 semesters).

PROMOTION FROM 1ST YEAR TO 2ND YEAR

A student is eligible for promotion to next year, if he/she meets the below mentioned minimum CGPA Criteria (by combining odd and even semester).

- For promotion from 1st Year to 2nd year , Minimum CGPA of 4.0
- For promotion from 2nd Year to 3rd year , Minimum CGPA of 4.5
- For promotion from 3rd Year to 4th year , Minimum CGPA of 4.5

Meaning: If for a Student, if CGPA is 4.0**(Minimum 40% marks are required to get promoted)** or more than 4.0 in 1st year having any number of subject backlog/fail, he/she shall be promoted to next year. That it is his/her choice to clear his/her backlog is summer

semester or with semester end examination as per ODD backlog with ODD semester and EVEN Backlog in EVEN Semester.

If student CGPA is less than 4.0, having any number of backlog in the 1styear and CGPA is less than 4.5 in 2ndyear, he/she must be appear in summer semester to clear backlog papers.

For promotion to 3rd Year, a student must have to clear all his/her paper of 1styear. Student cannot carry internal backlog to next year, he/she must clear his/her internal backlog before commencement of next year session.

TEACHING PEDAGOGY

At RNB Global University the teaching pedagogy includes

- Teaching on white board,
- Explanation of scientific facts using power point presentation,
- Webinars,
- Seminars,
- Class room assignments,
- Home assignments,
- Quiz,
- Guest lectures,
- Activities

The University has a large library which includes thousands of books, along with digital library support through which students as well as faculties can approach national and international books and research journals so as to be updated with latest technologies and emerging scientific trends.

In the networking world of today, communication skills are becoming very important. A manager's main role is to communicate his/her vision and strategy to others and get them to work with him/her towards that vision. RNBGU places special importance on the communication and interpersonal skills of students by imparting subjects like 'Ability & Skill Enhancement'.

CONTINUOUS ASSESSMENT

Continuous assessment means assessing aspects of students' knowledge and understanding throughout their course as opposed to a final examination. Continuous assessment looks at the student's overall capabilities in the form of regular assignments. It provides a more accurate and complete picture of the student's level and their understanding of what they have learned. Each assignment has original content based on a particular module or subject area and is evaluated by an expert coach. This allows the student to constantly and

consistently demonstrate their level of knowledge which cannot be accomplished with a final examination alone. The continuous assessment of a student is accomplished by

- Regularity of student in classroom
- Class room assignment
- Home assignment
- Projects
- Experiments performed in the laboratories
- Maintenance of practical record book
- Presentations on course topics
- Overall behaviour towards classmates and faculty
- Participation in extracurricular activities

Students can refer to the semester/year wise "Program Assignment chart" to get a better idea on the format/style & number of assignments they need to take in a particular semester/year. The assignments are designed in such a way that helps in the holistic growth of the students along with creating confidence & bettering the communication skills.

ASE- ABILITY AND SKILL ENHANCEMENT

Ability and Skill Enhancement (ASE) is the umbrella under which various spikes like training modules on communication skills, business etiquettes, technical terminology, vertical study,

understanding requirements of various specializations and many such topics are taught which render in helping the students prepare for the Global Entrant. ASE has been conceptualized with a view to explore the dynamics and techniques of effective interpersonal communication and to reinforce confidence in students by concentrating on what works about the individual. We believe that students need to not only develop academically, but develop the ability to survive in the modern world.

Aim of ASE is:
1. To convert the conceptual understanding of communication into everyday practice and to train students to apply concepts/ideas in their own experience.
2. To create a learner-language interface enabling students to exercise control over language use.
3. To exercise control over language use and sensitize students to the nuances of the four basic communication skills – Listening, Speaking, Reading and Writing.
4. To give them the skill sets that would help them grow professionally.

Along with imparting education and academic proficiency to students, we prepare them for situations beyond academics also. Inclusion of co-curricular and extracurricular activities under ASE is facilitating a comprehensive development of students. ASE focuses on body language, communication interpersonal and presentation skills by teaching them the art of developing, creating and executing their presentation with a professional approach and attitude.

ASE Modules I To VIII are specifically designed so as to gradually increase the learning approach of the student, helping students train their mind keeping themselves in the realistic world. It enables a student to develop key professional qualities.

