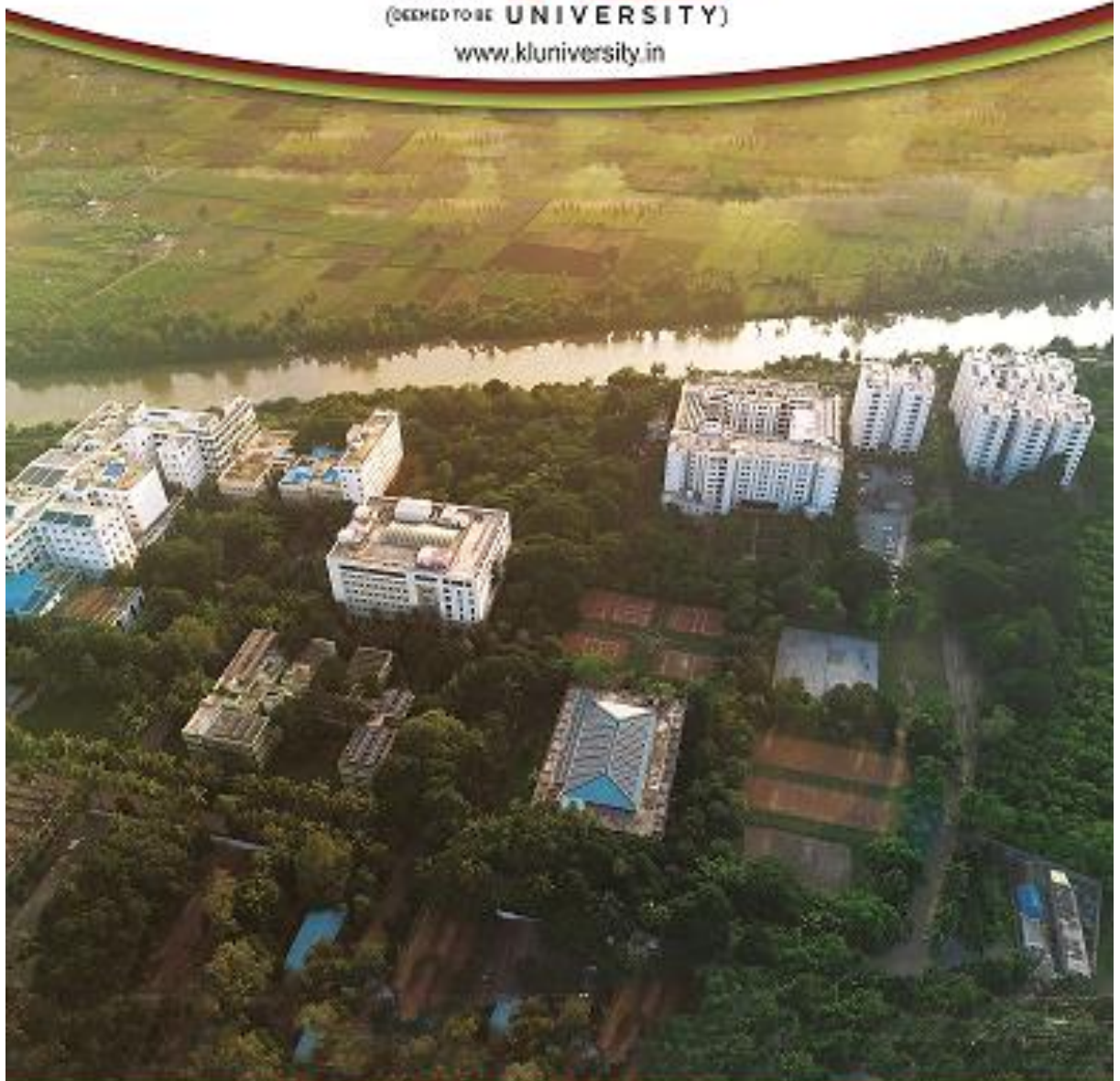# KL

(DEEMED TO BE **UNIVERSITY**)

www.kluniversity.in

STUDENT HAND BOOK - 2021

FIRST SEMESTER COURSES

(Est. u/s.3 of the UGC Act, 1956) (NAAC Accredited "A++" Grade University)

VISION

To be a globally renowned university.

MISSION

To impart quality higher education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students of all sections enabling them to be globally competitive and socially responsible citizens with intrinsic values.
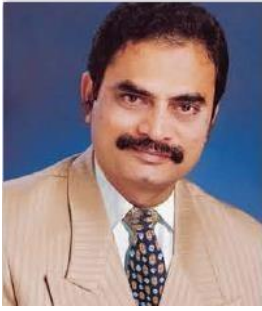
Koneru Satyanarayana,

President

Sri Koneru Satyanarayana, BE, FIE, FIETE, MIEEE graduated in Electronics and Communication Engineering in the year 1977. Along with Sri Koneru Lakshmaiah, he is the co-founder of the Institute which was established in the year 1980. He is an educationist of eminence and also an industrialist of great repute. He runs a number of industries in and around Vijayawada.

Dr. S.S. Mantha

Chancellor

Dr. S S Mantha, an eminent academician and an able administrator, is the former Chairman of the All India Council for Technical Education (AICTE). He joined in this Organization in 2019 as Chancellor, he has been at the forefront of bringing in some radical changes for transparency and accountability in its administration. He holds a Bachelors degree in Mechanical Engineering from the M S University,

Baroda, and a Masters in Mechanical Engineering from VJTI, Mumbai.

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ACRONYMS

Sl No	Acronyms	Full Form
1	KLEF	Koneru Lakshmaiah Education Foundation
2	CET	Common Entrance Test
3	KLEEE	KLEF Engineering Entrance Examination
4	JEE	Joint Entrance Examination
5	BT	Bio Technology
6	CE	Civil Engineering
7	CS	Computer Science &Engineering
8	EC	Electronics & Communication Engineering
9	EE	Electrical & Electronics Engineering
10	CM	Computer Engineering
11	ME	Mechanical Engineering
12	AD	Artificial Intelligence & Data Science
13	CI	Computer Science & Information Technology
14	CGPA	Cumulative Grade Point Average
15	SGPA	Semester Grade Point Average
16	LTPS	Lecture, Tutorial(Studio for Architecture), Practical, Skill
17	SEE	Semester-End Examinations
18	SIE	Semester-In Examinations
19	OJET	On-the-job Engineering Training
20	IRP	Industrial Relations and Placements
21	PS	Practice-School
22	OPAC	Online Public Access Catalog
23	QCM	Quality Circle Meeting
24	MOOC	Massive Open Online Course
25	MOU	Memorandum of Understanding
26	OD	On Duty
27	(A,B]	Between A and B excluding value A and including value B
28	COE	Controller of Examinations
29	VLSI	Very Large Scale Integration
30	M.Tech	Master of Technology
31	COA	Council of Architecture
32	JEE	Joint Entrance Examination

33	NATA	National Aptitude in Architecture
34	PC	Professional Core
35	BSAE	Building Science and Applied Engineering
36	PE	Professional Elective
37	PAECC	Professional Ability Enhancement Compulsory Courses
38	SEC	Skill Enhancement Course
39	OE	Open Elective
40	CTIS	Cloud Technology and Information Security
41	DS	Data Science
42	IoT	Internet of Things
43	IPA	Intelligent Process Automation
44	PCI	Pharmacy Council of India
45	PY	Pharmacy
46	B.Com (H)	Bachelor of Commerce with Honors
47	ACCA	Association of Chartered Certified Accountants
48	HM	Hotel Management
49	BTK	Basic Training Kitchen
50	QTK	Quantitative Training Kitchen
51	ATK	Advanced Training Kitchen
52	MBA	Master of Business Administration
53	BBA	Bachelor of Business Administration
54	MSc (F&C)	Master of Science (Finance & Control)
55	BA	Bachelor of Arts
56	M.Sc	Master of Science

CHAPTER 1

Introduction

1.1: History

The President of Koneru Lakshmaiah Education foundation, Er. Koneru Satyanarayana, along with Late Sri.Koneru Lakshmaiah, founded the K L College of Engineering in the Academic year 1980-81. With the mighty vision and restless efforts of Er. Koneru Satyanarayana K L College of Engineering carved a niche for itself through excellence in engineering education, discipline and record numbers of placements and was the leading college in the state of AP. K L College of Engineering achieved NBA Accreditation for all its B.Tech. Programs in 2004 and later re-accredited in 2007. K L College of Engineering was transformed into an autonomous engineering college in the year 2006. In 2008 this college received a record grade of 3.76 on a 4 points scale with "A" Grade from NAAC; and in February 2009, the college, and Accredited by National Assessment and Accreditation Council (NAAC) of UGC as 'A^{++}' with highest Grade of 3.57 CGPA on 4-point scale in 2018, through its founding society "Koneru Lakshmaiah Education Foundation" was recognized as Deemed to be University by the MHRD-Govt. of India, Under Section 3 of UGC Act 1956. This Deemed to be University is named as "KLEF".

1.1.1: Location

Vijayawada is located on the banks of river Krishna in the state of Andhra Pradesh and has been historically a cultural, political and educational center. It is also a part of Andhra Pradesh Capital Region. The city is well connected by National Highway and Railways with Chennai (440 km), Hyderabad (275 km), and Vizag (385 km) and is a central junction for trains running from North to South India. Daily flights operate from Hyderabad and Bangalore.

KLEF is situated in a spacious 100-acre campus on the banks of Buckingham Canal of river Krishna, eight kilometers from Vijayawada city. Built within a rural setting of lush green fields, the institute is a virtual paradise of pristine nature and idyllic beauty. The campus has been aptly named "Green Fields" and the splendid avenue of trees and gardens bear testimony to the importance of ecology and environment. The campus ambience is most befitting for scholastic pursuits. The University has been situated in a built-up area of around 15, 00,000 S. Ft.

1.2 : Hall Marks:

- **NAAC A++ Grade** with 3.57 CGPA on 4-point scale
- **CATEGORY-1** University by UGC under the categorization of universities for grant of Graded Autonomy
- UGC Recognized under section **12B** of UGC Act 1956
- Approved by MHRD & UGC (Under Section 3 of UGC act 1956)
- ISO 9001 - 2015 Certified Institution

1.3 : Facilities:

Central Library: E-Resources

The Central Library is the largest and holds materials to serve the whole University community. It has materials relevant to the Engineering, Science & Humanities courses offered by the University.

The library system contains more than one lakh and fifty thousand books and periodicals on all subjects related to the teaching and research interests of the University staff and students. The library has over 36,000 electronic journal titles, academic databases and 32.98 lakhs eBooks. Access is available on campus on student computers and remotely.

A new library building will be opened shortly on par with international standards with modern IT facilities.

Every department of the college maintains their library to cater to the needs of students and faculty. All foreign and Indian journals are made available in the department library for the convenience of faculty and students.

The libraries render the following library services.

- Circulation of library documentary.

- Inter-library loan services.

- Photo copying services.

- Reference service.

- CD-ROM search services.

- Internet services.

- OPAC

- WEB OPAC

- Audio visual

- Online lectures

The Data Center:

A State-of-the-Art Data center with advanced servers provides a highly interactive learning environment with full-fledged hardware and software training facilities.

Hardware:

The configuration of high-end stream of servers that provides various services is

Supercomputer

HPC Infrastructure (Supercomputer):

- 5.3 TERA Flops (CPU + GPU)
- HP SL 230 4* SL230s Gen8, (2 * 2.6 GHz, 32GB RAM, 2x500GB HD, 10G IB HCA) providing -1.3TF
- HP SL 250 2* SL250s Gen8, (2 * 2.6 GHz, 32GB RAM, 2x500GB HD, 10G IB HCA + 2 NVIDIA K20 GPU providing -4TF. Master Node:
- HP DL 380P 1* DL380p Gen8 (2 * 2.6Ghz, 64GB RAM, 2x2TB HD, 10G IB HCA).
- Compute Switch (48 Port Low latency switch) Q Logic IB QDR 36 Port Switch.
- Intel® Composer XE for Linux.
- The data centers consist of BYOD Servers& Backup Server, Sun Servers, Dell and HP Blade Servers, Apple Server X server.

Special Laboratories:
The institute is equipped with various Industry Collaborated Labs

S. No	Discipline	Name of the Lab	Research Group Associated
1.	Computer Science & Engineering	CISCO	Computer Networks and security

			Software Engineering
2.	Computer Science &Engineering	IBM	Knowledge Engineering
3.	Computer Science & Engineering	Microsoft	Embedded Systems
			Software Engineering
			Knowledge Engineering
4.	Computer Science & Engineering	Adobe	Web technologies
			Image processing
5.	Computer Science & Engineering	Oracle	Knowledge Engineering
6.	Electronics & Communication Engineering	NI Lab View	Communications Systems
7	Mechanical Engineering	APSSDC Dassault Systems lab, with Dassault 3 D experience suite	Design & Manufacturing, Robotics & Mechatronics
8	Mechanical Engineering	Center for system Dynamics & Condition Monitoring	Design & Manufacturing
9	Mechanical Engineering	MSC: NASTRAN/ PATRAN/ ADAMS simulation suite	Design & Manufacturing

Physical Education- Sports Facilities:

KLEF encourages students to explore their latent talents by providing good games and sports facilities. The institute is equipped with the following.

Sport/Game	No. of Courts	Sport/Game	No. of Courts
Athletic track	1	Handball Court	1
Hockey Field	1	Netball Courts	2
Badminton Courts	4	Throw ball courts	2
Tennikoit Courts	2	Beach Volleyball Court	1
Cricket Field with Net practice	3	Football Field	1
Volleyball Courts	2	Basketball Courts	2
Tennis Courts	2	Kabaddi Courts	2
Kho Kho Court	1	Table Tennis	6

Soft Ball	1	Chess	20
Archery	1	Caroms	12

The University had a State-of- the - Art Indoor stadium of 30000 sq.ft with:

- ☐ 4 wooden Shuttle Courts/ Basketball Court
- ☐ Yoga and Meditation Center
- ☐ Dramatics
- ☐ 8 Table Tennis Tables
- ☐ Hobby Center
- ☐ Gymnasium for Girls
- ☐ Gymnasium for Boys
- ☐ Multipurpose room with Chess, Caroms etc.
- ☐ Power lifting/Weightlifting

Accommodation- Hostels

- KLEF has separate hostels for boys and girls with well furnished rooms and modern amenities. The overall atmosphere is very conducive for the students to concentrate on their studies.
- A state- of – the- art kitchen and spacious dining area has been provided for both the hostels.
- Generators have been provided as power back up.
- Emphasis has been laid on hygiene and cleanliness for healthy living. A customized menu caters to the student needs, it keeps changing according to their tastes.
- Teaching staff will have to address the academic and personal problems of the students.
- Round-the-clock security, communication, dispensary facilities are also available.

➢ **The Girls Hostel**

The girl's hostel is within the campus with a capacity of 1192 in 500 rooms. Different rooms accommodating 2 per room, 3 per room with attached toilets as well as A.C. rooms are available. Suite rooms with modern furniture and a separate study room are also available.

➢ **The Boys Hostel**

It is a short walk from the university with a capacity of 2040 in 780 rooms. Different rooms accommodating 2 per room, 3 per room with attached toilets as well as A.C. rooms are available.

➢ Facilities in the Hostels

Protected drinking water, state of the art kitchen, dining hall, newspapers, telephones, toilets and bathrooms are well maintained. Every student in the hostel is provided with a cot, study table, chair and a rack. Fan and light are also provided in each room.

- Gas & Steam based hygienic food preparation
- Palatable regional, national and international cuisines
- Cleanliness and Safety
- STD/ISD Facilities
- Medical Kits and First Aid Boxes
- Soft drinks, snacks, Fruits etc.
- Laundry
- Stationary shop

➢ Hostel Rules & Regulations

- Students are hereby informed that while staying in the hostel, it is essential to be responsible for maintaining dignity by upholding discipline. They must be obedient to the hostel warden/floor in – charges.
- Valuable items like jewelry etc. should not be kept with students while staying in the hostel. It is student's own responsibility to safeguard her/his Laptops, Money by locking suitcases and bags. If any loss is found, management will not take any responsibility.
- Students must intimate to the hostel authorities before giving police complaints against losses.
- Students are not allowed to indulge in smoking; consumption of Alcohol, Narcotic drugs etc., and defaulters will be strictly viewed upon.
- Students are directed that after locking their rooms they must hand over the keys to security and can collect them on returning to the hostel.
- Students must switch off Fans, Lights, Geysers, A/C's etc., before leaving their rooms.
- Visitors are not allowed inside the hostel at any time; however, they are allowed into the visitor's hall with the prior permission of the warden. Only family members listed by the parents are allowed to contact the student. Visiting hours are up to 7.30 pm only and after 7.30 pm visitors are required to leave the premises.
- Hostel students are not allowed to come into the hostel after 3.00 pm in case

morning shift students and 6.00pm for day shift students. Those students who are utilizing computer lab, library etc., after the times specified must submit the permission slip to the security while entering the hostel.

- During public holiday outings, those who seek permission to leave the hostel will have to obtain written permission from the warden. Permission will be given only to those students who get permission from parents to leave the hostel during holidays/outings. Moving out of campus without permission is strictly prohibited.

- Strict study hours from 7.30 am to10.30 pm shall be maintained in the hostel. The hostellers must be in their allotted rooms during study hours.

- The general complaints of any kind should be noted in the complaint register, which is available at the hostel office. Registered complaints will only be entertained.

- Any health problem should be brought to the notice of Warden/Floor In – charge for necessary treatment.

Transportation:

The institution runs 80 buses covering all the important points in Vijayawada City, Mangalagiri, Guntur & Tenali towns with a total seating capacity of 4000 students in two shifts.

- Transport is available 24 hrs. in case of any emergency in the institute / hostels.
- Transportation is available for conducting industrial tours and visits etc.
- Regular transport facility available up to 10 PM.

Health Centre:

A full-fledged health center with all the facilities is established to cater to the needs of the students, staff, Faculty and to the general public in the adopted villages. It consists of three doctors (Homoeopathy, Ayurvedic & Allopathy).

Cafeteria:

- KLEF has a spacious canteen with the latest equipment and a hygienic environment which provides quality food and prompts service and caters to the needs of all the students and staff.

- A central cafeteria of 1500 Sq.m. is available on the campus. Mini cafes and fast-food centers are available in various blocks.

- The canteen is open from 6:30 a.m. to 8:30 p.m. There is a wide variety of North- Indian and South-Indian cuisine and the students enjoy the pleasure of eating during the breaks.

Cool aqua water for drinking is available.

1.4 : Placements:

KLEF has meticulously planned to make all its outgoing students employed. The University had installed the infrastructure, employed well experienced faculty, designed and delivered programs that help to enhance the communication and soft skills which are required for making the students employable. An excellent system is in place that considers all the issues that make a student employable. The University has been successful for the last 7 years in employing all the students who have registered and eligible for placement through its offices located across the country. About 50 trained personnel work extensively to make the students ready for recruitment by the industry.

1.5 : Counseling& Career Guidance:

A special Counseling Cell consisting of professional student counselors, psychologists, and Professors counsels/helps the students in preparing themselves to cope with studies, perform well in the tests & various competitions. This Cell provides its services to the students in getting the solutions for their personal problems and provides career guidance with the help of Industrial Relations and Placements (IRP) department. A group of 20 students are allotted to each faculty member who counsels them regularly and acts as their mentor.

1.6 : Social Service Wing:

KLEF has a social service wing which is used to channelize the social service activities of the faculty, staff and students. It has adopted 5 nearby villages and conducts activities like medical camps, literacy camps and educates the villagers regarding hygiene and health care on a regular basis.

1.7 : NSS/NCC Wing of Institute:

NCC/NSS is a credit course designed with an intent to transform NCC/NSS activities into curricular activities from an extra curricular thereby providing credits to students involved in NCC/NSS along with other attended advantages to the students in the university

1.8 : Hobby Clubs:

Wholly and solely managed by the students, the clubs have in the past contributed much to the cultural life of the campus and to the cultural evolution of the students, few student

bodies and clubs operate in the campus like music society, dance club, drama society, literary and debating club, English press club, drawing club, painting club, mime club, computer club etc. Students manage entire activities and budget of the organization for the entire semester in advance. Around 4000 students are active members of the Hobby Clubs.

1.9 : Life Skills and Inner Engineering:

KLEF feels that it is its responsibility to mold the students as good human beings, contributing to the country and to society by producing responsible citizens. Along with the regular programs every student admitted into KLEF undergoes a one-week special life skills /orientation program. Through this program, KLEF is producing the students with the clarity of thoughts and charity at heart. Strict regularity, implicit obedience, courtesy in speech and conduct, cleanliness in dress and person is expected of each KLEF student. Life skills and inner engineering teach a student his/her obligation towards GOD, himself /herself his/her country and fellow human beings. Every student is encouraged to practice his/her own religious faith and be tolerant and respectful towards other religions.

1.10 : Technical Festival:

KLEF organizes various programs for the all-round development of the students. The technical festival and project exhibition is being organized in the odd semester (October) every year to elicit the innovative ideas and technical skills of the students.

Cultural Festival:

The cultural festival in the even semester (February) of every year is the best platform for the students to exhibit their talents and creativity. Through these festivals KLEF is imparting organizational skills, leadership skills, competitive spirit, and team behavior skills to our students. Along with the knowledge, KLEF festivals provide recreation to the student community.

1.11 : Center for Innovation, Incubation and Entrepreneurship (CIIE):

KLEF being a pioneering institute supporting Academics and Research in Engineering, Science and Technology is endowed with the entire infrastructure and highly experienced faculty, has a Centre for Innovation, Incubation and Entrepreneurship (CIIE) that comprises of:
- Innovation Centre which aims to inculcate a spirit of innovation.
- Incubation Centre which aims to incubate innovations through prototype product

development.

- Entrepreneurship Development Centre (EDC) which aims at fostering entrepreneurial skills among the students.

CHAPTER -2

LIST OF PROGRAMS

S.No	Program Code	Name of the Program
1	001	B.Tech - Bio Technology
2	002	B.Tech - Civil Engineering
3	003	B.Tech -Computer Science and Engineering
4	004	B.Tech -Electronics and Communication Engineering
5	006	B.Tech -Electrical and Electronics Engineering
6	007	B.Tech - Mechanical Engineering
7	010	B.Tech - Artificial Intelligence & Data Science
8	011	B.Tech - Computer Science & Information Technology
9	013	B.Tech - Electronics and Computer Science
10	014	B.Tech- Internet of Things
11	2010	M.Tech - Bio Technology
12	2021	M.Tech -Structural Engineering
13	2022	M.Tech-Construction Technology & Management
14	2028	M.Tech -Geotechnical Engineering
15	2031	M.Tech - Computer Science and Engineering
16	2037	M.Tech- Artificial Intelligence & Data Science
17	2036	M.Tech-Digital Forensic & Cyber Security
18	2042	M.Tech - Very Large-Scale Integration
19	2045	M.Tech - Radar & Communication
20	2046	M.Tech - Internet of Things
21	2061	M.Tech - Power Systems
22	2062	M.Tech - Power Electronics and Drives
23	2071	M.Tech - Thermal Engineering
24	2075	M.Tech - Machine Design
25	2076	M.Tech - AUTOMATION AND ROBOTICS
26	3010	Ph.D. -Biotechnology
27	3020	Ph.D. -Civil Engineering
28	3030	Ph.D. -Computer Science and Engineering
29	3040	Ph.D. -Electronics and Communication Engineering
30	3050	Ph.D. -Electronics and Computer Engineering
31	3060	Ph.D. -Electrical and Electronics Engineering
32	3070	Ph.D. -Mechanical Engineering
33	016	B. Arch.
34	025	B.Sc. (Visual Communications)
35	054	BBA

36	2510	MBA
37	058	B.Sc(Hotel Management)
38	052	B.Com (Honors)
39	2060	M.Sc(Finance and Control)
40	064	B Com (Hons) CMA
41	065	B Com (EA)
42	018	B. Pharmacy
43	2019	M. Pharmacy
44	2018	PHARM.D.
45	055	BBA-LLB
46	059	LL.B
47	017	BCA
48	2511	MCA
49	2230	M.Sc.(Chemistry)
50	2210	M.Sc.(Applied Mathematics)
51	2220	M.Sc.(Physics)
	2512	MSc Computer Science
52	2240	M.A(English)
53	061	B.Sc(Travel & Tourism)
54	009	B. Design
55	056	BFA
56	057	BA
57	060	B.Com (Computer Applications)
58	2059	LL.M
59	063	BSc Agriculture
60	066	BSc Computers
62	3210	Ph.D. -Mathematics
63	3220	Ph.D. -Physics
64	3220	Ph.D. -Chemistry
65	3240	Ph.D. -English
66	3510	Ph.D. -Management
67	3530	Ph.D. -Law
68	3540	Ph.D. -Pharmacy

2.1: COLLEGE OF ENGINEERING

B. Tech- Bachelor of Technology, M.Tech- Master of Technology

S.no	Program	Duration (Years)	Eligibility
1	B.Tech in Biotechnology (BT)	4	

2	B.Tech in Civil Engineering (CE)	4	10 +2 or equivalent at least 60% in aggregate and 60% and above (or) equivalent CGPA in Group subjects / Physics, Chemistry and Mathematics, (For BT program physics ,chemistry and biology are also eligible)
3	B.Tech in Computer Science & Engineering CSE)	4	
4	B.Tech in Electronics and Communication Engineering (ECE)	4	
5	B.Tech in Electrical and Electronics Engineering (EEE)	4	
6	B.Tech in Mechanical Engineering (ME)	4	
7	B.Tech in Artificial Intelligence & Data Science (AI & DS)	4	
8	B.Tech in Computer Science and Information technology (CS & IT)	4	
9	B.Tech in Electronics and Computer Science	4	
10	B.Tech in Internet of Things	4	
11	M.Tech in Biotechnology	2	B.E/B.Tech (BT/ Chemical Engg. /Leather Technology/Bio-Tech./Industrial Bio-Tech. /Bio-chemical Engg. /Bio-Informatics) or B.Pharm. Or M.Sc. (Ag.)/M.V.Sc. /M.Sc. in any branch of Life Sciences. With at least 55 % or equivalent CGPA
12	M.Tech in Structural Engineering	2	B. Tech (CE) with at least 55% or equivalent CGPA
13	M.Tech in Construction Technology and Management	2	
14	M.Tech in Geotechnical Engineering	2	
15	M.Tech in Computer science and Engineering	2	B. Tech / MCA/M.Sc with atleast 55% or equivalent CGPA
16	M.Tech in Artificial Intelligence and Datascience	2	B. Tech CSE/IT/CSIT/AI & DS or equivalent with at least 55% or equivalent CGPA
17	M.Tech in Digital Forensics & Cyber Security	2	
18	M.Tech in Radar & Communication	2	B. Tech ECE/CSE/ECS/IOT or equivalent with at least
19	M.Tech in Very Large-Scale	2	

S.no	Program	Duration (Years)	Eligibility
	Integration		55% or equivalent CGPA
20	M.Tech in Internet of Things	2	
21	M.Tech in Power Systems	2	B. Tech (EEE) or equivalent with at least 55% or equivalent CGPA
22	M.Tech in Power Electronics and Drives	2	
23	M.Tech in Thermal Engineering	2	B.Tech (ME) or equivalent with minimum of 55 % marks or equivalent CGPA
24	M.Tech in Machine Design	2	
25	M.Tech in Automation and Robotics	2	B.Tech in ME/ ECE/AI & DS/CSE/EEE or equivalent with minimum of 55 % marks or equivalent CGPA minimum of 55 % marks or equivalent CGPA

2.2: College of Arts & Science and Humanities

S.no	Program	Duration (Years)	Eligibility
1	Bachelor of Arts (BA)	3	10+2 or equivalent with at least 50% and must have qualified in KL entrance exam
2	Bachelor of Computer application (BCA)	3	
3	Bachelor of science in Visual Communication (B.Sc Vc)	3	10+2 or equivalent with at least 55 % and must qualify in KL Entrance Exam or qualified any State Level Exams across India
4	Master of Arts (MA English)	2	Any Bachelor's degree excluding Bachelor of Fine Arts, with minimum of 50% marks or equivalent CGPA
5	Master of Science (M.Sc (Chemistry))	2	Bachelor's degree in Science with 55% or Equivalent CGPA with honors / in Chemistry as one of the Course.
6	Master of Science (M.Sc (Applied Mathematics))	2	Any Bachelor's degree with 55% or Equivalent CGPA with honors / in Mathematics as one of the Course.
7	Master of Science (M.Sc Physics))	2	Bachelor's degree in Science with minimum of 55% marks or equivalent CGPA in Physics as

S.no	Program	Duration (Years)	Eligibility
			one of the Course.

2.3 : Business School

S.no	Program	Duration (Years)	Eligibility
1	Bachelor of Business Administration (BBA)	3	10+2 or equivalent with at least 50% and must have qualified KL entrance exam.
2	Bachelor of Commerce with Honor's B. Com(H)	3	
3	B.Sc Hotel Management	3	10+2 or equivalent with at least 55%.
4	Master of Business Administration (MBA)	2	Bachelor's degree with 55% marks or equivalent CGPA and qualified anyone (KLEFBSAT)/ ICET / MAT / CAT / XAT & Personal interview
5	Master of Science (Finance and Control)	2	Bachelor's degree with 55% marks or equivalent CGPA and Mathematics /Statistics as one of the course at 10+2 /UG.

2.4: School of Architecture

S.no	Program	Duration (Years)	Eligibility
1	Bachelor of Architecture	5	10+2 or equivalent with JEE- Paper 2 score or NATA score

2.5: College of Agriculture

S.no	Program	Duration (Years)	Eligibility
1	B.Sc Agriculture	4	55%

2.6: College of Pharmacy

S.no	Program	Duration (Years)	Eligibility

S.no	Program	Duration (Years)	Eligibility
1	Bachelor of Pharmacy (B.Pharm)	4	10+2 or equivalent with at least 60% in aggregate and 50% in PCM / PCB and Qualified in any one EAMCET / NEET / Any State Level Pharmacy Entrance Exams across India
2	PHARMA. D	2	10+2 examination with Physics and Chemistry as compulsory subjects along with Mathematics or Biology
3	M. Pharmacy in Pharmaceutics	2	B.Pharmacy with 55% aggregate

2.7: College of Law

S.no	Program	Duration (Years)	Eligibility
1	Bachelor of Business Administration and Bachelor of Law (BBA-LLB)	5	10+2 or equivalent with at least 45% in aggregate Any State Level Entrance Exams across India
2	Bachelor of Law (LL.B)	3 Years	The candidate should have passed any Graduate Degree Examination or its equivalent to 10+2+3, with a minimum of 45% marks. Relaxation of 5% marks will be applicable to S.C., & S.T., candidates.
3	Master of Law (LL.M)	2 Years	The candidate should have passed Bachelor's Degree in Law, either 3 years or 5 years programme, with a minimum of 50% marks. Relaxation of 5% marks will be applicable to S.C., & S.T., candidates

CHAPTER 3

PROGRAM EDUCATIONAL OBJECTIVES (PEOs) AND

PROGRAM OUTCOMES (POs)

3.1: Engineering Undergraduate Programs

Program Educational Objectives (PEOs)

To be a globally renowned university, as per our vision, we need to produce quality products (graduates) into the market who have potential strengths to meet all the professional and personal challenges prevailing at global levels and who can serve in all the possible positions of their respective job domains and contribute towards holistic growth of their respective employment providers as well as the nation, world. The graduates must also possess cutting edge R&D skills in their domain areas.

This is exactly what has been framed into the University's Mission and thereby the Mission has converted into the following **Program Educational Objectives (PEOs)** which are best suited to Undergraduate Engineering programs, and are those that complement the university vision, mission.

Program Educational Objectives of B.Tech Program:

PEO NO	Description
PEO1	Practice engineering in a broad range of industrial, societal and real-world applications.
PEO2	Pursue advanced education, research and development, and other creative and innovative efforts in science, engineering, and technology, as well as other professional careers.
PEO3	Conduct themselves in a responsible, professional, and ethical manner.
PEO4	Participate as leaders in their fields of expertise and in activities that support service and economic development throughout the world.

Program Outcomes (POs):

PO NO	Description
PO1	**Engineering Knowledge: An** ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization for the solution of complex engineering problems in engineering
PO2	**Problem Analysis: An** ability to identify, formulate, research literature, analyze complex engineering problems in mechanical engineering using the first principles of mathematics, natural sciences and engineering sciences
PO3	**Design/ development of solutions: An** ability to design solutions for complex engineering problems and system component or processes that meet the specified needs considering public health & safety and cultural, societal & environment

PO4	**Conduct investigations of complex problems: An** ability to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to obtain solutions to engineering problems.
PO5	**Modern tool usage: Ability** to create, select and apply appropriate techniques, resources and modern engineering activities, with an understanding of the limitations.
PO6	**The engineer and society: Ability** to apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	**Environment and sustainability** Ability to demonstrate the knowledge of engineering solutions, contemporary issues understanding their impacts on societal and environmental contexts, leading towards sustainable development.
PO8	**Ethics:** An ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO9	**Individual and team work: An** ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
PO10	**Communication: Ability** to communicate effectively oral, written reports and graphical forms on complex engineering activities.
PO11	**Project management and finance: Ability** to demonstrate knowledge and understanding of engineering and management principles and apply those one's own work, as a member and leader in team, to manage projects and in multi-disciplinary environments
PO12	**Lifelong learning** An ability to recognize the need for and having the preparation and ability to engage independent and life-long learning in broadest context of technological change

Program Specific Outcomes (PSOs)

Biotechnology	
PSO1	Graduates will be able to design, perform experiments, analyze and interpret data for investigating complex problems in biotechnology Engineering and related fields.
PSO2	Graduates will be able to justify societal, health, safety and legal issues and understand their responsibilities in biotechnological engineering practices.
Civil Engineering	
PSO1	Function as design consultants in construction industry for the design of civil engineering structures.
PSO2	Provide sustainable solutions to the Civil Engineering Problems.
Computer Science & Engineering	
PSO1	An ability to design and develop software projects as well as Analyze and test user requirements.
PSO2	An Ability to gain working Knowledge on emerging software tools and technologies.

Electronics & Communication Engineering	
PSO1	An ability to Understand the theoretical and mathematical concepts to analyze real time problems.
PSO2	An Ability to Design and Analyze systems based on theoretical and Practical Knowledge
Electrical & Electronics Engineering	
PSO1	Knowledge and hands on competence in simulating, developing, Testing, operation and maintenance of Electrical & Electronics systems.
PSO2	Able to work in multi-disciplinary environments with knowledge of Electrical and Electronics domain and in Project Management techniques, environmental issues and green technologies.
Mechanical Engineering	
PSO1	An ability to demonstrate knowledge, skill to analyze the cause and effects on machine elements, processes and systems.
PSO2	An ability to apply the acquired Mechanical Engineering knowledge for the advancement of society and self.
Artificial Intelligence and Data Science	
PSO1	An ability to design and develop Artificial Intelligence technology into innovative products for solving real world problems.
PSO2	An ability to design and develop Data Science methods for analyzing massive datasets to extract insights by applying AI as a tool
PSO3	An ability to apply basic principles and practices of computing supported by mathematics and science to successfully develop software related engineering projects to meet customer business objectives and/or productively engage in research.
Computer Science & Information Technology	
PSO1	An ability to Identify, Design, and Analyze complex computer systems, Implement and Interpret the results from those systems.
PSO2	An ability to select and apply current techniques, skills, and tools necessary for computing practice and integrate IT-based solutions into the user environment effectively.
Electronics and Computer Science	
PSO1	Ability to design systems and desired needs for sustainable development and engineering solutions to the problems using knowledge and skills developed in thrust areas.
PSO2	Ability to solve Electronics Engineering problems using the latest hardware and software tools, to achieve cost effective and optimal solutions in the domain of Internet of Things and hardware security
Internet of Things	
PSO1	An ability to Understand the theoretical and mathematical concepts to analyze real time problems and develop the systems to resolve.
PSO2	An Ability to Design and Analyse systems based on theoretical foundation, Professional Knowledge and Practical Skills.

3.2 ENGINEERING POST GRADUATE PROGRAMS

Master of Technology (M.Tech)

The Programme Educational Objectives (PEOs) are the statements that describe the expected achievements from the programme. They are guided by global and local needs, vision of the Institution, long term goals etc.

The Program Educational Objectives of M.Tech Program:

PEO NO	Description
PEO1	To mould the students to become effective global science students in the competitive environment of modern society.
PEO2	To provide students with strong foundation in contemporary practices of science, different functional areas and scientific environment
PEO3	To emphasize application-oriented learning.
PEO4	To develop communication, analytical, decision-making, motivational, leadership, problem solving and human relations skills of the students.
PEO 5	To inculcate professional and ethical attitude in students.
PEO6	To pursue lifelong learning as a means of enhancing knowledge and skills necessary to contribute to the betterment of profession

M.Tech Biotechnology Program Outcomes

PO NO	Description
PO1	Ability to practically apply various Biotechnological concepts.
PO2	Demonstrate knowledge of innovative and modern bioengineering practices.
PO3	Synergize biological sciences with engineering and solve various societal and health problems.

M.Tech -Structural Engineering Program Outcomes

PO NO	Description
PO1	An ability to independently carry out research /investigation and development work to solve practical problems.
PO2	An ability to write and present a substantial technical report/document
PO3	Students should be able to demonstrate a degree of mastery for designing and solving structural engineering problems.
PO4	An ability to use appropriate modern tools in structural engineering. In doing so he should demonstrate sufficient knowledge of competing tools and their relative merits and demerits
PO5	An ability to demonstrate the traits of learning and unlearning throughout his professional career, and be willing to learn new techniques, methods and processes
PO6	Tune his knowledge to be a responsible engineer adhering to all established practices of his profession

M.Tech -Construction Technology & Management Program Outcomes

PO NO	Description
PO1	An ability to independently carry out research /investigation and development work to solve practical problems.
PO2	An ability to write and present a substantial technical report/document.
PO3	Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
PO4	Students should be able to understand how to implement construction process using effective and efficient project planning tools, they will be be able to identify the activities and coordinate resources and create goals and objectives to complete individual tasks.
PO5	Students should be able to understand how to use mathematics logic and technology to help effectively and efficiently analysis the project and solve problems required for technical tasks.
PO6	Students should be able to understand concepts related to running sustainable projects and business.

M.Tech - Geotechnical Engineering Program Outcomes

PO NO	Description
PO1	Independently carry out research/investigation and development work to solve practical problems.
PO2	Write and present a substantial technical report/document.
PO3	Demonstrate a degree of mastery over geotechnical engineering.
PO4	Identify Engineering solutions to problematic soils and provide suitable foundation.
PO5	Apply modern tools for designing geo technical structures.
PO6	Work in inter-disciplinary engineering teams with social responsibility and ethical values and pursue lifelong learning.

M.Tech- Computer Science Engineering Program Outcomes

PO NO	Description
PO1	Apply the knowledge of computer engineering principles and paradigms in the design of system components and processes that meet the specific needs of the industry.
PO2	Identify, analyze and formulate solutions to complex engineering problems using innovative and emerging technologies.
PO3	Effectively communicate technical information in speech, presentation and documentation.

PO4	Extract information relevant to novel problems and apply appropriate research methodology to develop scientific knowledge.
PO5	Self-learn and pursue higher studies to upgrade qualifications and attain constructive growth in profession.
PO6	Make valuable contributions to design, developer by practicing related engineering applications and algorithmic methods.
PO7	Provide exposure to latest tools and technologies based on the industry needs and contribute to valuable research findings in the specialized domains.