ASE helps in achieving the University's mission to promote 'True Learning' and discourage 'Rot Learning'. Use of tutorials, assignments, debates, quizzes, presentations, case studies, projects, practical test, viva voce and many more modern tools promotes the learning quotient among the students.

This is one of the exclusive features of RNBGU's skill enhancement efforts.

WORKSHOPS & SEMINARS

The students attended workshop and seminar on their respective field or subject will gain knowledge and develop new ideas in their fields. They will improve their skills in practical and also in experimental analysis. It is also helpful for the students to improve in their communication skills as well as in personality development. They will be able to learn about the basic features of Machines and Equipment by doing hands on practice to their related software.

Seminars offer students the opportunity to interact with top industry leaders, experienced business managers, entrepreneurs, venture capitalists, and small-business owners. Designed

to introduce students to different aspects of business and industry, the series also includes information on career opportunity and development. A post-seminar interaction allows students to talk one-on-one with speakers and network with their peers.

Workshops allow students to further develop marketable business skills in an intensive, interactive environment. Topics are selected through input from industry, program administrators, and students.

This is one of the key features of RNBGU's learning pedagogy.

SUMMER INTERNSHIP

- Internship is the best option to develop skills and experience in particular field which is dependent on student choice or company according. Basically, the internship is a first stage to learn the technical language (Java, Android, PHP, Web designing, .Net, SEO) which is beneficial for student.
- Internships are key to building experience as a student or recent graduate. Employers are much more likely to hire someone with internships and work experience rather than someone with a generic resume, lacking experience.

Some specific reasons to include internships in B.Tech, is follow: Real world experience,

Networking, Resume Builder, Time Management, and Career Foundation.

Internships are taken after the end of the 4th semester and 7th Semester for a period of 4-5 weeks. It carries 6 credits & the student needs to submit his/her Summer Internship Report in the 5th semester and 7th Semester. For the ease of students understanding, summer internship is evaluated for a total of 150 marks for Weekly Reports, Project Report, and Presentation & Viva Voce & later converted into grade & grade points as per the University Examination Policy.

Complete document/guidelines are available for the help/assistance of the students for SIP. **Students can refer to the B.Tech Summer Internship & Project Instructions & Assistance Document**" to get a better idea on the Formats, Style, Project reports, Marks breakup & scoring criteria, etc ;enabling students a better perspective &understanding on benefiting the maximum from such dedicated & sincere efforts by RNB Global University for organizing such Summer Internship program for its students.

The complete SIP reporting & evaluation pattern is again a very unique &well-structured industry academia learning efforts of RNBGU.

SEMESTER WISE COURSE DETAILS

Semester –I

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14100	DSC-1(a)	Introduction to Programming with C	3	0	0	3
2.	CSEC14101	DSC-1(b)	Programming with C Lab	0	0	2	1
3.	CSEC14102	DSC-2(a)	Electronics and Electrical Technology	3	1	0	4
4.	CSEC14103	DSC-2(b)	Electronics and Electrical Technology Lab	0	0	2	1
5.	CSEC14104	DSC-3(a)	Manufacturing Processes	1	0	0	1
6.	CSEC14105	DSC-3(b)	Manufacturing Process/WorkshopLab	0	0	2	1
7.	BSCC15100	BSC-1	Applied Mathematics- I	3	1	0	4
8.	BSCC16100	BSC -2(a)	Applied Physics-I	3	1	0	4
9.	BSCC16101	BSC -2(b)	Applied Physics-I Lab	0	0	2	1
10.	SEC077001	SEC-1	Ability & Skill Enhancement – I	2	0	0	2
11.	GEC066001	GEC-1	Business Communication	3	1	0	4
12.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/ NCC/ NSS	-	-	-	1
			Total	**18**	**4**	**8**	**27**