M.Tech- Artificial Intelligence & Data Science Program Outcomes

PO NO	Description
PO1	Apply the knowledge of computer engineering principles and paradigms in the design of system components and processes that meet the specific needs of the industry.
PO2	Identify, analyze and formulate solutions to complex engineering problems using innovative and emerging technologies.
PO3	Effectively communicate technical information in speech, presentation and documentation.
PO4	Extract information relevant to novel problems and apply appropriate research methodology to develop scientific knowledge.
PO5	Self-learn and pursue higher studies to upgrade qualifications and attain constructive growth in profession.
PO6	Make valuable contributions to design, developed by practicing related engineering applications and algorithmic methods.
PO7	Provide exposure to the latest tools and technologies based on the industry needs and contribute to valuable research findings in the specialized domains.

M.Tech-Digital Forensics & Cyber Security Program Outcomes

PO NO	Description
PO1	Apply the knowledge of computer engineering principles and paradigms in the design of system components and processes that meet the specific needs of the industry.
PO2	Identify, analyze and formulate solutions to complex engineering problems using innovative and emerging technologies.
PO3	Effectively communicate technical information in speech, presentation and documentation.
PO4	Extract information relevant to novel problems and apply appropriate research methodology to develop scientific knowledge.
PO5	Self-learn and pursue higher studies to upgrade qualifications and attain constructive growth in profession.
PO6	Make valuable contributions to design, developed by practicing related engineering applications and algorithmic methods.

PO7	Provide exposure to latest tools and technologies based on the industry needs and contribute to valuable research findings in the specialized domains.

M.Tech- Very Large-Scale Integration Program Outcomes

PO NO	Description
PO1	Apply the knowledge of science, mathematics, and engineering principles for developing problem solving attitude and get sound knowledge in the theory, principles and applications of VLSI Circuits and Systems.
PO2	Configure recent EDA tools, apply test conditions, deploy and manage them.
PO3	Design and conduct experiments, analyze and interpret data, imbibe programming skills for development of simulation experiments.
PO4	Ability to demonstrate the knowledge of engineering solutions, and function as a member of a multidisciplinary team with a sense of ethics, integrity and social responsibility.
PO5	To develop, design and implement projects with given specifications, in order to cater to industrial needs.
PO6	Ability to investigate develops and carries out research to solve industrial problems related to designing and testing of VLSI systems.
PO7	Design a system, component or process as per social needs and specifications and also will be aware of contemporary issues.

M.Tech - Radar & Communication Program Outcomes:

PO NO	Description
PO1	An ability to identify, formulate, research literature, analyze complex engineering problems in the area of communications and RADAR to cater national and industrial needs.
PO2	An ability to develop solutions for complex problems in communication system design and RADAR system components or processes that meet the specified needs considering.
PO3	Ability to create and apply appropriate techniques using modern industrial and research tools for modeling and testing antennas, communications system modules and RADAR systems.
PO4	An ability to design the experiments, analysis and interpretation of data and synthesis of the information using various modern and industrial tools to obtain solutions for complex problems in industries, military and social needs.

PO5	Ability to apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, ethical principles of engineering practices and the consequent responsibilities relevant to RADAR engineering.
PO6	Exposure to prerequisite math's and a mathematically rigorous approach to communication theory will provide him with all the necessary background to pursue a career in any field of communications going forward in his career.
PO7	An ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings for project management by demonstrating the knowledge and understanding of principles of communication systems and radar, and apply those one's own work, as a member and leader in team, to manage projects and in multi-disciplinary environments.

M.Tech - Internet of Things Program Outcomes

PO NO	Description
PO1	Apply the knowledge of engineering principles and paradigms in the design of system components and processes that meet the specific needs of the industry.
PO2	Identify, analyze and formulate solutions to complex engineering problems using innovative and emerging technologies.
PO3	Effectively communicate technical information in speech, presentation and documentation.
PO4	Extract information relevant to novel problems and apply appropriate research methodology to develop scientific knowledge.
PO5	Self-learn and pursue higher studies to upgrade qualifications and attain constructive growth in profession.
PO6	Make valuable contributions to design, developed by practicing related engineering applications and algorithmic methods.
PO7	Provide exposure to the latest tools and technologies based on the industry needs and contribute to valuable research findings in the specialized domains.

M.Tech - Power Systems Program Outcomes

PONO	Description
PO1	Acquire in- depth knowledge in the domain of power systems and understanding of engineering principles for project management.
PO2	Ability to critically analyze various power system components, models and their operation.
PO3	Ability to apply fundamentals and concepts to analyze, formulate and solve complex problems of electrical power systems and its components.

PO4	Apply advanced concepts of electrical power engineering to analyze, design and develop electrical components, apparatus and systems to put forward scientific findings at national and international levels.
PO5	Ability to use advanced techniques, skills and modern scientific and engineering tools for professional practice.
PO6	Preparedness to lead a multidisciplinary scientific research team, communicate and lifelong learning effectively.

M.Tech – Power Electronics and Drives Program Outcomes

PO NO	Description
PO1	Apply the knowledge of science and mathematics in designing, analyzing and using the power converters and drives for various applications for problem solving
PO2	Design modern electric machines, drives, power converters, and control circuits for specific applications
PO3	Use modern tools, professional software platforms, embedded systems for diversified applications
PO4	Function as a member of a multidisciplinary team and correlate the domain knowledge for global problems.
PO5	Demonstrate communication at different levels effectively
PO6	Explore ideas for inculcating research skills and appreciate critical and independent thinking and engage in lifelong learning.

M.Tech. – Thermal Engineering Program Outcomes

PO NO	Description
PO1	Advanced knowledge of a broad range of modelling methodologies, and underlying mechanical science, commonly used in the development and analysis of Thermal engineering systems.
PO2	Knowledge of fundamental design issues relevant to Thermal engineering, and an understanding of how to formulate and analyze design solutions in various engineering contexts.
PO3	Working knowledge of a range of modern mathematical methods and tools used in the development and analysis of Thermal engineering systems.
PO4	In-depth knowledge of one or more of the following (depending on selection of option modules and project area): specific engineering systems, design methods, modelling techniques, mathematical and/or numerical techniques.
PO5	Knowledge of basic research and development principles and practices relevant to mainstream engineering industry.
PO6	Knowledge of key professional, safety and ethical issues arising in modern engineering industry.
PO7	Knowledge of time-management and work planning issues related to the organization, implementation and successful completion, including reporting, of an individual, Masters level, engineering-based project.

M.Tech. – Automation and Robotics Program Outcomes

PO NO	Description
PO1	Apply the knowledge of engineering principles and paradigms in the design of system components and processes that meet the specific needs of the industry.
PO2	Identify, analyze and formulate solutions to complex engineering problems using innovative and emerging technologies.
PO3	Effectively communicate technical information in speech, presentation and documentation.
PO4	Extract information relevant to novel problems and apply appropriate research methodology to develop scientific knowledge.
PO5	Self-learn and pursue higher studies to upgrade qualifications and attain constructive growth in profession.
PO6	Make valuable contributions to design, developed by practicing related engineering applications and algorithmic methods.
PO7	Provide exposure to the latest tools and technologies based on the industry needs and contribute to valuable research findings in the specialized domains.

M.Tech – Machine Design Program Outcomes

PO NO	Description
PO1	Advanced knowledge of a broad range of modelling methodologies, and underlying principles of mechanics, commonly used in the development and analysis of mechanical machines and systems.
PO2	Knowledge of fundamental design issues relevant to machine or mechanical component, and an understanding of how to formulate and analyze design solutions in various engineering contexts.
PO3	Working knowledge of a range of modern mathematical methods and tools used in the development and analysis of machines and mechanical systems.
PO4	In-depth knowledge of one or more of the following (depending of selection of option modules and project area): specific engineering systems, design methods, modelling techniques, mathematical and/or numerical techniques.
PO5	Knowledge of basic research and development principles and practices relevant to mainstream engineering industry.
PO6	Knowledge of key professional, safety and ethical issues arising in modern engineering industry.
PO7	Knowledge of time-management and work planning issues related to the organization, implementation and successful completion, including reporting of an individual, Master level, engineering-based project.

3.3 Bachelor of Architecture (B.Arch) Program Educational Objectives

PEO NO	Description
PEO1	Should be able to stimulate artistic sensitivity and creative powers. (SKILL)
PEO2	Strengthen intellectual growth and the capacity to develop creative and responsible solutions to unique and changing problems. (EMPL)
PEO3	Acquireleadership capabilities necessary for the competentpracticeof architecture and lifelong learning. (ETPR)
PEO4	Pursue advanced education, research and development, and other creative and innovative efforts in the field of Architecture. (SKILL).

Bachelor of Architecture (B.Arch) Program Outcomes:

PONO	Description
PO1	Ability to gain knowledge of Humanities, Sciences and Architecture and the application of knowledge in practice.
PO2	Use the elements of Architecture and apply basic principles in Architectural Design.
PO3	Identify and solve the social, economical and cultural issues in Architectural Design.
PO4	Ability to apply theoretical knowledge to achieve Architectural Design solutions.
PO5	Recognize the ethical and professional responsibilities and the norms of Architectural practice.
PO6	Ability to research, review, comprehend and report technological developments happening in the field of Architecture
PO7	Communicate effectively and work in interdisciplinary groups according to the project scale.
PO8	To guide the Building construction workforce in the right direction
PO9	Ability to understand the real-life situation in converting the On-paper design to On-site design of Architectural Practice
PO10	To make the student design aesthetically pleasing, structurally viable buildings and encourage technological advancements in the building construction industry.

Bachelor of Architecture (B.Arch) Program Specific Outcomes

PSO NO	Description
PSO1	PS01: Ability to enhance creative design skills in attaining design solutions in architecture.
PSO2	To understand the design complexity of the designed structure and use appropriate building construction techniques and technology for the particular structure

3.4 Bachelor of Commerce (B.Com) Program Educational Objectives

PEO NO	Description
PEO1	To produce best commerce (H) graduates in the country as well as in Global.
PEO2	To equip students with updated inputs in the field of accounting and finance
PEO3	To provide practical explore as per corporate needs through summer intern ship and industrial training.

Bachelor of Commerce (B.Com) Program Outcomes

PO NO	Description
PO1	Ability to understand the world of trade and commerce
PO2	Ability to apply the knowledge of Accounting, Finance and Taxation in the Global context
PO3	Ability to develop each graduate to be adept in identifying and understanding major trends in commerce in national and international level
PO4	Ability to develop each graduate to be a critical thinker and strong decision maker.
PO5	Ability to develop each graduate to be an effective and professional communicator.
PO6	An understanding of professional and ethical responsibility in business related issues
PO7	Knowledge of contemporary issues in finance and accountancy
PO8	A recognition of the need for and an ability to engage in life-long learning in commercial activities
PO9	Enhance the skills of students competent to deal with Accounting and Finance practices at global level
PO10	Develop commerce students as professional auditors and tax practitioners at national and international level

3.5 Bachelor of Pharmacy (Pharm) Program Educational Objectives

PEO NO	Description
PEO1	To produce pharmacist workforce competent for the society.
PEO2	To produce pharmacy graduates with employable skills and hightechnical Competencein pharmaceutical industry and health caresectors
PEO3	To inculcate research activity and develop passion for discovery and innovations
PEO4	To develop entrepreneurship qualities that support growth of pharmaceutical intellectualproperty and contribute for economic developmentthroughout the world

Bachelor of Pharmacy (Pharm) Program Outcomes

PO NO	Description
PO 1	Pharmacy Knowledge: Provide basic knowledge for understanding the principles and their applications in the area of Pharmaceutical Sciences and Technology.
PO 2	Technical Skills: Develop an ability to use various instrument and equipment with an in-depth knowledge on standard operating procedures for the same.
PO 3	Modern tool usage: Develop/apply appropriate techniques, resources, and IT tools including prediction and modeling to complex health issues and medicine effect with an understanding of the limitations.
PO 4	Research and Development: To demonstrate knowledge of identifying a problem, critical thinking, analysis and provide rational solutions indifferent disciplines of Pharmaceutical Sciences and Technology
PO 5	Lifelong Learning: Develop an aptitude for continuous learning and professional development with ability to engage in pharmacy practice and health education programs
PO 6	Communication: Communicate effectively on health care activities with the medical community and with society at large, to comprehend drug regulations, write health reports and provide drug information
PO 7	The Pharmacist and Society: Apply reasoning informed by the contextual knowledge to comprehend medical prescription, perform patient counselling and issue or receive clear instructions on drug safety and the consequent responsibilities relevant to the professional pharmacy practice.
PO 8	Ethics: Follow the code of ethics and commit to professional values and responsibilities and norms of the pharmacy practice.
PO 9	Environment and Sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 10	Pharmaceutical product development:Toapplytheknowledgeof manufacturing, formulation and quality control of various pharmaceutical and cosmetic products
PO 11	Competitive skills: Develop problem-solving skills and aptitude to participate and succeed in competitive examinations.
PO 12	Invention and Entrepreneurship: Application of technical skills to integrate health care systems, design an effective product with commercial advantage and societal benefit, perform risk analysis and become entrepreneur.

3.6 BSc Agriculture Program Outcomes

PONO	Description
PO1	Agricultural **Knowledge:** To impart the knowledge of agricultural science with respect to agronomical and horticultural crops and to develop skills to solve complex problems
PO2	**Analysing ability:** To be well versed with different methodologies of crop growth monitoring, soil analysis methods, plant protection analysis, production

	and processing of seed (both straight varieties and hybrids) of various crops, biochemical analytic methods and by collecting the data through various field and lab equipment
PO3	**Identify the solutions and problem-solving ability**: To identify various pests and disease of crops both field and Horticultural and suggest management strategies, which are location specific, environmentally safe, and economically sound
PO4	**Research Insight** : To be able to aid in Agricultural Research Systems in the areas of Crop Management, Crop Production, Irrigation Management, Weed Management and crop improvement programs involving both conventional and biotechnological approaches
PO5	**Modern tools (equipment /software's) usage**: To be able to effectively use software tools, statistical applications, mathematical packages/models expertise in techniques of Extension and modern tools of ICTs to analyse, interpret and by effectively handling the data and to draw valid conclusions thereon and to transfer Agriculture technologiesfor modernize Agriculture use
PO6	**Ethics:** ability to apply ethical principles and commit to professional ethics and responsibilities and norms in agricultural practice committing for organic farming methods with less environmental footprint
PO7	**Environment, Sustainability and Society at thought and deed**: Ability to demonstrate the agricultural solutions to contemporary issues by understanding their impact on societal and environmental contexts, towards sustainable development
PO8	**Individual and team work**: To develop individual competence, critical and complex problem solving skills to solve the practical problems in the field of Agriculture and to demonstrate the abilities to work in a team.
PO9	9**Communication**: To develop oral and written communication skills to articulate the agriculture technologies acting as liaison between Agricultural technologies and farmer community through effective modern communication approaches
PO10	**Project formulation and sourcing of finance**: To come out as a good Agro-entrepreneur, Farm Manager/Agribusiness Person with sound knowledge in rural credit flow, banking systems, farm/enterprise budgeting, project management, marketing, supply chain management, Agricultural Policies for Governments
PO11	**Life long learning and upgradation**: To be able to device and manage profitable location-specific farming systems through integration of different enterprises such as crops (Field, Horticultural, Fodder, Flower, medicinal, etc.), live-stock, Agro-forestry, fisheries, sericulture, Apiculture, etc. duly managing Agri-Resources by iteratively and continuously learning and implementing the solutions for effective implementation for sustainable Agriculture with less environmental footprints.

3.7 Bachelor of Science (Visual Communication) Program Educational Objectives

PEO NO	Description
PEO1	Graduate Apply appropriate communication skills across settings, purposes, and audiences.
PEO2	Graduates shall promote professionalism in the practice of Visual Communication.
PEO3	Graduates with sense of responsibility and rooted in community involvement with a global perspective.
PEO4	Participate as leaders in their fields of expertise and in activities that support service and economic development throughout the world.

Bachelor of Science (Visual Communication) Programme Outcomes

PO NO	Description
PO1	Building a solid foundation in the elements, principles and process of visual design.
PO2	Communicate effectively with clients and utilize the talents and strengths of design colleagues to develop the best design products.
PO3	Applying fundamentals to solve increasingly complex design problems in technologically innovative ways
PO4	Engage in critical analysis of their own and their peer's creative work.
PO5	Explore media, communication and dissemination techniques to entertain via written, oral and visual media.
PO6	Apply design principles to software in a manner that provides the skills to adapt to the newest technologies in expectation for the technologies which will emerge in the future.
PO7	Understanding of and ability to develop strategies for planning, producing, and disseminating visual communications.
PO8	Understand and prepare production management for artworks for hassle free delivery of works
PO9	Ability to carry out research study and fill in the void thus developing new dimensions in communications.
PO10	Engage in the practicing of ethical professionalism in the creative world

3.8 Bachelor of Arts (B.A) Program Educational Objectives

PEO NO	Description
PEO1	Graduate will be able to exhibits their skills in Literature and diverse literary works.
PEO2	A graduate student able to analyze the aspects of History, Geography, Public Administration and Economy
PEO3	Graduate will be to apply knowledge, information and research skills to complex problems in the field of Social Science and Humanities.

Bachelor of Arts (B.A) Program Outcomes

PO NO	Description
PO1	Provide knowledge and understanding of various fields of study in core disciplines in the Humanities and Social Sciences
PO2	Develop critical and analytical skills to identify and resolve of problems with in complex changing social, linguistic and literary context.
PO3	Understanding the general concepts and principles of selected areas of study outside core disciplines of the Humanities, Social Science and Languages
PO4	Follow independence in learning appropriate theories and methodologies with intellectual honesty and an understanding of ethical and human values
PO5	Encourage students to analyze the problems and apply this knowledge for remedies thereof
PO6	Enhance student's skills of effective communication and language learning i.e. reading, writing, listing and speaking another language with fluency and understand its cultural value.
PO7	Become well informed and updated member of the community and responsible citizen
PO8	Work with self esteem, self reliance, self reflection and creativity to face adversities in the work and personal life
PO9	Inculcate leadership and administrative abilities for their future career
PO10	Increase inclination for higher studies and research in social sciences and Gain comprehensive knowledge to succeed in competitive examinations

3.9 Bachelor of Business Adminstration Program Educational Objectives

PEO NO	Description

PEO1	To educate the business graduates to respond effectively in meeting the competitive business needs of the society.
PEO2	To nurture the spirit of Entrepreneurship among the students that propagates the business world.
PEO3	To train the students in emerging as efficient managers equipped with innovation, rationality and application oriented decision-making in the context of the ever-changing business environment.

Bachelor of Business Adminstration Program outcomes (pos)

PONO	Description
PO1	Core Business Knowledge Demonstrate competency in the underlying concepts, theory and tools taught in the core undergraduate curriculum.
PO2	Critical Thinking skills Able to define analyze and devise solutions for multifunctional business problems and issues in the areas like Marketing, Finance, Human Resources and Production.
PO3	Global Perspective Identify and analyze relevant global factors that influences decision making in International Business Perspective
PO4	Investigation of complex problems An ability to use research-based knowledge and research methods including design of innovative processes, analysis and interpretation of data and synthesis of the information to obtain solutions to organizational problems
PO5	Application of Statistical and Analytical tools Ability to create, select and apply appropriate analytical tools, techniques and methods in the modern management activities.
PO6	The Manager and society Ability to apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional management practices.
PO7	Legal Environment and sustainability Ability to demonstrate the knowledge of contemporary issues in legal aspects, understanding and reporting their impact on societal and environmental contexts, leading towards sustainable organizational development through entrepreneurial orientation.
PO8	Ethics & Corporate Social Responsibility An ability to apply ethical principles and commit to professional ethics and responsibilities and norms of management practice. Identify and analyze ethical conflicts and social responsibility issues involving different stakeholders.
PO9	Individual and Teamwork An ability to perform different roles effectively as an individual and a member or leader in diverse teams and in multi-disciplinary streams with entrepreneurial edge.
PO10	Communication Ability to communicate effectively oral, written reports and graphical forms on complex managerial and administrative activities.
PO11	Project Management and Finance Ability to demonstrate knowledge and understanding of the business and operational activities and having sound knowledge in the financial aspects and applying those concepts to manage projects in multi-disciplinary environments.