Semester –II

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14150	DSC-4(a)	Engineering Graphics	3	0	0	3
2.	CSEC14151	DSC-4(b)	Engineering Graphics lab	0	0	2	1
3.	CSEC14152	DSC-5	Basic Mechanical Engineering	3	0	0	3
4.	BSCC15150	BSC -3	Applied Mathematics-II	3	1	0	4
5.	BSCC16150	BSC -4(a)	Applied Physics-II	3	0	0	3
6.	BSCC16151	BSC -4(b)	Applied Physics Lab-II	0	0	2	1
7.	BSCC13150	BSC-5(a)	Applied Chemistry	3	1	0	4
8.	BSCC13151	BSC-5(a)	Applied Chemistry Lab	0	0	4	2
9.	AECE55000	AEC-1	Environmental Studies	3	1	0	4
10.	SEC077002	SEC-2	Ability & Skill Enhancement - II	2	0	0	2
11.	WHNN99000		Workshops & Seminars/ Human Values & Social Service/ NCC/ NSS	-	-	-	1
			Total	**20**	**3**	**8**	**28**

Semester –III

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14200	DSC-6	Computer System Architecture	3	0	0	3
2.	CSEC14201	DSC-7(a)	Data Structures	3	0	0	3
3.	CSEC14202	DSC-7(b)	Data Structures Lab	0	0	2	1
4.	CSEC14203	DSC-8(a)	Object Oriented Programming with C/C++	3	1	0	4
5.	CSEC14204	DSC-8(b)	Object Oriented Programming with C/C++Lab	0	0	2	1
6.	CSEC14205	DSC-9(a)	Operating Systems	3	0	0	3
7.	CSEC14206	DSC-9(b)	Operating Systems Lab	0	0	2	1
8.	CSEC14207	DSC-10(a)	Digital Electronic Circuits	3	0	0	3
9.	CSEC14208	DSC-10(b)	Digital Electronic Circuits Lab	0	0	2	1
10.	BSCC15200	BSC -6	Applied Mathematics-III	3	1	0	4
11.	VAC088028	VAC-1	Human Values, Business & Managerial Ethics	2	0	0	2
12.	SEC077003	SEC-3	Ability and Skill Enhancement -III	2	0	0	2
13.	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
			Total	**22**	**2**	**8**	**29**

Semester –IV

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14250	DSC11	Optimization Techniques	3	0	0	3
2.	CSEC14251	DSC-12	Advanced Numerical Techniques Computation Lab (ANTC)	0	0	4	2
3.	CSEC14252	DSC-13	Introduction to Machine Learning	3	0	0	3
4.	CSEC14253	DSC-14	Software Engineering	3	0	0	3
5.	CSEC14254	DSC-15(a)	Computer Networks	3	0	0	3
6.	CSEC14255	DSC-15(b)	Computer Networks Lab	0	0	2	1
7.	CSEC14256	DSC-16(a)	Python	3	0	0	3
8.	CSEC14257	DSC-16(b)	Python Lab	0	0	2	1
9.	CSEC14258	DSC-17(a)	Web Technologies	3	0	0	3
10.	CSEC14259	DSC-17(b)	Web Technologies Lab	0	0	2	1
11.	VAC088029	VAC-2	Basics of Organizational Behavior	2	0	0	2
12.	SEC077004	SEC-4	Ability and Skill Enhancement -IV	2	0	0	2
13.	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
			Total	**22**	**0**	**10**	**28**

Semester – V

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14300	DSC-18(a)	Analysis and Design of Algorithm	3	0	0	3
2.	CSEC14301	DSC-18(b)	Analysis and Design of Algorithm Lab	0	0	2	1
3.	CSEC14302	DSC-19(a)	Database Management Systems with MySQL	3	0	0	3
4.	CSEC14303	DSC-19(b)	Database Management Systems with MySQL Lab	0	0	2	1
5.	CSEC14304	DSC-20(a)	Computer Graphics	3	0	0	3
6.	CSEC14305	DSC-20(b)	Computer Graphics Lab	0	0	2	1
7.	CSEC14306	DSC-21(a)	Core Java	3	0	0	3
8.	CSEC14307	DSC-21(b)	Core Java Lab	0	0	2	1
9.	CSEC14308	DSC-22(a)	PHP & My SQL	3	0	0	3
10.	CSEC14309	DSC-22(b)	PHP & My SQL Lab	0	0	2	1
11.	CSEE14000	DSE-1(a)	Elective -I	3	0	0	3
12.	CSEE14001	DSE-1(b)	Elective-I	0	0	2	1
13.	IAPC99349	IAPC-1	Summer Internship and Report	0	0	8	4
14.	SEC077005	SEC-5	Ability & Skill Enhancement – V	2	0	0	2
15.	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
			Total	**22**	**0**	**20**	**31**