PO12	Lifelong Learning An ability to recognize the need for and having the preparation and ability to engage independent and life-long learning in global context of technological and organizational change.

3.10 Bachelor of Business Administration – Bachelor of Law (BBA- LLB) Program Education Outcomes (PEOs)

PEO NO	Description
PEO1	Should be able to stimulate compassion and creativity in the field of legal profession.
PEO2	Strengthen intellectual growth and the capacity to develop ingenious and conscientious legal solutions to unique and varying tribulations of society and business environment
PEO3	Acquire leadership capabilities necessary for the competent practice of law and lifelong learning in practice
PEO4	Pursue advanced education, research and development, and other innovative and pioneering efforts in the field of law

Bachelor of Business Administration– Bachelor of Law (BBA- LLB) Program Outcomes

PO NO	Description
PO1	Ability togain knowledge of law and the application of such knowledge in practice
PO2	Be proficient in using the fundamentals and vital principles in law.
PO3	Identify and solve the social, economic and cultural issues in law.
PO4	Ability to synthesis academic knowledge to legal problems and find solutions.
PO5	Recognize the ethical and professional responsibilities and the norms of advocacy.
PO6	Ability to research, review, comprehend and utilize such knowledge for Law reform.
PO7	Converse effectively and work in inter-disciplinary groups and legal institutions.
PO8	To guide the trainee legal practitioners in the right direction.
PO9	Ability to understand the real-life situation in the legal profession and practice.
PO10	To make the student to learn aesthetically pleasing practice and make it socially relevant.

Bachelor of Business Administration– Bachelor of Law (BBA- LLB) Programme Specific Outcomes

PSO NO	Description
PSO1	To equip skills required to deal with a fast-changing business environment and legal arena.

PSO2	To acquaint with technological developments and to make suitable changes in the field of law and legal profession.

3.11 Bachelor of computer applications (BCA) Program Educational Objectives

PEO NO	Description
PEO1	Practice Computer Applications in a broad range of industrial, societal and real world applications.
PEO2	Pursue advanced education, research and development, and other creative and innovative efforts in science, engineering, and technology, as well as other professional careers
PEO3	Conduct them in a responsible, professional, and ethical manner.

Bachelor of computer applications (BCA) Program Outcomes

PONO	Description
PO1	**Problem Analysis: Ability** to identify, formulate, research literature, and analyze complex computer application-oriented problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and computer applications.
PO2	**Design / development of solutions: Ability** to design solutions for complex computer application problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations.
PO3	**Conduct investigations of complex problems: Ability** to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO4	**Modern tool usage: Ability** to create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding ofthe limitations.
PO5	**Communication: Ability** to communicate and engage effectively with diverse stakeholders.
PO6	Ability to apply ethical principles and commit to professional ethics and responsibilities.
PO7	**Life-long learning**: Ability to recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
PO8	**Individual and teamwork**: Ability to function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Bachelor of computer applications (BCA) Programme Specific Outcomes

Cloud Technology and Information Security	
PSO1	An ability to use and develop cloud software, administrative features. Infrastructure services and architectural patterns; ethical hacking and forensic security technologies.
PSO2	An ability to gain knowledge on design and control strategy; techniques to secure information and adapt to the fast changing world of information technology needs.
Data Science	
PSO1	Ability to apply the knowledge of computing tools and techniques in the field of Data science for solving real world problems encountered in the Software Industries.
PSO2	Ability to identify the challenges in Data analytics with respect to IT Industry and pursue quality research in this field with social relevance.

3.12 Bachelor of Science (Hotel Management) Program Education Outcomes

PEO NO	Description
PEO1	Make students to be leaders in hospitality industry through industry immersion and national and international linkages in order to support business in the field ofrelevance.
PEO2	To intensify student`s knowledge and skills with instruction based on international standards, to produce quality graduates with balanced knowledge, skills and industry exposure in catering, hotel and management.
PEO3	Inculcate leadership skills needed for integration of hotel and restaurant development, to demonstrate community involvement in travel and tour operation, airlines and other related industries to strengthen their knowledge and skills.

Bachelor of Science (Hotel Management) Program Outcomes

PONO.	Description
PO 1	Technical Knowledge Knowledge of techniques and equipment for planting, growing, and harvesting food products (both plant and animal) for consumption, including storage/handlingtechniques.
PO 2	Quality / Cost control Knowledge of raw materials, production processes, quality control, costs, hygiene and sanitation and other techniques for maximizing the effective manufacture and distribution of goods.
PO 3	Strategic Planning Knowledge of business and management principles involved effectively in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
PO 4	Customer Service Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction

PO 5	Financial Principles Knowledge of economic and accounting principles and practices, the financial markets, banking, analysis and reporting of financial data involved in industrial sectors.
PO 6	Individual and teamwork Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
PO 7	Communication Knowledge of the structure and content of different language including the meaning and spelling of words, rules of composition, and grammar.
PO 8	Marketing Strategy Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
PO 9	Safety Measures Knowledge of principal methods of cleaning, controlling, recycling process, maintenance of equipment's, latest technology and its usage, safety measures to be taken in the hotel industry.
PO10	Tourism Industry Knowledge on Tourism, hospitality industry history, sales, promotions, Audit, general knowledge, share market, excellent skill to communicate and computer knowledge

3.13 LL.B Program Outcomes:

PO NO	Description
PO1	Ability to gain knowledge of law and the application of such knowledge in practice
PO2	Be proficient in using the fundamentals and vital principles in law
PO3	Identify and solve the social, economic and cultural issues in law
PO4	Ability to synthesis academic knowledge to legal problems and find solutions
PO5	Recognize the ethical and professional responsibilities and the norms of advocacy
PO6	Ability to research, review, comprehend and utilize such knowledge for Law reform
PO7	Ability to understand the real-life situation in the legal profession and practice
PO8	To make the student to learn aesthetically pleasing practice and make it socially relevant

LL.B Programme Specific Outcomes

PSO NO	Description
PSO1	equip skills required to deal with a fast-changing business environment and legal arena
PSO2	To acquaint with technological developments and to make suitable changes in the field of law and legal profession

3.14 Master of Arts (English) Program Educational Objectives

PEO NO	Description
PEO1	Introduce students to the professional conversation in English studies in various fields and to texts from diverse eras and cultures, with the intention of provoking and supporting their intellectual curiosity and valuing literature, language, and imagination: Students will develop a passion for literature and language. They will appreciate literature's ability to elicit feeling, cultivate the imagination, and call us to account as humans. They will cultivate their capacity to judge the aesthetic and ethical value of literary texts–and be able to articulate the standards behind their judgments.
PEO2	Critical Approaches: Students will develop the ability to read works of literary, rhetorical, and cultural criticism, and deploy ideas from these texts in their own reading and writing. They will express their own ideas as informed opinions that are in dialogue with a larger community of interpreters and understand how their own approach compares to the variety of critical and theoretical approaches.
PEO3	Research Skills: Students will be able to identify topics and formulate questions for productive inquiry; they will identify appropriate methods and sources for research and evaluate critically the sources they find; and they will use their chosen sources effectively in their own writing, citing all sources appropriately.

Master of Arts (English) Program Outcomes

PO Number	Description
PO1	Gain an introductory knowledge of some of the issues explored in influential works in English language and the stylistic strategies that writers used to explore those issues.
PO2	Read complex texts actively: recognize key passages; raise questions. appreciate complexity and ambiguity; comprehend the literal and figurative uses of language.
PO3	Appreciate literary form: recognize how form and structure shape a text's meaning; appreciate how genre generates expectations and shapes meanings.
PO4	Interpret texts with an awareness of and curiosity for other viewpoints
PO5	Practice writing as a process of motivated inquiry, engaging other writers ideas using quotations, paraphrase, allusions and summary. Use sources well and cite them correctly.
PO6	Attend to a wider range of voices within inter culturation.
PO7	Enjoy the experience of reading challenging literature: appreciate literature's ability to elicit feeling, cultivate the imagination, and call us to account as humans

3.15 Master of Sciences (M.Sc AppliedMathematics) Program Educational Objectives

PEO NO	Description
PEO1	To assimilate and understand a large body of complex concepts and their interrelationships.
PEO2	Apply Advanced Mathematical Techniques to formulate, solve and analyze mathematical models of real-life problems
PEO3	To identify and apply suitable computational mathematical tools and techniques to solve various complex Engineering problems and meaningful physical interpretation.
PEO4	To Demonstrate, communicate, and work, with people having diversified backgrounds in individual and group settings, in an ethical and professional manner.

Master of Sciences (M.Sc AppliedMathematics) Program Outcomes

PONO	Description
PO1	To identify, formulate, abstract, and solve mathematical problems that use tools from a variety of mathematical areas, including algebra, analysis, probability, numerical analysis and differential equations
PO2	The program prepares students for a variety of mathematical careers. The current program has three identified tracks viz: Cryptography, Data analysis, Applied Mechanics, and Ph.D preparation. Students should be prepared for employment requiring mathematical skill and sophistication at the master's level.
PO3	Apply mathematics and technology tools (MATLAB, R, and MINITAB) to solve problems.
PO4	Ability to do research in a particular topic agreed with a supervisor, on which the student publishes a research paper in a peer reviewed indexed journal.
PO5	To maintain a core of mathematical and technical knowledge that is adaptable to changing technologies and provides a solid foundation for lifelong learning.
PO6	Promote interdisciplinary research among allied subjects related to applied mathematics
PO7	Use symbolic and numerical software as part of practical computation.

3.16 Master of Sciences (M.Sc Chemistry) Program Education Outcomes

PEO NO	Description
PEO1	To prepare students for successful practice in diverse fields of Chemical Sciences such as pharmaceutical, chemical, polymer / advanced material,energy, biotechnology and environmental engineering and in the fields of Societal expectations on time.

PEO2	To prepare students for advanced studies in Chemical sciences and its allied fields.
PEO3	To ensure our students to achieve excellence and get selected for high-ranking industrial, academic, Government and other professional positions, as well as to inculcate leadership qualities.
PEO4	To develop graduate's skills and awareness to become socially, ethically and morally responsible individual in all the challenges they take over, in our communities and in the field of chemical Sciences.

Master of Sciences (M.Sc Chemistry) Program Outcomes

PONO	Description
PO1	Ability to understand the scope and principle of Chemistry.
PO2	Ability to understand and implement complex chemical equations and chemical compositions.
PO3	Ability to analyze the outcomes of experiments on chemicals and their product
PO4	Ability to understand the chemicals deeply and their effects on environment and health.
PO5	Ability to connect the latest developments in Chemistry with the knowledge attained during academics and come up with better ideas.
PO6	Awareness of the impact of Chemistry in all domain of the society including environment, manufacturing, and production, etc.
PO7	Use modern techniques, decent equipments and Chemistry software's

Master of Sciences (M.Sc Chemistry) Programme Specific Outcomes

PSO NO	Description
PSO1	Global level research opportunities to pursue Ph.D programme targeted approach of CSIR – NET examination.
PSO2	Enormous job opportunities at all level of chemical, pharmaceutical, food products, life oriented material industries
PSO3	Specific placements in R & D and synthetic division of polymer industries & Allied Division
PSO4	Discipline specific competitive exams conducted by service commission.

3.17 Master of Sciences (M.Sc Physics) Program Educational Objectives

PEONO	Description
PEO1	To develop strong student competencies in Physics and its applications in a technology-rich, interactive environment.
PEO2	To develop strong student skills in research, analysis and interpretation of complex information

PEO3	To prepare the students to successfully compete for employment in Electronics, Manufacturing and Teaching and to offer a wide range of experience in research methods, data analysis to meet the industrial needs

Master of Sciences (M.Sc Physics) Program Outcomes

PONO	Description
PO1	Ability to understand the scope and principle of Physics.
PO2	Ability to solve the physical problems by applying physics principles
PO3	Ability to analyze the outcomes of Physics and electronics experiments and their product.
PO4	Ability to demonstrate the knowledge in physics for managing the physics projects effectively.
PO5	Ability to connect the latest developments in Physics with the knowledge attained during academics and come up with better ideas
PO6	Ability to do research in the fields related to Materials and Electronics.
PO7	Ability to understand and solve the complexity of Solid state physics.

3.18 Master of Sciences (Finance &Control) Program Educational Objectives

PEO NO	Description
PEO1	To produce best Post graduates in Finance & Control in the country as well as in Global.
PEO2	To equip students with updated inputs in the field of accounting and finance
PEO3	To provide practical explore as per corporate needs through summer intern ship and Finance Research project

Master of Sciences (Finance &Control Program Outcomes:

PONO	Description
PO1	Develop each Post – Graduate student to be adept in identifying and understanding major trends in business environment both locally and globally
PO2	Develop Post-graduate student to be a critical thinker and strong decision maker.
PO3	Develop Post-graduate student to be an effective and professional communicator.
PO4	Create an atmosphere by which the student can become a professional entrepreneur
PO5	Enhance the ability and skills of entering into corporate world
PO6	This program would open doors for the students to enter into research and development field.
PO7	Ability to create effective professionals in the area of accounting, finance and taxation

3.19 Master of Business Administration (MBA) Program Educational Objectives

PEO NO	Description
PEO1	Make students to apply techniques of business analysis, data management and problem-solving skills in order to support business management decision-making in the field of relevance.
PEO2	Inculcateleadershipskillsneededforimplementing andcoordinating organizational activities and managing change to explore business problems in depth for developing their functional knowledge to think strategically and to lead, motivate and manage teams across borders
PEO3	Nurture with abilities to integrate business knowledge and management techniques to aid planning and control in a changing environment and to enhance better career paths.

Master of Business Administration (MBA) Program Outcomes

PO NO	Description
PO1	Core Business Knowledge: Able to synthesize the knowledge, management skills, and tools acquired in the program, which will be helpful to shape the organizations effectively.
PO2	Career Planning and Decision Making: Able to excel in their chosen career paths, by learning on how to live, adapt and manage business environmental change through decision making.
PO3	Critical Thinking and Leadership :Able to reflect upon and explore business and research problems in depth, to demonstrate leadership skills and to demonstrate ability to pursue new knowledge necessary to succeed in dynamic domestic and international business environments.
PO4	Manager & Society: Able to emerge as efficient managers equipped with innovation, rationality and application-oriented decision-making in the context of the ever-changing business environment.
PO5	Team Building & Business Communication: Able to communicate effectively and to perform different roles efficiently as an individual or in a team in multi-disciplinary streams with entrepreneurial edge.
PO6	Business perspective and Sustainability: Able to gain an understanding of professional, legal, financial, marketing, production & operational activities, logistics, ethical, social issues and responsibilities
PO7	Application of Statistical and Analytical tools: Able to gain knowledge of contemporary issues and develops an art of using current techniques, skills and necessary analytical tools for managerial practice.

3.20 Master of Pharmacy (M.PHARM) – PHARMACEUTICS Programme Educational Objectives

PEO NO	Description
PEO1	**Knowledge & Understanding:** The pharmacy students should possess upon graduation, knowledge of pharmaceuticals, medication use and their safety and effectiveness.
PEO2	**Skill:** The graduate should be able to demonstrate his skills in providing quality pharmaceuticals, drug information and therapy including legal and ethical aspects.
PEO3	**Attitude:** The graduate should be able to inculcate the current knowledge, changes in technology, continuous upgrading of professional information and participation in implementation of National health programmes.

Master of Pharmacy (M.PHARM) – PHARMACEUTICS Programme Outcomes

PO NO	Description
PO1	**Pharmaceutical Sciences Knowledge:** Apply the knowledge of mathematics, science, pharmaceutical physical properties of the different pharmaceutical ingredients and the factor influencing them is very valuable for pharmaceutical dosage form design. Enables the students to learn about different packaging materials used in pharmaceutical industry and the factors governing their use.
PO2	**Unit Operations:** Pharmaceutical engineering renders knowledge about the basic unit operations that are taking place in pharmaceutical industry and the different factors associated with it. This information is useful for both pharmaceutics and pharmaceutical engineering.
PO3	**Entrepreneurship:** The knowledge on different pharmaceutical dosage forms are imparted on students. This knowledge comes while handling a pharmacy or a manufacturing unit or in the further courses.
PO4	**Design/Development of solutions:** The information on solid dosage forms like tablets and capsules, their formulation and quality control serves as an important perquisite for dosage form design.
PO5	**Application oriented Knowledge:** The knowledge of bio-pharmaceutics enables the students to visualize the effect of pharmacokinetic (ADMET) parameters on the biological effect of the drug. The correlation of pharmacokinetics and pharmacodynamics is thus introduced and is experimentally explained to them.
PO6	**Conduct investigations of complex problems:** To understand biopharmaceutical principles and pharmacokinetic principles through different compartment models, multiple dosage regimens, non-linear pharmacokinetics, and assessment of bioavailability and bioequivalence.
PO7	**Effective Citizenship:** Demonstrate empathetic social concern and equity centered national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
PO8	**Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

PO9	**Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
PO10	**Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

Master of Pharmacy (M.PHARM) – PHARMACEUTICS Program Specific Outcomes

PSO NO	Description
PSO1	**Knowledge and skills:**To impart knowledge and skills on criteria for formulation design, product development, evaluation, and optimization for better therapeutic efficacy.
PSO2	**Research & Career:**To create a talent pool by involving students in research projects and to make students to undertake research projects for scientific contribution to society. To foster ambitious desire among students to undertake higher studies, career growth and life-long learning.
PSO3	**Entrepreneurship:** Set-up pharmaceutical production unit to design and formulate pharmaceutical dosage forms.Validate the knowledge and skills gained through education to gain recognition in Pharmaceutical society and related field.

3.23 Doctor of Pharmacy (PHARM.D)Programme Educational Objectives

PEO NO	Description
PEO1	To provide a comprehensive pharmaceutical education leading to Doctor of Pharmacy (Pharm. D.) degree.
PEO2	To provide hands on training through state of art infrastructure to meet challenges of drug discovery and pharmaceutical care.
PEO3	To integrate knowledge and skills with clinical research to promote health care.
PEO4	Understand and appreciate the role of health care education in the development of society and on mankind's welfare.To inculcate leadership capabilities as member of health care team.

Doctor of Pharmacy (PHARM.D) Programme Outcomes

PO NO	Description
PO1	**Life Sciences Knowledge:** Impart fundamental knowledge of physiology, anatomy, formulation science, and applied biochemistry, Chemistry of organic and inorganic compounds as per the monographs.
PO2	**Pathology and Pharmacology Knowledge:** Impart a thorough knowledge of relevant aspects of pathophysiological mechanisms, application of microbiology in pharmacy field, medical uses of natural drugs, and Pharmacological aspects of drugs.

PO3	**Community Pharmacy Knowledge:** To improve skills such as dispensing of drugs, ensure safe medication usage, patient counseling and improve patient care in community pharmacy set up.
PO4	**Clinical Pharmacist Knowledge:** To enhance practical clinical discussions, attending ward rounds, follow-up progress of patients, case presentation at discharge are imbibed through hospital postings. Participation in hospital camps, disease awareness programs will inculcate the social responsibility of the clinical pharmacists.
PO5	**Environment and Sustainability:** To understand the instrumental techniques applied in Good Laboratory Practice and following ICH-GCP guidelines, total quality management, quality review and documentation and study of regulatory bodies such as Drugs and Cosmetics Act, CDSCO guidelines, pertaining to regulatory environment.
PO6	**Design/Development of solutions:** To study the modern concept of rational drug design such as Quantitative Structure Activity Relationship, Computer Aided Drug Design and concept of antisense molecules .
PO7	**Investigations of Complex Problems:** To understand biopharmaceutical principles and pharmacokinetic principles through different compartment models, multiple dosage regimens, non-linear pharmacokinetics, and assessment of bioavailability and bioequivalence.
PO8	**Toxicology Knowledge:** To understand the toxicological aspects of individual class of xenobiotics such as pesticides, opiates, NSAIDs, Caustics, radiation, heavy metals, plant, food poisonings, snake bites, and envenomations.
PO9	**Ethics:** To understand the clinical aspects of drug development, such as phases, ethical issues, and roles and responsibilities of clinical trial personnel, design of clinical study documents, data management and safety monitoring in clinical trials.
PO10	**Problem Analysis and Learning:** In house scientific and social poster competition, Case study presentations, prescription auditing, and contribution to drug information centre.

Doctor of Pharmacy (PHARM.D) Program Specific Outcomes

PSO NO	Description
PSO1	Preparation of individualized therapeutic plans based on diagnosis, monitoring therapy, through identification of alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects.
PSO2	To detect, assess, and monitor adverse drug reactions, interpret selected laboratory results of specific disease states, retrieve, analyze, interpret and formulate drug or medicine information. To apply the pharmacoepidemiological methods like drug utilization review, cohort studies, meta-analysis, prescription event monitoring and study on vaccine safety, risk management and drug induced birth defects, pharmacoeconomic evaluation for cost minimization, cost-benefit, cost-effectiveness, and cost-utility evaluations.
PSO3	To improve patient care in performing medication history, interpretations of laboratory data of biological samples, identifying potential-drug related influences of Pharmacotherapy. To contribute for research and progress in higher studies, career, or entrepreneurship.

CHAPTER 4

ACADEMIC REGULATIONS

This document supplements the KLEF rules and regulations to assist all students. It is required that every individual must abide by these regulations.

Note: The regulations stated in this document are subject to change or can be relaxed / modified without prior notice at the discretion of the Hon'ble Vice Chancellor.

Terminology

Academic Council: The Academic Council is the highest academic body of the University and is responsible for the maintenance of standards of instruction, education and examination within the University. The Academic Council is an authority as per UGC regulations and it has the right to take decisions on all academic matters including academic research.

Academic Year: It is the period necessary to complete an actual course of study within a year. It comprises of two consecutive semesters i.e., Even and Odd semester.

Audited Course: It is a course of study which has zero credits and has a "Satisfactory" or an "Unsatisfactory" grade.

Backlog Course: A course is considered to be a backlog if the student has obtained a failure grade (F).

Basic Sciences: The courses of foundational nature in the areas of Mathematics, Physics, Chemistry, Biology etc., are offered in this category.

Betterment: Betterment is a way that contributes towards improving the students' grade in any course(s). It can be done by either (a) re-appearing or (b) re-registering for the course.

Board of Studies: Board of Studies (BOS) is an authority as defined in UGC regulations, constituted by Vice Chancellor for each of the department separately. They are responsible for curriculum design and update in respect of all the programs offered by a department.

Branch of Study: It is a branch of knowledge, an area of study or a specific program (like Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering etc.)

Certificate course: It is a course that makes a student gain hands-on expertise and skills required for holistic development. It is a mandatory, non-credited course for the award of degree.

Change of Branch: Change of branch means transfer from one's branch of study to another.

Compulsory course: Course required to be undertaken for the award of the degree as per the program.

Course: A course is a subject offered by the University for learning in a particular semester.

Course Handout: Course Handout is a document which gives a complete plan of the course. It contains the details of the course viz. Course title, Course code, Pre-requisite, Credit structure, team of instructors, Course objectives, Course rationale, Course Outcomes and the relevant syllabus, textbook(s) and reference books, Course delivery plan and session plan, evaluation method, chamber consultation hour, course notices and other course related aspects. In essence, course handout is an agreement between students (learners) and the instructor.

Course Outcomes: The essential skills that need to be acquired by every student through a course.

Credit: A credit is a unit that gives weight to the value, level or time requirements of an academic course. The number of 'Contact Hours' in a week of a particular course determines its credit value. One credit is equivalent to one lecture hour per week or two hours per week of tutorials/ self-learning/ practical/ field work during a semester.

Credit point: It is the product of grade point and number of credits for a course.

Credit Transfer: The procedure of granting credit(s) to a student for course(s) undertaken at another institution.

Cumulative Grade Point Average (CGPA): It is a measure of cumulative performance of a student over all the completed semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

Curriculum: Curriculum is a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. Curriculum is the central guide for all educators as to what is essential for teaching and learning, so that every student has access to rigorous academic experiences.

Degree: A student who fulfils all the Program requirements is eligible to receive a degree.

Degree with Specialization: A student who fulfills all the Program requirements of her/his

discipline and successfully completes a specified set of Professional elective courses in a specialized area is eligible to receive a degree with specialization.

Department: An academic entity that conducts relevant curricular and co-curricular activities, involving both teaching and non-teaching staff and other resources.

Detention in a course: Student who does not obtain minimum prescribed marks in continuous in-semester evaluation and /or minimum prescribed attendance in a course shall be detained in that course.

Dropping from the Semester: A student who doesn't want to register for the semester should do so in writing in a prescribed format before commencement of the semester.

Elective Course: A course that can be chosen from a set of courses. An elective can be Professional Elective, Open Elective, Management Elective and Humanities Elective.

Engineering Sciences: The courses belonging to basic evolutionary aspects of engineering from Mechanical Sciences, Electrical Sciences and Computing like Engineering Mechanics, Data structures, Network Theory, Signal Analysis etc...

Evaluation: Evaluation is the process of judging the academic work done by the student in her/his courses. It is done through a combination of continuous in-semester assessment and semester end examinations.

Grade: It is an index of the performance of the students in a said course. Grades are denoted by alphabets.

Grade Point: It is a numerical weight allotted to each letter grade on a 10 - point scale.

Honors Degree: A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of additional courses within the same program is eligible to receive an Honors degree.

Humanities Elective: A course offered in the area of <mark>Liberal Arts</mark>.

Industrial Training: Training program undergone by the student as per the academic requirement in any company/firm. It is a credited course.

Industrial Visit: Visit to a company/firm as per the academic requirement.

In-Semester Evaluation: Summative assessments used to evaluate student learning, acquired skills, and academic attainment during a course.

Make-up Test: An additional test scheduled on a date other than the originally scheduled date. <mark>(Describe elaborately)</mark>

Management elective: A course that develops managerial skills and inculcates entrepreneurial skills.

Minor Degree: A student who fulfills all the Program requirements of her/his discipline

and successfully completes a specified set of courses from another discipline is eligible to receive a minor degree in that discipline.

Multi- Section Course: Course taught for more than one section.

Open Elective: This is a course of interdisciplinary nature. It is offered across the University for All Programs.

Over loading: Registering for more number of credits than normally prescribed by the Program in a semester.

Practice School: It is a part of the total program and takes one full semester in a professional location, where the students and the faculty get involved in finding solutions to real-world problems. A student can choose Project/Practice School during his/her 7th or 8th semester of his/her Academic Year to meet the final requirements for the award of B.Tech degree.

Pre-requisite: A course, the knowledge of which is required for registration into higher level course.

Professional Core: The courses that are essential constituents of each engineering discipline are categorized as Professional Core courses for that discipline.

Professional Elective: A course that is discipline centric. An appropriate choice of minimum number of such electives as specified in the program will lead to a degree with specialization.

Program: A set of courses offered by the Department. A student can opt and complete the stipulated minimum credits to qualify for the award of a degree in that Program.

Program Educational Objectives: The broad career, professional, personal goals that every student will achieve through a strategic and sequential action plan.

Project: Course that a student has to undergo during his/her final year which involves the student to undertake a research or design, which is carefully planned to achieve a particular aim. It is a credit based course.

Supplementary: A student can reappear only in the semester end examination for the Theory component of a course, subject to the regulations contained herein.

Registration: Process of enrolling into a set of courses in a semester/ term of the Program.

Re-Registration : Student who are detained in courses due to attendance or marks criteria as per their regulation are given a chance to re-register for the same and complete it during the summer term.

Semester: It is a period of study consisting of 15 to 18 weeks of academic work equivalent

to normally 90 working days including examination and preparation holidays. The odd Semester starts normally in July and even semester in December.

Semester End Examinations: It is an examination conducted at the end of a course of study.

Single Section Course: Course taught for a single section.

Social Service: An activity designed to promote social awareness and generate well- being; to improve the life and living conditions of the society.

Student Outcomes: The essential skill sets that need to be acquired by every student during her/his program of study. These skill sets are in the areas of employability, entrepreneurial, social and behavioral.

Substitution of Elective course: Replacing an elective course with another elective course as opted by the student.

Summer term: The term during which courses are offered from May to July. Summer term is not a student's right and will be offered at the discretion of the University.

Term Paper: A 'term paper' is a research report written by students that evolves their course-based knowledge, accounting for a grade. Term paper is a written original research work discussing a topic in detail. It is a credit-based course.

Under-loading: Registering for lesser number of credits than normally prescribed for a semester in that Program.

Course Withdrawal: Withdrawing from a Course means that a student can drop from a course within the first two weeks of the odd or even Semester (deadlines are

different for summer sessions). However, s/he can choose a substitute course in place of it by exercising the option within 5 working days from the date of withdrawal.

Chapter 5

ACADEMIC ISTRUCTIONS

5.1 General Behavior

a. Student should communicate in English with faculty and other students while he/ she is in campus.

b. Students are expected to wish/greet all officials of the KLEF with due respect.

c. Students should be courteous and polite while communicating with all Faculty &staff.

d. Students should maintain silence and/or speak in a polite way in and around the classrooms, library, laboratories, and offices of the Deans, Program Chairs, Senior Officials, faculty rooms and corridors of academic buildings. It must be noted that shouting, talking in loud voice or in chorus, using indecent, abusive and discourteous language anywhere within the institution premises are considered serious acts of indiscipline and are punishable.

e. Students should not loiter during the free time in the university campus.

f. Students should not issue any public or press statement, send letters to editors, government, public servants or notaries without prior permission and approval of the Registrar of KLEF in writing.

g. Students should keep the status, dignity, prestige and reputation of KLEF high and not engage in anything that might directly or indirectly undermine the standing of the institution.

h. Students must always adhere to a prescribed/decent dress code befitting the dignity of a technical/professional student within the campus.

i. Ragging of any student is a serious act of indiscipline and has been totally banned by the Hon'ble Supreme Court of India. A student found involved in any form of ragging, verbal or physical, inside or outside the institutional campus, hostels, or buses shall be treated as per the anti-ragging rules of the KLEF.

j. Students must not be involved in quarreling or fighting or any indecent verbal or physical activity among themselves, or with staff and faculty or visitors. Direct or indirect involvement in any such activity will be considered as serious breach of discipline and strict disciplinary action will be taken against the students that engage in such activities.

k. Students are not allowed to sit on the steps, boundary walls on the higher floors

of any building, or engage in gossiping, making noise or any other such activity.

5.2 KLEF Working Hours

KLEF operates between 7:20 AM to 5.00 PM (in shifts) on all weekdays.

5.2.1 Class Environment

The institute is a community of learners. Students have a responsibility of creating and maintaining an environment that supports effective learning to receive effective instructions in classrooms and laboratories. KLEF expects students to conduct themselves in an orderly and cooperative manner by adhering to University Rules & Regulations.

5.2.2 Laboratory Environment

A conducive learning environment in the laboratory is essential and the students are advised to follow the guidelines mentioned below:

l. Always listen carefully to the faculty especially for the safety precautions to take in the laboratories. Accidents resulting in injuries may occur if precautions are not taken.

m. Eating in laboratories is strictly prohibited.

n. Proper dress code is to be followed as prescribed by faculty in each lab.

o. Students should familiarize themselves with the location of all the safety equipment which may be available.

p. Follow evacuation procedures quickly and quietly, if needed.

q. Students should always conduct themselves in a responsible and cautious manner. Risky behaviors such as pushing, running, jumping etc., are unwarranted.

r. Only materials required to complete and record the experiment instructions, (e.g. pencils or graph paper, etc.) should be brought into the laboratory.

s. Equipment must be carefully handled to prevent breakage or damage, otherwise appropriate penalties/disciplinary-action may believed/imposed.

t. Lab station must be cleaned prior to leaving a lab.

u. Any accident, no matter how small or big, must be reported to the concerned faculty immediately.

5.3 Registration Process

For every course, the student must undertake the registration process prior to commencement of the coursework, based on the following conditions.

a. Registration into a course will be permitted only for such courses, which are offered by KLEF in that semester.

b. A student must clear the pre-requisite(s) if any, to register into a course.

c. KLEF reserves the right to register.

d. Registration for add/drop/change of a course will be permitted only within one week from the scheduled date of commencement of classes.

e. Students can register up to a maximum of 32 credits of their choice in a semester to meet their program requirements.

f. Students, who wish to register for additional credits through Overloading or less credits through Under loading, must seek prior permission from Dean-Academics.

g. Students who have opted for minor degree, Honors degree, can register for a greater number of credits in a semester through Overloading (subjected to guidelines appropriate to compliance on eligibility) .

h. KLEF reserves the right to withdraw within one week of the commencement of the semester any elective course offered, if adequate number of students have not registered or for any other administrative reasons. In such cases, the students are permitted to register for any other elective course of their choice provided they have fulfilled the eligibility conditions.

   KLEF reserves the right to cancel the registration of a student from a course or a semester or debar from the degree on disciplinary / plagiarism grounds.

i. A student is solely responsible to ensure that all conditions for proper registration are satisfied. If, there is any clash in the timetable, it should be immediately brought to the notice of the Department Year coordinator for necessary corrective action. The registration may be cancelled for a course or the entire semester either by KLEF if any irregularity is found at a later stage.

Student Course Registration Process:

This menu option is available for Students Only.

To complete the student registration, student login to new ERP portal with their valid login credentials. After login student should click on Academic Registrations Student Course Registration. Now Student can view the courses and sections in dropdown menus. Student can select the sections against the courses on their own

choice as mentioned in the following screen shot. Student can view the timetable on top of the selection of each course and section.
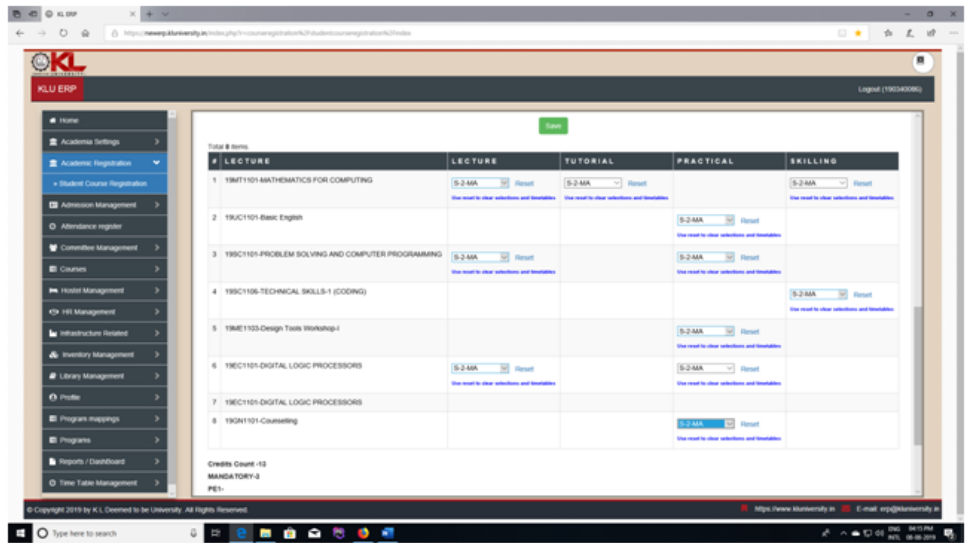
After completing the selection student need to click on Save to save the timetable, it will be directed to the following screen shot
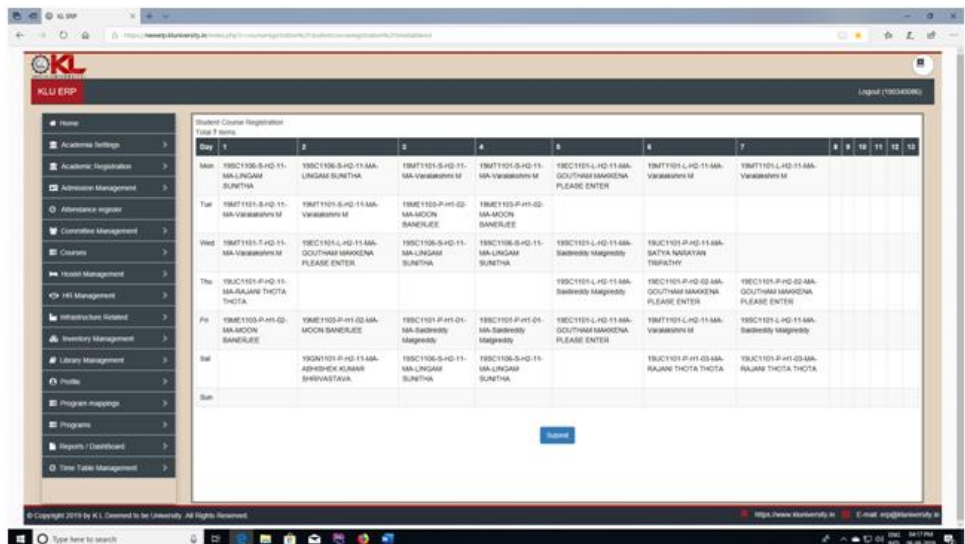
After duly verifying the timetable student needs to click on Submit to complete the Registration process
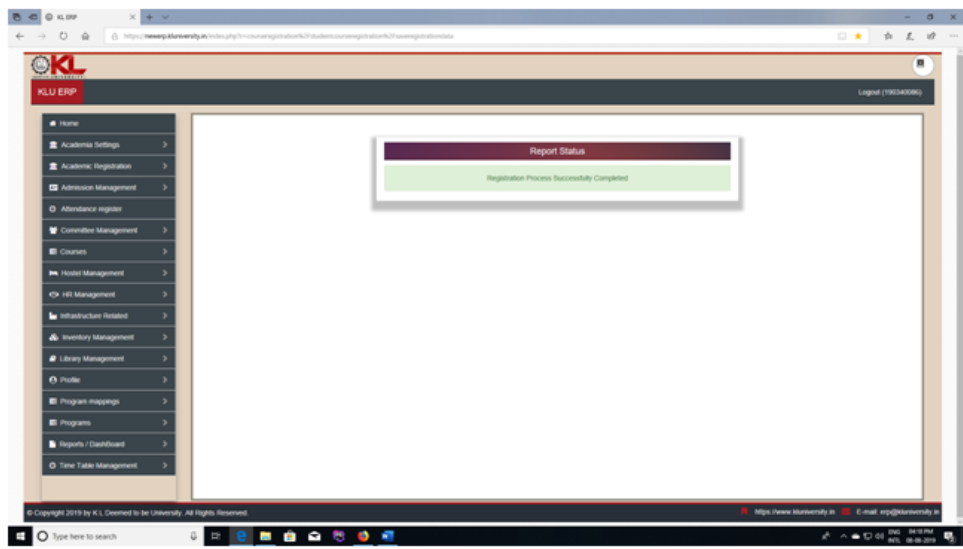
After Clicking the Submit the above screen will be displayed and contains the message "Student Registration Successfully Completed".

CHAPTER 6

Requirements for the award of Degree

For all Programs the following are the requirements

✓ The student should complete all mandatory courses (University Core, College Core and Program Core) as prescribed in the curriculum of the respective department.

✓ The student must participate in social service activities for a minimum duration of 40 hours. Apart from the above, for all PG Programs the following requirements should also be satisfied.

✓ Must have published atleast one publication (along with Supervisor) in Scopus indexed Journal.

And the following criteria must be fulfilled for the various programs as given   against the program name.