Semester - VI

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	CSEC14350	DSC-23(a)	Theory of Computation	3	0	0	3
2.	CSEC14351	DSC-23(b)	Theory of Computation Lab	0	0	2	1
3.	CSEC14352	DSC-24(a)	.NET Technologies	3	0	0	3
4.	CSEC14353	DSC-24(b)	.NET Technologies Lab	0	0	2	1
5.	CSEC14354	DSC-25	Internet of Things (IOT)	3	0	0	3
6.		DSE-2(a)	Elective II	3	0	0	3
7.		DSE-2(b)	Elective II	0	0	2	1
8.		DSE-3	Elective III	4	0	0	4
9.		DSE-4	Elective-IV	4	0	0	4
10.	SEC077006	SEC-6	Ability & Skill Enhancement– VI	2	0	0	2
11.	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
			Total	**22**	**0**	**6**	**26**

Semester -VII

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	DAPE99449	Research Project 1	Capstone Project	0	0	10	5
2.	CSEC14400	DSC-26	Compiler Construction	3	0	0	3
3.	CSEC14401	DSC-27	Artificial Intelligence	4	0	0	4
4.		DSE-5	Elective-V	4	0	0	4
5.		DSE-6	Elective-VI	4	0	0	4
6.	VAC088030	VAC-2	Design Project	2	0	0	2
7.	SEC077007	ASE-7	Ability & Skill Enhancement – VII	2	0	0	2
8.	WHNN99000		Workshops/ Seminars/Human Values/ Social Service/NCC/NSS	-	-	-	1
			Total	**19**	**0**	**10**	**25**

Semester – VIII

S. No.	Course Code	Course Category	Course Name	L	T	P	Credits
1.	DAPE99499	Research Project 2	Project Semester *(To be carried out in Industry / Research Institutions)	0	0	32	16
2.			Project Report Viva-Voce &Presentation	0	0	8	4
			Total	**0**	**0**	**40**	**20**

List of Elective Courses

ELECTIVE-I

S. No.	Course Code	Course Name	Credits
1.	CSEE14000	**Microprocessor(DSE-1)**	3
2.	CSEE14001	**Microprocessor Lab(DSE-1)**	1
3.	CSEE14002	LAMP Technologies	4
4.	CSEE14003	Embedded Systems	4
5.	CSEE14004	Mobile Application Programming	4
6.		Any Related MOOC Course	4

ELECTIVE-II

S. No.	Course Code	Course Name	Credits
1.	CSEE14005	Database Administration with Oracle	4
2.	CSEE14006	Database Administration with IBM DB2	4
3.	CSEE14007	**Advanced Java(DSE-2)**	3
4.	CSEE14008	**Advanced Java Lab(DSE-2)**	1
5.	CSEE14009	Data warehouse and Data Mining	4
6.		Any Related MOOC Course	4

ELECTIVE-III

S. No.	Course Code	Course Name	Credits
1.	CSEE14010	Network Programming	4
2.	CSEE14011	Advanced Data Structures	4
3.	CSEE14012	Advanced Database Management System	4
4.	CSEE14013	Linux Administration and Shell Programming	4
5.	CSEE14014	Wireless Networks	4
6.	CSEE14015	**Cloud Computing (DSE-3)**	4
7.		Any Related MOOC Course	4

ELECTIVE-IV

S. No.	Course Code	Course Name	Credits
1.	CSEE14016	Software Reuse	4
2.	CSEE14017	**Software Verification and Validation (DSE-4)**	4
3.	CSEE14018	Software Design and Construction	4
4.	CSEE14019	Software Quality Management	4
5.	CSEE14020	Aspect Oriented Programming	4
6.		Any Related MOOC Course	4

ELECTIVE-V

S. No.	Course Code	Course Name	Credits
1.	CSEE14021	Soft Computing	4
2.	CSEE14022	**Mobile Computing (DSE-5)**	4
3.	CSEE14023	Parallel and Distributed Computing	4
4.	CSEE14024	Grid Computing	4
5.	CSEE14025	Ubiquitous and Pervasive Computing	4
6.		Any Related MOOC Course	4