	Name of the program	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Total Credits	Minimum CGPA required
1	Bachelor of Architecture	10	-	6	-	0	-	-	38	155	-	-	4	-	-	61		280	5.75
2	Bachelor of Arts	48	10						4				59					121	5.25
3	Bachelor of Computer Applications			8					14				18	4		81		125	5.25
4	Master of Arts (English)	24							15							91		130	5.0
5	Master of Science (Chemistry)		6	9					6							82		103	5.5
6	Master of Science (Applied Mathematics)		5	12					15							64		96	5.5
7	Master of Science (Physics)	9							10							75		94	5.5
	Master of Science (Finance & Control)		3						12			20	3			74		112	5.5
8	Bachelor of Business Administration	15							18				21	10		69		133± 5	5.25
9	Bachelor of Business Administration (Business Analytics)	43							26				18	10		38		135	5.25
10	Bachelor of Business Administration (Strategic Finance)	31							18				21	10		57		137	5.25
11	Bachelor of Business Administration (Logistics)	9							102				7	6		47		171	5.25
12	Bachelor of Commerce (H)	10	9			2			18				9	5		96		149	5.25
13	B.Com with ACCA	10	9			2			6			20	9	5		120		181	5.25
14	Bachelor of Science (Hotel Management)	4	53			3			39				10			24		133	5.75

No.	Program																		
15	Master of Business Administration	36	4						12				4	9		45		106	5.5
16	Master of Business Administration (Innovation, Entrepreneurship &Venture	15	12						50							27		104	5.5
17	B.Tech	15-18	6	6	4	2	-	-	20	2.5	20	20	12	28+ 5	31+ 6	31-48	0-12	170+5	5.25
18	B.Tech (Lateral Entry)	-	-	-	-	-	-	-	-	-	-	-	-	-	-			125+5	5.25
19	B.Tech(Hons)	12	6	6	3	2	3	1	16	-	20	-	16	21+ 5	30+ 5	59*	12	185+ 5	8.5
20	B.Tech(Minor)	12	6	6	3	2	3	1	16	-	20	-	16	21+ 5	30+ 5	59$	12	185+ 5	6.75
21	B.Tech(Specilization)	18@	6	6	3	2	3	1	16	-	20	-	16	21+ 5	30+ 5	39	12	171+ 5	6.75
22	M.Tech	12							42				32					84	5.5
23	Bachelor of Fine Arts (BFA)																		
24	Animation	38							20				19	1		91		169	5.25
25	Filmmaking	42							20				19	1		91		173	5.25
26	Painting	42							16				19	1		85		163	5.25
27	Sculpture	42							16				19	1		85		163	5.25
28	Bachelor of Science – Visual Communications																		
29	Advertising	12							22				16	1		78		129	5.25
30	Animation	12							22				16	1		78		129	5.25

No.	Program															
31	Filmmaking	12						22			16	1		78		129	5.25
32	Bachelor of Pharmacy (B.Pharm)	8	4					6				13		189		220	5.00
33	Master of Pharmacy (M.Pharm) Pharmaceutics							43						52		95	5.00
34	Pharm.D							11			2	4		151		168	5.00
35	BB.A LL.B	11	5					9			5			32		235	5.0
36	LL.B		6					3						31		145	5.0
37	LL.M								33	30					63		
38	BSC Hons Agriculture	9	4											175		188	5.0

* In the core of that same branch of engineering.

$ 20 credit should be from the core of another branch of engineering. @ All electives

must be from the same stream of specialization.

A. Professional elective courses
B. Skilling course
C. Open electives
D. Management electives
E. Foreign language elective
F. Certificate course for domain
G. Certificate course yoga /sports/fine arts
H. Industrial training / term paper/ project / practice school
I. Studio
J. Honors
K. Specialization
L. Humanities & social sciences
M. Basic sciences
N. Engineering sciences
O. Professional core
P. Flexi-core

B.Tech Degree with specialization is offered in the following areas:

S. No.	Area of Specialization	Offered to the Department of
1	Genetic Engineering	BT
2	Industrial Biotechnology	BT
3	Bioinformatics	BT
4	Medical Biotechnology	BT
5	Structural Engineering	CE
6	Geotechnical Engineering	CE
7	Water & Environmental Engineering	CE
8	Construction Technology & Management	CE
9	Transportation Engineering	CE
10	Artificial Intelligence & Machine Learning	CS,EM, ME,AD,CI,EE
11	Cloud & Edge Computing	CS,EM, AD,CI
12	Network Security	CS,EC,EE,EM,AD,CI
13	Data Science And Big Data Analytics	CS,EC,EM,AD,CI,EE
14	Software Modelling & Devops	CS,EM, AD,CI
15	IOT	CS,CM,CI,AD,ME,EE
16	VlSI	EC,EE
17	Renewable energy & Smart cities	EC,ME,CE,EE
18	Signal Processing	EC
19	Robotics & Automation	EC,ME,EE
20	Bio-Medical Instrumentation	EC,EE,CM,ME
21	Rf & Microwave	EC
22	Data Communication	EC,EE,CM
23	Web Technologies	CS,CM,CI,AD
24	Industrial Automation	EE,ME
25	Green Energy Technologies	EC,CM,EE, ME
26	Smart Grid Technologies	EC,CM,EE
27	Electric Vehicle Technologies	EE,ME
28	Engineering Design	ME
29	Smart Manufacturing	ME
30	Automobile Engineering	ME
31	Autotronics	ME,EE, CS, EC
32	Product Design	ME
33	Autonomous Systems	AD,CI,ME
34	Geo-Spatial Data Analytics	AD,CI
35	Medical Intelligence	AD,CI
36	Iot Analytics	AD,CI
37	Distributed Ledger Analytics	AD,CI
38	Social & Digital Media Analytics	AD,CI

CHAPTER 7

PROGRAM CURRICULUM

For an academic program the curriculum is the basic framework that will stipulate the credits, category, course code, course title, course delivery (Lectures / Tutorials / Practice / Skill/ Project/ Self Study / Capstone Design etc.), in the Choice Based Credit System. However, all such are essentially designed, implemented and assessed in Outcome Based Education Framework.

7.1   Program Structure

a. An Academic Year is made of Two semesters each is of, approximately 16 ± 1 week duration and each semester is classified as:

- Odd Semester (July –December)
- Even Semester (December – May).

b. KLEF may offer summer term between May and June.

c. All courses are offered under three categories vis-à-vis. even, odd and dual semester courses.

d. Students have the flexibility to choose courses of their own choice prescribed by the KLEF.

e. From 3rd Semester onwards a student can register for a maximum of 30 credits, other than audited and certificate courses per semester. This is not applicable when student exercises the overloading option (while doing project work/practice school/Minor degree/Honors degree program/specialization).

f. Every course has a Lecture-Tutorial-Practice-Skill (L-T/ST-P-S) component attached to it.

g. Based upon the L-T-P-S structure the credits are allotted to a course using the following criteria.

- Every Lecture / Tutorial hour is equivalent to one credit.
- Every Practical hour is equivalent to half credit.
- Every skill-based practice hour is equivalent to quarter credit.
- If the calculated value of credit is a fraction, it is rounded to the next integer.
- Every (ST) Studio hour is equivalent to one and a half credit.

h. Audit Courses

Any course offered in the University that has no assessment of student performance and no grading.

Induction Courses:

A student who gets admitted into B.Tech. program must complete a set of Induction courses for a minimum period of 3 weeks and obtain a "Satisfactory" result prior to registering into 1st Semester of the Program.

i. Value-Added courses:

Courses leading to global certification and those which are conducted exclusively for employability are referred to as value added courses. Though "Satisfactory" completion of value added courses doesn't acquire any credit but they are part of the graduation requirements. Refer Section 3.1 for list of Value-added courses.

j. Bridge Courses:

Courses which are required to bridge the continuity among the Basic sciences/Engineering Sciences/professional courses (both core and electives) and are identified through gap analysis carried out using feedback obtained from various academic stakeholders are termed as Bridge Courses. These courses also do not yield any credits but require a "Satisfactory" result to register into the attached professional courses.

7.2   Course Precedence

The following are the guidelines for registering into courses with pre-requisites.

1.Every course may have one or more of its preceding course(s) as pre- requisite(s).

2.To register for a course, the student must successfully be promoted in these course(s) earmarked as pre-requisite(s) for that course.

7.3   Summer Term Courses

KLEF offers summer term courses during May and June. The following are the guidelines to register in to courses offered in Summer Semester.

a.   A student may register for course/s in each summer term by paying the

stipulated fee. Students registering for more than one (1) summer course must ensure that there is no clash in the time table.

b. A student can register into a detained course or a not-registered course (course offered in regular semester, but student failed to register due to the non-compliance of pre-requisite condition but has paid the fee.) A student can also register for other than the above two mentioned categories of courses only if they are permitted for acceleration.

c. In any case, a student can register only for a maximum of 12 credits during summer term.

d. Attendance & Promotion policy for summer term is same as compared to the regular semester except for condonation policy. Condonation is not applicable for summer term courses.

7.4 Practice School

The Practice School (PS) program forms an important component of education at KLEF. It is an attempt to bridge the gap between an academic institution and the industry. The Program, which would be a simulation of real work environment, requires the students to undergo the rigor of professional environment, both in form and in substance. In the process, it provides an opportunity for the students to satisfy their inquisitiveness about the corporate world provides exposure to practicing professional skills and helps them acquire social skills by being in constant interaction with the professionals of an organization. During Practice School, some of the students may be offered stipend and/or job offer as per the discretion of the concerned industry.

7.4.1 Practice School Duration

Practice School is offered usually for a period of one semester. Should the need be, a student may put a request through the organization and the Head of the Department to the Dean Academics requesting for extension of the duration.

7.4.2 Eligibility:

For B.Tech Program

a. Students who have not registered with placement (IRP) can only apply for PS-1 in (VII semester).

b. Students who have registered with placement (IRP) and after getting placement will be allowed in PS-2 (VIII semester).

For remaining UG & PG Programs other than B.Tech

As per the academic program eligibility, the final year students are only eligible to register for Practice School over the period of one /two semesters.

7.4.3Guidelines

The following guidelines are followed attending Practice-School.

a) Practice School program carries six credits for a semester. Therefore, it involves substantial effort and requires seriousness, commitment and dedication from the students. One has to hard work for good experience and better placement opportunities.

b) Students must be disciplined, hardworking and possess attitude to undergo On the Job Training (OJT).

c) Students must abide by the rules and regulations of the company and the University.

d) Practice School is not mandatory for the students. However, Practice School experience enhances the opportunities for placement.

e) Circular will be sent regarding schedule of the selections as and when a company is visiting the campus. Interested students shall attend the selection process for the companies.

f) The students who were not selected by the companies in the campus will be allotted a company by the Director, Practice School. Allotment of company is done based on the CGPA of the students and the availability of vacancies in the companies of their relevant branch of engineering.

g) Students who have submitted the Registration-cum-Data Form will not be guaranteed opportunity to attend the Practice School. The number of students sent to the practice school purely depends on the number of vacancies by various companies.

h) At the time of allotment of companies, the students should be ready for opting companies in any location (Hyderabad, Bengaluru, Vizag, Chennai and Vijayawada etc.) depending on the availability of the vacancies in their respective branches.

i) Once the students are selected by a company or allotted to a company, they shall

not be allowed either to change company or to cancel the practice school program.

7.5 Award of Degree

7.5.1 For B.Tech, M.Tech, B.Arch, all B.sc and M.sc , Arts, B.com, BBA, MBA:

A student having cleared all the courses and met all the requirements for the award of degree with

a. $5.5 \leq CGPA < 5.75$ will be awarded Pass class

b. $5.75 \leq CGPA < 6.75$ will be awarded Second-class

c. $6.75 \leq CGPA < 7.75$ will be awarded First class

d. $CGPA \geq 7.75$ will be awarded First class with Distinction provided the student has cleared all the courses in first attempt and must have fulfilled all the program requirements within the specified minimum years duration.

7.5.2 For BBA-LLB

7.5.2.1 $5.0 \leq CGPA < 5.5$ will be awarded Pass class

7.5.2.2 $5.5 \leq CGPA < 6.5$ will be awarded Second-class

7.5.2.3 $6.5 \leq CGPA < 8.0$ will be awarded First class

7.5.2.4 $CGPA \geq 8.0$ will be awarded First class with Distinction.

For LL.B

a. The degree will be awarded only to candidates who obtain minimum CGPA of 5.

b. The LL.B. Degree with third class will be awarded to those having $CGPA \geq 5.5$ and above up to $CGPA < 6.5$.

c. The Degree of Second class will be awarded to those having $CGPA \geq 6.5$ and up to $CGPA < 7.5$.

d. The Degree of first class will be awarded to those having $CGPA \geq 7.5$ and up to $CGPA < 8.5$.

e. The Degree with Distinction will be awarded to those having $CGPA \geq 8.5$.

7.5.3 For B.Pharmacy

7.5.3.1 $5.0 \leq CGPA \leq 5.99$ will be awarded Second-class

7.5.3.2 $6.0 \leq CGPA \leq 7.49$ will be awarded First class

7.5.3.3 $CGPA \geq 7.5$ will be awarded First class with Distinction.

7.5.4 For Architecture

7.5.4.1   5.75 ≤ CGPA ≤ 5. will be awarded Second-class

7.5.4.2   6.0≤ CGPA ≤ 7.49 will be awarded First class

7.5.4.3   CGPA≥ 7.5 will be awarded First class with Distinction

7.5.5 For Agriculture

7.5.5.1   5.99 ≤ CGPA ≤ 5.0 will be awarded Pass

7.5.5.2   6.99 ≤ CGPA ≤6.0 will be awarded Second Class

7.5.5.3   7.99 ≤ CGPA ≤7.0 will be awarded as First class

7.5.5.4   CGPA ≥ 8.0 will be awarded First class with Distinction

CHAPTER 8

8.1 Attendance Rules

The following Attendance Policy for promotion of very course

S.No	Program	Minimum Attendance % Required for promotion of every course
1	All Programs except BBA-LLB	85
2	Pharmacy, Pharm D	80
3	BBA-LLB, LL.B	65

The student must maintain a minimum attendance of 85% for all programs, except for Pharmacy 80%, BBA-LLB & LL.B is 65%, in every course. In case of medical exigencies, the student/parent should inform the principal within a week by submitting necessary proofs and in such cases the attendance can be condoned up to an extent of 10%. by Principal on the recommendation of the Head of the Department.

1. Attendance in a course shall be counted from the date of commencement of the classwork.
2. Attendance for the students who are transferred from other institutes and for new admissions, attendance must be considered from the date of her/his admission.
3. In case of attendance falling marginally below 75% for all programs (for Pharmacy 80%, BBA-LLB & LL.B is 65%) due to severe medical reasons or any other valid reasons, the Principal/Program chair may bring such cases, along with valid and adequate evidence, to the notice of the Dean Academics. The condonation board formed by Vice-Chancellor under the chairman ship of Dean-Academics will consider any further relaxation in attendance from the minimum attendance percentage requirement condition after going through case by case.

8.2 Attendance based Marks

There are no specific marks attached to attendance as such, however, if the Course Coordinator of a course desires to award certain marks, for attendance in a course, She/he can do so based on following guidelines, which thereby must be clearly reflected in the respective course handouts which should duly be approved by the Dean Academics. For

any course, not more than 5% marks can be allotted for attendance.

For BBA- LLB, LL.B the distribution of marks, if the attendance percentage is >76 is 1 mark, >81 is 2 marks. >86 is 3 marks,>91 is 4 marks and >96 is 5 marks, other wise 0 marks.

For all other programs the distribution of marks for attendance is [85, 88] = 1 marks, [89, 91] = 2 marks, [92, 94] =3 marks, [95, 97] =4marks and [98,100] =5marks, below 85%, even in case of condonation,"0" marks.

The marks, if allotted for attendance will have to be considered for all L-T/ST-P-S components of a course cumulatively but not specifically for theory component for any course.

8.3 Attendance Waiver

Students maintaining a CGPA ≥ 9.00 and SGPA ≥ 9.00 in the latest completed semester get a waiver for attendance in the following semester. Students who thus utilize an attendance waiver will be awarded the marks allocated for attendance (if any) based on their performance in an advanced assignment specified by the course coordinator (emerging topics related to the course). S/he can appear in all assessments and evaluation components without being marked ineligible due to attendance-based regulations.

8.4   Attendance Condonation for Participation in KLEF / National/ International Events

Only those students nominated/sponsored by the KLEF to represent in various forums like seminars/conferences/workshops/competitions or taking part in co- curricular/ extra-curricular events will be given compensatory attendance provided the student applies in writing for such a leave in advance and obtain sanction from the Principal basing on the recommendations of the Head of the Department (HoD) for academic related requests; or from the Dean Student Affairs for extra-curricular related requests. For participation in the KLEF's placement process the names of students will be forwarded by the placement cell in-charge to the respective Heads of the Departments.

Students participating in KLEF/National/International events like technical fests, workshops, conferences etc., will be condoned for 9 instructional days per semester, and in Entrepreneurship related activities a maximum of 18 instructional

days per semester. This condonation is not applicable for summer term.

8.5   Eligibility For Appearing in Sem –End Examination

A Student registered for a course and maintained minimum attendance (i.e. for Pharmacy 80%, BBA-LLB & LL.B 65% and for all other programs Except Agriculture 85%) is eligible to write the Semester-End Examination for that course unless found ineligible due to one or more of the following reasons:

a.   Shortfall of attendance

b.   Acts of indiscipline

c.   Withdrawal from a course

For Agriculture Student registered for a course and maintained minimum attendance of 85% and appears for the mid-Semester examination then only he/she shall be permitted to appear for the semester final theory and practical examination in the course concerned.

8.6   Absence In Assessment & Examination

If a student fails to take any formative assessment component (due to ill-health or any valid reason), no second chance will be given, and zero marks will be awarded for the same. In cases of excused absence, the instructor may provide an opportunity to the student to reappear in quizzes or assignments or any other internal assessment criteria based on the approval from the principal & the concerned Head of the Department in written.

If a student fails to write Sem-In Exam-I or obtained less than 50% marks in Sem-In Exam-I, he must attend remedial classes and maintain a minimum 85% of attendance in remedial classes to be eligible for Make-up test for Sem-In exam-I. The marks scored in such remedial makeup will be considered. Further, the number of remedial classes to be conducted shall be 50% of regular classes held till the SEM-In exam-I. However, there is no make-up test for Sem-In Exam-II or for the Laboratory exams.

8.6.1 A student's absence for a Sem-In Exams under the following circumstances are only considered for makeup test:

8.6.1.1   Pre-approved participation in University/State/National/International co-curricular and extra-curricular activities

8.6.1.2   Ill health and medical emergencies for the student leading to hospitalization with certification by the doctor stating inability of student to attend Sem-In exams clearly within the necessary dates.

8.6.1.3   Death of immediate family member

8.7   Remedial Classes:

The following categories of students are recommended to attend Remedial classes:

- ✓ Students who did not attend or obtain a minimum of 50% marks in the Sem-In exam 1
- ✓ Students those for whom CO1/CO2 is(are) not attained in Sem-In Exam 1
- ✓ Any other student may also be permitted to attend remedial classes as per the discretion of the Principal.

The following are the guidelines to conduct remedial classes:

- ✓ Remedial classes which are scheduled to be conducted usually one- or two-weeks post conclusion of Sem-In exam 1.
- ✓ The number of remedial classes to be conducted shall be 50% of regular classes held till the Sem-In exam-I.
- ✓ Remedial classes MUST NOT be scheduled during regular class work hours.

The following ALMs are recommended for slow learners:

- One minute paper
- Think/Plan/Share
- Role play
- Focused listening and Listening for specifics
- Just-in time teaching
- Models
- Sheets
- Hands on activity

Course coordinators may also include alternate Active learning Methods based on the course being taught.

CHAPTER 9

ASSESSMENT & EVALUATION PROCESS

The assessment in each theory subject consists of two Sem-In Exams (Sem-in Exam-I and Sem-In Exam -II), in-class quizzes/tutorials/home-assignments/Active Learning Methods (continues assessment), and the Semester-End Exanimation (SEE). The distribution of weightage for each assessment step is listed below. The distribution of internal marks in the table below is only a guideline. Instructors at their discretion may apportion some marks for attendance beyond 75%. In such cases, the marks shown for quizzes and assignments will be accordingly be adjusted. Students are advised to refer the course handout to get more detailed information on assessment.

a.   The Sem-In tests and the Semester-End Examinations will be conducted as per the Academic Calendar.

b.   As per the necessity, the Supplementary examinations will be conducted at the discretion of Dean Academics with the approval of the Vice-Chancellor.

c.   Students may have to take more than one examination in a day during Sem-In exams, Semester-End Examinations /Supplementary examinations.

9.1   Semester-In Evaluation

The following guidelines are followed for the Semester-In evaluation.

a.   The process of evaluation is continuous throughout the semester.

b.   The distribution of marks for Semester-In evaluation is 60% of aggregate marks of the course for all the programs except B.Arch (50%), B.Pharmacy (25%) & BBA-LLB (40%).

SlNo.	College/School Name	Semester-In Evaluation (Weightage %) (A)	Sem End Examination (Weightage %) (B)	Minimum requirement for pass %	
				(A+B)	B
1	School of Architecture (B.Arch)	50	50	50	50
2	College of Pharmacy (B.Pharm)	25	75	50	50
3	Pharm D	30	70	50	50
4	College of Law (BBA-LLB, LL.B)	40	60	40	40

5	B.Sc Agriculture	**40**	**60**	**50**	**50**
6	MBA	**60**	**40**	**50**	**50**
7	M.Tech(All Programs)	**60**	**40**	**50**	**50**
8	For all Others	**60**	**40**	**40**	**40**

c.   The distribution of weightage for various evaluation components are decided and notified by the course coordinator through the course handout after approval by the Dean Academics, prior to the beginning of the semester.

d.   In order to maintain transparency in evaluation, answer scripts are shown to the students for verification, within one week of conduct of exam. If there is any discrepancy in evaluation, the student can request the course-coordinator to re- evaluate.

e.   The solution key and scheme of evaluation for all examinations are displayed by the Course-Coordinator in the appropriate web portal of the course, on the day of the conduct of examination.

f.   In case the student is unable to appear for any evaluation component owing to hospitalization, participation in extra/ co-curricular activities representing KLEF/ state/ country; the Dean Academics can permit to conduct of re- examination for such students.

g.   In case a student has missed any of the two in-semester evaluations, S/he is eligible for and will be provided with an opportunity of appearing for re- examination.

9.2   Semester End Examination

a.   The pattern and duration of such examination are decided and notified by the Course Coordinator through the Course handout, after approval from the Dean Academic.

b.   To maintain transparency in evaluation, answer scripts are shown to the students for verification. If there is any discrepancy in evaluation, the student can request the Controller of Examinations to re-evaluate.

c.   If a student earns F grade in any of the courses of a semester, an instant supplementary exam (for only Semester End Exam component) will be provided within a fortnight of the declaration of the results.

9.2.1 Assessment of Project/Research-Based Subjects

All project or research-based subjects must have a defined time-limit for completion. The specific time limits for completion and schedule for monitoring and evaluation of performance of students will be announced each term. The final project report, after getting the plagiarism certificate, only will be considered and evaluated by the panel of examiners. Student project reports must follow the guidelines prescribed by the office of Dean Academics.

9.3 Grading Process

At the end of all evaluation components based on the performance of the student, each student is awarded based on absolute/relative grading system. Relative grading is only applicable to a section of a course in which the number of registered students is greater than or equal to 25. Choice of grading system is decided by the Course-Coordinator with due approval of Dean Academics and is specified in the course handout.

9.3.1 Absolute Grading

The list of absolute grades and its connotation are given below for B.Tech ,M.Tech, M.Sc, BCA, BA, B.Sc HM, BBA, B.Com(Hon's), MBA programs

School Of Architecture (B.Arch)

Performance	Letter Grade	Grade Point	Percentage of marks
Outstanding	O	10	90 - 100
Excellent	A+	9	80 - 89
Very Good	A	8	70 - 79
Good	B+	7	60 - 69
Pass	B	6	50 - 59
Fail	F	0	0 – 49
Fail	AB	0	Absent

College of Pharmacy (B.Pharm)

Performance	Letter Grade	Grade Point	Percentage of marks
Outstanding	O	10	90 – 100
Excellent	A	9	80– 89
Good	B	8	70– 79
Fair	C	7	60– 69
Average	D	6	50– 59
Fail	F	0	Less than 50
Fail	AB	0	Absent

For BBA LL.B & LL.B

Grade	Qualitative Meaning	Grade Point attached
X	Excellent	10
A	Very Good	9
B	Good	8
C	Fair	7
D	Satisfactory	6
E	Pass	5
F	Fail	0

For All other Programs (Except Agriculture)

Performance	Letter Grade	Grade Point	Percentage of marks
Outstanding	O	10	90 - 100

Excellent	A+	9	80 - 89
Very Good	A	8	70 - 79
Good	B+	7	60 - 69
Above Average	B	6	50 - 59
Average	C	5	46 - 49
Pass	P	4	40 - 45
Failed	F	0	0 – 39
Absent	AB	0	Absent

For Agriculture

Degree	Percentage of Marks Obtained	Conversion into points
	100	**10 points**
	90 to<100	**9 to < 10**
	80 to < 90	**8 to < 9**
	70 to <80	**7 to < 8**
	60 to < 70	**6 to < 7**
	30 to < 60	**5 to <6**
	<50 (Fail)	**<5**
	Eg.80.76	**8.076**
	43.60	**4.360**
	72.50(but shortage in attendance	**Fail(1 point)**

9.3.2   RELATIVE GRADING

a.   The following table lists the grades and its connotation for relative grading:

Letter Grade	Grade Point	Grade Calculation
O	10	total marks >= 90% and total marks >= mean + 1.50σ
A$^+$	9	μ+0.50σ <= total marks < μ+1.50σ
A	8	μ <= total marks < μ+0.50σ
B$^+$	7	μ-0.50σ <= total marks < μ
B	6	μ-1.00σ <= total marks < μ-0.50σ
C	5	μ-1.25σ <= total marks < μ-1.00σ
P	4	μ-1.50σ <= total marks < μ-1.25σ or $\geq$40
F	0	total marks <μ-1.50σ or total marks <=39
Ab	0	Absent

μ is the mean mark of the class excluding the marks of those students who scored ≥ 90% and 40% after rounding the percentages to the next highest integer. σ is the standard deviation of the marks from then....

Relative grading is not applicable for B.Arch & B. Pharmacy programs.

9.3.3 SGPA & CGPA

The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses and the sum of the number of credits of all the courses undergone by a student, in a semester.

$$SGPA(S_i) = \frac{\sum C_i * G_i}{\sum C_i}$$

Where 'Ci' is the number of credits of the ith course and 'G_i' is the grade point scored by the student in the ith course.

The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a program,

$$CGPA(S_i) = \frac{\sum C_i * S_i}{\sum C_i}$$

Where 'S'i is the SGPA of the ith semester and 'C_i' is the total number of credits in that semester.

a. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

b. CGPA can be converted to percentage of marks: 10 X CGPA -7.5

c. A student appearing for a course having lab integrated with theory and in case obtains less than 40% in either of lab or theory component of semester end examination, and in such case the student has to reappear for the component only in which he has secured less than 40%. Till successful attainment of minimum 40% of both components, the student remains in the F grade for that course.

d. Audit/Certificate courses are graded as satisfactory (S) or Non- Satisfactory (NS) only.

e. At the end of each semester, the KLEF issues grade sheet indicating the SGPA and CGPA of the student. However, grade sheet will not be issued to the student if he/she has any outstanding dues.

9.3.3.1 Illustration of Computation of SGPA AND CGPA

Computation of SGPA and CGPA Illustration for SGPA

COURSE	CREDITS	GRADE LETTER	GRADE POINT	CREDITPOINT (Credit x Grade)
Course 1	3	A	8	3 X 8 = 24
Course 2	4	B+	7	4 X 7 = 28
Course 3	3	B	6	3 X 6 = 18
Course 4	3	O	10	3 X 10 = 30
Course 5	3	C	5	3 X 5 = 15
Course 6	4	B	6	4 X 6 = 24
	20			139

Thus, SGPA =139/20 =6.95

Illustration for CGPA

Item	Semester					
	I	II	III	IV	V	VI
Credits	20	22	25	26	26	25
SGPA	6.9	7.8	5.6	6.0	6.3	8.0

Thus,

$$CGPA = \frac{(20*6.9+22*7.8+25*5.6+26*6.0+26*6.3+25*8.0)}{(20+22+25+26+26+25)} = 6.73$$

9.4 Betterment

A student may reappear for semester end examination for betterment only in the theory part of the course for improving the grade, subject to the condition that, the student has passed the course, his/her CGPA is ≤ 6.75 and the grade in the respective course to be equal to or lower than "C". In the case of reappearing for a course, the best of the two grades will be considered.

A Student can re-register in any course in any semester during the program for improvement of grade if the current grade in the course is lower than B^+ and with due approval from Dean Academics in accordance with academic regulations.

A student cannot reappear for semester end examination in courses like Industrial Training, courses with their L-T/ST-P-S Structure like 0-0-X-X, Project, Practice School and Term Paper.

A student is not eligible for award of B.Tech. Degree with Honors, and any Program Degree

with distinction, in case s/he takes up the betterment option.

9.5   Course Based Detention Policy

In any course, a student must maintain a minimum attendance as per the attendance policy referred in Chapter 5.1 and 5.4, to be eligible for appearing in the Sem-End examination. Failing to fulfill this condition, will deem such student to be detained in that course and become ineligible to take semester end exam.

CHAPTER 10

PROMOTION

10.1 Cha

A student admitted to a particular Branch of the B.Tech. Program will normally continue studying in that branch until the completion of the program. However, in special cases the KLEF may permit a student to change from one branch to another after the second semester, provided s/he has fulfilled admission requirement for the branch into which the change is requested. For all remaining UG /PG programs, the change of branch is not applicable.

The rules governing change of branch are as listed below:

a. Top 1% (based on CGPA until 2nd semester) students will be permitted to change to any branch of their choice within the program discipline.

b. Apart from students mentioned in clause (a) above, those who have successfully completed all the first and second semester courses and with CGPA ≥ 8 are also eligible to apply, but the change of Branch in such case is purely at the discretion of the KLEF.

c. All changes of Branch will be effective from third semester. Change of branch shall not be permitted thereafter.

d. Change of branch once made will be final and binding on the student. No student will be permitted, under any circumstances, to refuse the change of branch offered.

e. Students in clause a and b may be permitted subject to the availability of seats in the desired branch.

10.2 Credit transfer

10.2.1 Credit transfer between KLEF and other institution

a. Credit transfer from other institutions to KLEF or vice versa is permitted only for undergraduate program.

b. Credit transfer from KLEF to other institutions: Student studying in KLEF can take transfer to another institution under the following conditions:

• KLEF has signed MOU with the institution.

• However, a student, after seeking transfer from KLEF can return to KLEF after a semester or year. Based on courses done in the other institution, equivalent credits shall be awarded to such students.

c. Credit transfer from another institution to KLEF: A student studying in another

institution can take transfer to KLEF under the following conditions:

- When a student seeks transfer, equivalent credits will be assigned to the student based on the courses studied by the student.
- The student, when transferred from other institutions, has to stick to the rules and regulations of KLEF.
- To graduate from KLEF, a student must study at least half of the minimum duration prescribed for a program at KLEF.

10.2.2   Credit Transfer Through MOOCs:

Undergraduate students can get credits for MOOCs courses recommended by KLEF up to a maximum of 20% of their minimum credits required for graduation. The discretion of allocation of MOOCs courses equivalent to the courses in the curriculum lies with the office of the Dean Academics.

A student may also be permitted to obtain 20 credits through MOOCs in addition to the minimum credits required for graduation. These 20 credits can also be utilized to acquire a Minor degree or an Honors degree if the courses are pronounced equivalent to those specified for the respective degrees by the office of the Dean Academics. These additional credits through MOOCs if to be considered for CGPA/Minor/Honors degree must be approved by Dean Academics prior to enrollment in the respective MOOCs.

Students acquiring additional credits for Honors/Minor degree must adhere to the rules governing the award of the respective degree, otherwise, a student applying for registering into additional credits through MOOCs must possess a minimum CGPA of 7.5 till that semester.

10.2.3   Course Credit

A credit is a unit that gives weight to the value, level or time requirements of an academic course. The number of 'Contact Hours' in a week of a particular course determines its credit value. One credit is equivalent to one lecture hour per week or one tutorial hour per week or two hours per week of practical/ field work or four hours per week of skilling or one studio hour is equivalent to 1.5 credit during a semester.

10.3 Promotion Policy

A student shall be eligible for provisional promotion for registration of courses in the next

semester subject to the following criterion:

Sl No	College Name	Promotion Policy – Year / Semester
1	College of Architecture (B.Arch)	A student shall be eligible for provisional promotion for registration of courses in the next semester subject to the following criterion: A student is eligible for provisional promotion to a higher semester if S/he: • A student shall not be permitted to enroll for the Architectural Design course in a semester unless S/he has completed the Architectural Design course of the previous semester. • A student shall not be permitted to enroll for the tenth semester Architectural Design Thesis unless he / she has successfully completed Practical Training/ Practices School / Internship. In case a student is unable to secure minimum P grade for a particular course even after three consecutive attempts, S/he has to repeat the course by re-registration.
2	College of Arts, Humanities & Sciences (BA., BCA, MA-English, M.Sc Chemistry, M.Sc Applied Mathematics, M.Sc Physics)	**For BCA,** A student is eligible for provisional promotion to a higher semester if S/he: Earns a minimum of 28 credits prior to registration of III semester. For remaining programs, Promotion Policy is Not Applicable.
3	Business School (BBA, B.Com (H), B.Sc HM, MBA, M.Sc (Finance & Control)	**NA**

	College of Engineering (B.Tech, M.Tech)	For B.Tech: A student is eligible for provisional promotion to a higher semester if s/he: 1. Earns a minimum of 40 credits prior to registration of V semester 2. Earns a minimum of 70 credits prior to registration of VII semester. **Note:** In case a student is unable to secure minimum P grade for a particular course even after three consecutive attempts, s/he has to repeat the course by re-registration. For M.Tech, there is no Promotion Policy.
5	Fine Arts (B.Sc-VC)	**NA**
6	College of Pharmacy (B.Pharm)	1. He/she shall not be eligible to attend the courses of V semester until all the courses of I and II semesters are successfully completed. 2. He/she shall not be eligible to attend the courses of VII semester until all the courses of I, II, III and IV semesters are successfully completed. 3. A lateral entry student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of III and IV semesters are successfully completed. 4. Any student who has given more than 4 chances for successful completion of I / III semester courses and more than 3 chances for successful completion of II / IV semester courses shall be permitted to attend V / VII semester classes ONLY during the subsequent academic year as the case may be. In simpler terms there shall NOT be any ODD BATCH for any semester.
7	College of Law (BBA-LLB)	**NA**
8	College of Agriculture	Completion of all 1st year courses is mandatory for registration in 3rd year. Completion of all 2nd year courses is mandatory for registration in 4th year

> ➢ For other remaining programs. A student shall be eligible for provisional promotion for registration of courses in the next semester irrespective of detentions/ backlogs.

10.4 Re-Evaluation

Students desirous of seeing their Semester-End Examination answer scripts have to apply online to the COE for the same within the timeframe as declared by the COE by paying the prescribed fee. Student applications must be forwarded by the Head of the Department and the Principal of the School and then re-evaluation fees are to be paid. The application along with the attached fee receipt must be submitted to the office of the COE.

There is no provision for re-evaluation in case of Lab/Practical/skilling exams, student project, viva-voce exam or seminar/design/mini-project courses.

The final grades awarded to each course shall be announced by the COE and the same will be made available to students through the website/notice boards.

10.5 Academic Counseling Board (ACB)

Academic Counseling Board is constituted by the Dean Academics. This board shall comprise of the Chairman, Convener, Principal/Director, HOD and Professor/Associate Professor. A student will be put under Academic Counseling Board in the following circumstances:

- Has CGPA of less than 6.00.
- Has 'F' grade or 'Detained' in multiple courses.

The first level of Counseling such students will be done by the Mentor of the student and the HoD followed by the ACB and the list of students who have to undergo the ACB counseling be forwarded by the HoD to the Office of Dean Academics.
The students undergoing the Academic Counseling Board process may be allowed to register only for a few courses based on the recommendation of Academic Counseling Board.

10.5.1 Backlog Courses

A course is considered to be a backlog if the student has obtained 'F' grade in the course.

10.5.2 Rustication

A student may be rusticated from the KLEF on disciplinary grounds, based on the recommendations of any empowered committee, by the Vice Chancellor.

10.6 Award of Medals

KLEF awards Gold and Silver medals to the top two candidates in each program after successful completion of their study. The medals are awarded based on their CGPA during the Annual Convocation with the following constraints:

a. The grade obtained through betterment/ supplementary will not be considered for this award.

b. S/he must have obtained first class with distinction for the award of Gold or Silver-medal.

CHAPTER 11

STUDENT COUNSELING & FEEDBACK

11.1 Counseling:
Student counseling / mentoring service ensures that every student gets to know the academic structure of the University and utilize maximum opportunities that the institute offers to fulfill their career and personal life goals. The objective of "Student Counseling/Mentoring Service" is to provide friendly support to the students for their well-being during their stay in the campus and for their holistic development.

Counselors offer individual counseling to help students resolve personal or interpersonal problems. They may also offer small group counseling to help students enhance listening and social skills, learn to empathize with others, and find social support through healthy peer relationships. Counselors also provide support to faculty by assisting with classroom management techniques and the development of programs to improve quality or safety. When necessary, counselors may also intervene in a disrupted learning environment.

However, the benefits of counselor-student relationships are as follows:

- Maintain academic standards and set goals for academic success.
- Develop skills to improve organization, study habits, and time management.
- Work through personal problems that may affect academics or relationships.
- Improve social skills.
- Cope with university or community-related violence, accidents.
- Identify interests, strengths, and aptitudes through assessment.

11.2 Counseling Policy:

Student counseling takes great place in K L University. Counseling is designed to facilitate student achievement, improve student behavior, subject analysis levels, attendance, and help students develop socially, professionals with bachelor's, master's degrees or beyond. Faculty counselors provide counseling and serve an educational role in K L University. We have Mentors, Academic, Career, Physiological, Co-Curricular & Extra Curricular activities counselors in order to support students who are experiencing personal or academic challenges, help students choose careers and plan for university and intervene when students face behavioral, physical, or mental health challenges.

11.3 The duties of counselors:

11.3.1 Mentoring:
Plan and design a system for student behavior, mental health and academic challenges, define structural and functional characteristics of the system in detail, plan provisions for academic mentoring apart from classroom interaction.

11.3.2 Academic Counseling:
Develop a systematic and process-oriented mechanism to improve academic counseling in relation to student attendance, punctuality, performance of students in internal and semester examinations, course / program to be enrolled based on the strength and weakness of the student

11.3.3 Career Counseling:

Conduct personality test (SWEAR) to find suitable career path, Create awareness on the job opportunities, career paths that exist in a specific discipline.

11.3.4 Psychological Counseling:

Organize and strengthen the student counseling services, engage qualified and experienced mentors and advisories for each class of students for providing psychological guidance as required.

11.3.5 Guidance on Co-Curricular & Extra Curricular activities:

Form student clubs to give train and encourages the students to improve their skills, physical fitness and mental strength.

11.3.6 Early intervention:

Counselors receive training about learning difficulties and psychological concerns that commonly manifest in children and adolescents. They may also provide referrals, recommendations, and suggestion to parents about mental health of their wards.

11.3.7 Special needs services:

Counselors often support the special needs of students and may oversee programs that address requirements or learning difficulties.

11.4 Counseling Procedures:

The HOD will allot 20 Students once admitted into a program to a faculty with allocation priority commencing from professors and onwards. The faculty concerned will be called a counselor/mentor.

One hour per week will be allocated by the departments to enable the counselors to counsel the students on various aspects. The counselor will maintain a separate sheet to record student performance and also different kinds of counseling undertaken.

Counselor shall communicate with parents through mail, SMS and also through telephonic conversations. Student's atteandance, marks, placement etc. data must infrom to parents once in a month. The communication undertaken shall be recorded in a separate register.

The following are the various aspects of counseling that the counselors will address during their interaction.