ELECTIVE-VI

S. No.	Course Code	Course Name	Credits
1.	CSEE14026	Natural Language Processing	4
2.	CSEE14027	**Network Security and Cryptography (DSE-6)**	4
3.	CSEE14028	Image Processing	4
4.	CSEE14029	Multimedia Technologies	4
5.	CSEE14030	System Programming	4
6.	CSEE14031	Heterogeneous Computing with OpenCL	4
7.		Any Related MOOC Course	4

Specialization Electives for AI & Machine Learning

S.No.	Course Code	Course Name	L	T	P	Credits
1.	CSEE14032	Deep Learning **(E-I)**	3	0	0	3
2.	CSEE14033	Deep Learning Lab **(E-I)**	0	0	2	1
3.	CSEE14034	Data Visualization **(E-II)**	3	0	0	3
4.	CSEE14035	Data Visualization Lab **(E-II)**	0	0	2	1
5.	CSEE14036	Big Data Analytics **(E-III)**	4	0	0	4
6.	CSEE14037	Software Verification and Validation **(E-IV)**	4	0	0	4
7.	CSEE14038	Data Mining Techniques and Applications **(E-V)**	4	0	0	4
8.	CSEE14039	Optimization Techniques in Machine Learning **(E-VI)**	4	0	0	4
9.		Any Related MOOC Course	4	0	0	4

EVALUATION SCHEME- THEORY

The evaluation of the theory paper of B. Tech would be based on Internal and External Assessments.Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50marks). Detailed scheme of Internal and External Assessments as follows:

Internal Assessment

The distribution of Internal Assessment Marks is as follows

Type	Details	Marks
Mid Term	One Mid-term Sessional	25
Quiz	Quiz based on MCQs	5
Marks obtained in various Tests, Assignments, Presentations, Tutorials etc.	Average of Marks obtained	15
Academic Performance including Attendance	Eligibility >75% Attendance	5
TOTAL		**50**

External Assessment

Type	Marks
Theory	50

EVALUATION SCHEME -PRACTICAL

The evaluation of the practical paper of B.Tech would be based on Internal and External Assessments. Internal Assessment would consist of 50% of the marks (50 marks) and external assessment (in form of End Term Exam) would consist of remaining 50% marks (50marks). Detailed scheme of Internal and External Assessment is as follows

Internal Assessment

Type	Details	Marks
Marks obtained in various manuals, practical file, participation, any model prepared, output of practical	Average of marks obtained	45
Academic Performance including Attendance	Eligibility >75% Attendance	5
TOTAL	**50**	

External Assessment

Type	Marks
Practical	50

EVALUATION SCHEME- WORKSHOPS & SEMINARS AND HUMAN VALUES & SOCIAL SERVICE/NCC/NSS

1. The evaluation of Workshops & Seminar and Human Values & Social Service/NCC/NSS will be completed from Semester I – Semester VI. It will be evaluated internally by the various Forums & Schools Concerned. The credit for this will be given at the end of each Semester.

2. The students have to join club/clubs/Forums with the active participation in different activities of club. The students would be continuously assessed from Semester-I to Semester-IV and credits and marks would be given after the end of each Semester.

3. The evaluation of Dissertation/ Academic Project/Entrepreneurship of Semester VII and VIII will be done separately. The dissertation report will be evaluated by departmental faculty followed by presentation and viva voce to be evaluated by external expert

Concluding Note

An overview of the UGCF , clearly brings out the multidisciplinary approach, adherence to innovative ways within the curriculum framework to allow the student maximum flexibility in pursuing his/ her studies at the undergraduate level to the extent of having the liberty to eventually design the degree with multiple exit options depending upon the needs and aspirations of the student in terms of his/ her goals of life, without compromising on the teaching learning, both in qualitative and quantitative terms.

The university expects maximum involvement of the student fraternity in utilising the benefits of such a flexible yet rigorous curriculum framework at the undergraduate level and reaping the benefits of it through enrichment of their skills in their area of interest which will eventually help them in gaining employment, entrepreneurship, start-ups and various other ways of a dignified life and living as a global citizen with comparable skills and innovative ideas befitting to the contemporary global demands. The university expects the youthful nation to reap the maximum benefits out of the UGCF-2022 in developing skilled manpower to harness the youthful energy at one hand and expand the permeation of the skilled workforce globally, taking the demographic advantage on the other hand.

Feedback Form

Suggestions are invited from stakeholders, educators, experts and industries in the Feedback Form whose link is provided on LMS) to further improve upon it.

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