11.4.1 Mentoring

1. Counselor shall counsel the students regularly when the performance of the student is found be un-satisfactory
2. Form a Student-Teacher-Group to share regular updates and events.
3. Form a Parent-Teacher-Association to share regular updates and events.
4. Conduct the feedback on counseling.
5. The counseling data sheet shall be submitted to the principal for verification and approval.
6. At the end of the semester a summary report and recommendations will be sent to Dean Academics Office

11.4.2 Academic Counseling

1. Counselor shall acquire backlog data and record the same into the counseling sheets
2. Counselor will acquire data about the attendance and performance in the internal evaluation and record them into the counseling data sheet.
3. Counselors shall counsel the students regularly to track the performance of the students
4. The counseling data sheet shall be submitted to the principal for verification and approval.
5. At the end of the semester a summary report will be sent to Dean Academics Office.

11.4.3 Career Counseling

1. Counselor has to take SWEAR analysis data in first year.
2. Counselor shall acquire the data related to performance of the students in all the soft skills and other courses that contributes towards employability/ entrepreneurship/ career advancement the career counseling data sheets.
3. Counselor will acquire data about the attendance and performance of the students during all the placement drives conducted by KLU and records the same into the counseling sheet.
4. Councilors shall counsel the students regularly when the performance of the student is found be un-satisfactory.
5. The counseling sheet shall be verified by principal and corrective actions if any will be recommended to the respective departments.
6. At the end of the semester a summary report will be sent to Dean Academics Office.

11.4.4 Psychological Counseling

1. Counselor shall acquire data pertaining to psychological status of the students and record the same into the counseling sheets
2. Counselor will acquire data about the attendance and performance in the internal evaluation and record them into the counseling sheet and see whether the performance is in any way related.
3. Councilor shall counsel the students regularly when the performance of the student is found to be un-satisfactory
4. Counselor should identify the need of any therapy required.
5. Once it is identified, the counselor will arrange the treatment according to the psychological status of the student.
6. Counselor should maintain the progression level of the student periodically.
7. The counseling sheet shall be verified by principal and corrective actions if any will be recommended to the respective departments.
8. At the end of the semester a summary report will be sent to Dean Academics Office.

HODs have to submit monthly /semester / Academic Year Counseling reports with necessary comments and proofs to Dean Academics office duly signed by concerned Principal/Director. Visit following link https://www.kluniversity.in/site/acadboard.htm

11.5 Feedback System

At KLEF, monitoring of feedback is a continuous process. Feedback is obtained from students and parents on various aspects. Feedback is taken through personal interaction with students, interaction with parents in addition to mid-semester and end-semester feedback.

The institution assesses the learning levels of the students, after admission and organizes special programs for advanced learners and slow learners.

11.5.1 Feedback Types:

In first year SWEAR analysis is done for every student in such a way it identifies their interests, pre-existing knowledge, aspects to improve technical and logical skills based on their career choice. The following are the different types of feedback taken at regular intervals:

(i). Student General Feedback (Twice in a Sem.)
(ii). Student Satisfaction Survey (Once in a Sem.)
(iii). Student Exit Feedback (Once in a Year)
(iv). Academic Peers Feedback on Curriculum (Once in a Sem.)
(v). Parents Feedback on Curriculum (Once in a Sem.)
(vi). Alumni Feedback on Curriculum (Once in a Sem.)
(vii). Industry Personnel Feedback on Curriculum (Once in a Sem.)
(viii). Student Feedback on Curriculum (Once in a Sem.)
(ix). Faculty Satisfaction Survey (Once in a Sem.)
(x). Parent Teacher Association (Once in a Sem.)

11.5.2 Feedback Procedure:

General Feedback to be taken from the students on the aspects like Course Contents, Teaching Learning Process, Outcomes, Resources and Evaluation twice in every semester (Mid semester and End Semester Feedback) in a structured format floated by dean academics office.

Student Satisfaction Survey (SSS) to all innovative methods and approaches should be recorded at appropriate intervals and the process should be refined based on that. Students should be sensitized on the process and methods and their understanding of the same should be assured.

Exit survey feedback to be taken from the final year students on the aspects like entrance test, admission process, Course Contents, Teaching Learning Process, Outcomes, Resources and Evaluation, placements etc.

Structured feedback for design and review of syllabus – semester wise / year wise is received from Students, Alumni, Peers, Parent, Industry Personnel.

Satisfaction Survey to be taken from the existing faculty on Course Contents, Teaching Learning Process, Outcomes, Resources and Evaluation once in every semester in a structured format floated by dean academics office.

Parent Teacher Association (PTA) to develop the potential of parents and to strengthen their relationship with their children through planning and conducting a variety of developmental and recreational activities.

Online Feedback is collected from all the students once at the end of the semester using well designed questionnaire. Informal feedback will be collected in parallel from selected student representatives within 4-5 weeks of commencement of the semester by the Office of Dean

Academics.

HODs have to submit monthly /semester / Academic Year Feedback reports with necessary comments and proofs to Dean Academics office duly signed by concerned Principal/Director. Visit following link https://www.kluniversity.in/site/feedsys.htm

PROGRAM STRUCTURE

Sl No	Course Code	Course Title	Category	L	T	P	S	Cr	CH	Pre-requisite	Offered To	AI &DS	BT	CE	CSE	CSIT	ECE	ECS	ME	IOT	EEE
1	20UC 1101	Integrated Professional English	HSS	0	0	4	0	2	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
2	20UC 1202	English Proficiency	HSS	0	0	4	0	2	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
3	21UC 2103	Essential Skills for Employability	HSS	0	0	4	0	2	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
4	21UC 2204	Corporate Readiness Skills	HSS	0	0	4	0	2	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
5	21UC 3105	Problem Solving Skills-I	HSS	0	0	2	2	1.5	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

#	Code	Course		L	T	P		C			Branches										
6	21UC3206	Problem Solving Skills-II	HSS	0	0	2	2	1.5	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
7		Foreign Language Elective	HSS	2	0	0	0	2	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
8	21UC0010	Universal Human Values & Professional Ethics	HSS	2	0	0	0	2	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
9	20UC0007	Indian Heritage and Culture	HSS	2	0	0	0	0	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	0	0	0	0	0	0	0	0	0	0
10	20UC0008	Indian Constitution	HSS	2	0	0	0	0	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	0	0	0	0	0	0	0	0	0	0
11	20UC0009	Ecology & Environment	HSS	2	0	0	0	0	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	0	0	0	0	0	0	0	0	0	0
12	21UC0011	Gender Sensitization	HSS	2	0	0	0	2	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
13	Bridge Course	Universal Human Values	HSS	2	0	0	0	0	2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	0	0	0	0	0	0	0	0	0	0

No	Code	Name	Cat	14	0	20	0	4	17	38	Pre-req	Offered to	17	17	17	17	17	17	17	17	17	17
	Total																						
14	20MT 1101	Mathematics for Computing	BS	2	2	0	2		4.5	6	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
15	20UC 1102	Design Thinking and Innovation-1	BS	1	0	0	4		2	5	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	2	2	2	2	2	2	2	2	2	2
16	21MT 2102	Mathematics for Engineers	BS	2	1	0	0		3	3	NIL	AI &DS,CE,CSE,CSIT, ECE,ECS,EEE,IOT, ME	3		3	3	3	3	3	3	3	3
17		Science Elective - 1	BS	3	0	2	0		4	4	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	4	4	4	4	4	4	4	4	4	4
18	20UC 1203	Design Thinking and Innovation-2	BS	1	0	0	4		2	5	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	2	2	2	2	2	2	2	2	2	2
19		Science Elective - 2	BS	3	0	2	0		4	5	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	4	4	4	4	4	4	4	4	4	4
20	21BT 1001	Biology for Engineers	BS	2	0	0	0		2	2	NIL	CE,ECE,ECS,EEE,I OT,ME			2			2	2	2	2	2
21	20AD 2108	Probability and Statistics for Datasciemce	BS	2	1	0	0		3	3	NIL	AI & DS	3									

#	Code	Name														
22	20AD2110	Mathematical Programming	BS	2	1	0	0	3	3	NIL	AI & DS	3				
23	20CI2103R	Mathematical Programming	BS	2	2	0	0	4			CSIT				4	
24	21MT2011	BioStatistics	BS	2	1	0	0	3	3	NIL	BT		3			
25	21MT1011	Mathematical Methods	BS	2	1	0	0	3	3	NIL	BT		3			
26	21MT2007	Probability and Optimization Techniques	BS	2	1	0	0	3	3	NIL	CE			3		
27	21CS2105	Mathematical Programming-1	BS	2	2	0	0	4	4	NIL	CSE				4	
	21CS2105A	Mathematical Programming-1	BS	3	2	2	0	6	7	NIL	CSE					
	21CS2105P	Mathematical Programming-1	BS	3	2	2	0	6	7	NIL	CSE					
28	21CS2207	Mathematical Programming-2	BS	2	2	0	0	4	4	NIL	CSE				4	
	21CS2207A	Mathematical Programming-2	BS	3	2	2	0	6	7	NIL	CSE					
	21CS2207P	Mathematical Programming-2	BS	3	2	2	0	6	7	NIL	CSE					
29	20CI2204R	Management Information Systems	BS	2	2	0	0	4	4	NIL	CSIT					4
	20CI2204A	Management Information Systems	BS	3	2	2	0	6	7	NIL	CSIT					

#	Code	Course	Category	L	T	P	S	C	Cr	Prereq	Departments									
	20CI2204P	Management Information Systems	BS	3	2	2	0	6	7	NIL	CSIT									
30	20EE2104	Mathematical transforms for Signal processing	BS	2	1	0	0	3	3	NIL	EEE									3
31	20EE2101	Electrical Circuits	BS	2	0	0	2	2.5	4	NIL	EEE									2.5
	Total											25.5	22.5	24.5	27.5	27.5	21.5	21.5	21.5	21.5	24
	21PH1005	Physics		3	0	2	0	4	5	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME									
	21PH1004	Solid State Physics		3	0	2	0	4	5	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME									
	21PH1008	Physics For Electronics Engineering		3	0	2	0	4	5	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME									
	21PH1006	Materials & Measurements	SCIENCE ELECTIVE - 1	3	0	2	0	4	5	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME									
	21PH1010	Mechanics		3	1	0	0	4	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME									
	21PH4101	Quantum Physics for engineers		3	0	0	0	3	3	Nil	AI &DS,BT,CE,CSE,C									

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			L	T	P		C				Offered To
											SIT,ECE,ECS,EEE,IOT,ME
21PH 2101	Quantum Mechanics for Engineers		3	1	0	0	4	4	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
21CY 1001	Engineering Chemistry		3	0	2	0	4	5	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
21CY 1003	Chemistry and Bionformatics For Engineers		3	0	2	0	4	5	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
21CY 1004	Organic Electronics		3	0	2	0	4	5	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
21CE 2205	Geology		3	0	2	0	4	5	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
20PH 2007	Materials for Mechanical Engineering Applications	SCIENCE	3	0	2	0	4	5	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME
21CY 1005	Chemistry for Engineers	ELECTIVE - 2	3	0	0	0	3	3	NIL		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME

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#	Code	Course	Cat	L	T	P		C	Tot	Prereq	Programs											
33	21SC 1101	Computational Thinking for Structured Design	ES	3	0	2	6	5.5	11	Nil	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
34	20ME 1103	Design Tools Workshop – I	ES	0	0	4	0	2	4	Nil	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
35	21SC 1209	Design Tools Workshop – II	ES	0	0	4	0	2	4	Nil	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
36	21SC 1202	Design of Datastructures	ES	3	0	2	4	5	9	20SC 1101	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	5	5	5	5	5	5	5	5	5	5
37	21SC 1203	Computational Thinking for Object Oriented Design	ES	3	0	2	3	4.75	8		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT	4.75	4.75	4.75	4.75	4.75	4.75	4.75		4.75	4.75
38	21EC 1101	Digital Logic & Processors	ES	3	0	2	0	4	5	NIL	AI &DS,CSE,CSIT,ECE,ECS,EEE,IOT	4			4	4	4	4		4	4
39	20AD 2109	Design and Analysis of Algorithms	ES	3	0	2	0	4	5		AI &DS	4									
40	20ME 1203	Computational Thinking and Data Sciences	ES	3	0	2	3	4.75	8	20SC 1101	ME									4.75	
41	20ME 1002	2D Modeling of Physical Systems using CAD tools	ES	1	0	2	0	2	3	Nil	ME								2		

No	Code	Course Title	Cat	L	T	P	S	O	C	Prereq	Dept								
42	20ME 2104	3D Modeling and Physical Prototyping of Mechanical components	ES	0	0	4	0	2	4	20ME1002	ME							2	
43	20ME 2209	Numerical Computation for Mechanical Engineers	ES	2	0	2	0	3	4	Nil	ME							3	
44	20EE 2205	Circuits and Electronics	ES	3	0	2	0	4	5	Nil	ME							4	
45	20ME 2105	Thermodynamics	ES	3	0	0	0	3	3	Nil	ME							3	
46	21ES 2103	BIOCHEMICAL THERMODYNAMICS	ES	3	1	0	0	4	3	Nil	BT		4						
47	21ES 2101	PROCESS ENGINEERING PRINCIPLES	ES	3	1	0	0	4	4	Nil	BT		4						
48	21ES 2102	TRANSPORT PROCESSES IN BIOLOGICAL SYSTEMS	ES	3	0	2	0	4	4	Nil	BT		4						
49	20CE 1002	Engineering Graphics for Civil Engineers	ES	0	0	2	0	1	2	Nil	CE				1				
50	20CE 2105	AI & ML Applications in Civil Engineering	ES	1	0	0	4	2	5	Nil	CE				2				
51	20CE 2101	Solid Mechanics	ES	3	0	2	0	4	5	Nil	CE				4				
52	20CE 2102	Fluid Mechanics	ES	3	0	2	0	4	5	Nil	CE				4				
53	20CE 2103	Surveying	ES	3	0	2	0	4	5	Nil	CE				4				
54	20CE 2104	Construction Materials & Concrete Technology	ES	3	0	2	0	4	5	Nil	CE				4				
55	20CE 2201	Structural Analysis	ES	3	0	2	0	4	5	Nil	CE				4				

S.No	Code	Course	Cat	L	T	P	S	C		Prereq	Dept										
56	20CE2202	Building Planning, Drawing & Construction Management	ES	3	0	2	0	4	5	Nil	CE			4							
57	20EC1202	Computer Organization & Architecture	ES	2	0	0	0	2	2	21EC1101	ECE,IOT,EEE,CSE, CSIT				2	2	2			2	2
58	20EC1213	Design of Basic Electronic Circuits	ES	3	0	0	0	3	3	Nil	ECE									3	
59	20EC2214	IoT Design Workshop	ES	1	0	0	4	2	5	Nil	ECE									2	
60	20EC2112	IT Workshop	ES	1	0	2	0	2	3	Nil	ECE,IOT									2	2
61	21EC2111	Electronic System Design Workshop	ES	1	0	2	2	2.5	3		ECE,IOT,ECS								2.5	2.5	2.5	
62	20EE1201	Basic Electrical and Electronic Engineering	ES	3	1	2	0	5	6	NIL	EEE										5
63	21IN1201	Basics of Electrical Theory, Electronic Devices and IoT Applications	ES	3	0	2	0	4	5	Nil	IoT										4
64	21IN2210	IoT Tools and Applications Workshop	ES	1	0	0	4	2	5	Nil	IoT										2
		TOTAL										27.25	31.25	46.25	25.25	25.25	34.75	25.75	33.25	35.75	30.25
65	20AD1201	Introduction to AI	PC	2	1	0	0	3	3		AI & DS	3									
66	21AD2104	Computer Vision & Perception	PC	3	0	2	2	4.5	7		AI & DS	4.5									
67	21AD2102	Machine Learning	PC	3	0	2	2	4.5	7		AI & DS	4.5									

				L	T	P	S	C															
68	20AD 2207	Deep Learning	PC	3	0	2	0	4	5		AI & DS	4											
69	21AD 2103	Data Science and Visualization	PC	3	0	2	2	4.5	7		AI & DS	4.5											
70	20AD 2205	DWH & DM	PC	3	0	2	0	4	5		AI & DS	4											
71	21AD 2206	Big Data Engineering	PC	3	0	2	2	4.5	7		AI & DS	4.5											
72	21AD2 111	Operating System Fundamentals	PC	2	1	0	0	3	3	Nil	AI&DS	3											
73	21AD2 112	Data Management	PC	2	0	2	0	3	4	Nil	AI&DS	3											
74	21BT 1211	CELL BIOLOGY	PC	3	1	0	0	4	2	Nil	BT		4										
75	21BT 2105	BIOCHEMISTRY	PC	3	0	2	0	4	3	Nil	BT		4										
76	21BT 2108	MOLECULAR BIOLOGY	PC	3	1	0	0	4	2	Nil	BT		4										
77	21BT 2109	IMMUNOLOGY	PC	3	0	2	0	4	3	Nil	BT		4										
78	21BT 3110	BIOINFORMATICS	PC	3	0	2	0	4	3	Nil	BT		4										
79	21BT 3111	GENETIC ENGINEERING	PC	3	0	2	0	4	3	Nil	BT		4										
80	21BT 3112	FERMENTATION TECHNOLOGY	PC	3	0	2	0	4	3	Nil	BT		4										
81	21BT 3113	BIOCHEMICAL REACTION ENGINEERING	PC	3	0	2	0	4	3	Nil	BT		4										

	Code	Subject		L	T	P		C		Prereq	Dept										
82	21BT 3211	PLANT AND ANIMAL BIOTECHNOLOGY	PC	3	0	2	0	4	3	Nil	BT	4									
83	21BT 3212	DOWNSTREAM PROCESSING	PC	3	0	2	0	4	3	Nil	BT	4									
84	21CE 2203	Hydraulics & Hydraulic Machines	PC	3	0	2	0	4	5	Nil	CE		4								
85	21CE 2204	Environmental Engineering	PC	3	0	2	0	4	5	Nil	CE		4								
86	21CE 3101	Design Of Reinforced Concrete Structures	PC	3	0	2	0	4	5	Nil	CE		4								
87	21CE 3103	Transportation Engineering	PC	3	0	2	0	4	5	Nil	CE		4								
88	21CE 2206	Geotechnical Engineering	PC	3	0	2	0	4	5	Nil	CE		4								
89	21CE 3201	Quantity Surveying Estimation	PC	3	0	2	0	4	5	Nil	CE		4								
90	21CE 3102	Water Resources Engineering	PC	3	1	0	4	4	4	Nil	CE		4								
91	21CE 3203	Design Of Steel Structures	PC	3	1	0	0	4	4	Nil	CE		4								
92	20CI2 102O	OPERATING SYSTEMS	PC	3	0	2	0	4	5	COA	CS& IT				4						
93	20CI2 102S	OPERATING SYSTEMS	PC	3	0	2	2	4.5	7	COA	CS& IT										
94	20CI2 102A	OPERATING SYSTEMS	PC	4	0	4	2	6.5	10	COA	CS& IT										
95	20CI2 102P	OPERATING SYSTEMS	PC	4	0	4	2	6.5	10	COA	CS& IT										

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No	Code	Title	Cat	L	T	P					Offered to									
96	20CI2205S	Data Science Analysis and artificial Intelligence	PC	3	0	2	4	5	9	MFC	CS& IT					5				
97	20CI2205A	Data Science Analysis and artificial Intelligence	PC	4	0	4	4	7	12	MFC	CS& IT									
98	20CI2205P	Data Science Analysis and artificial Intelligence	PC	4	0	4	4	7	12	MFC	CS& IT									
99	20CI2206S	ANALYSIS & DESIGN OF ALGORITHMS	PC	3	0	2	4	5	9	DDS	CS& IT					5				
100	20CI2206A	ANALYSIS & DESIGN OF ALGORITHMS	PC	4	0	4	4	7	14	DDS	CS& IT									
101	20CI2206P	ANALYSIS & DESIGN OF ALGORITHMS	PC	4	0	4	4	7	14	DDS	CS& IT									
102	20CI2206O	ANALYSIS & DESIGN OF ALGORITHMS	PC	3	0	2	0	4	5	DDS	CS& IT									
103	21CS2104S	DATABASE MANAGEMENT SYSTEMS	PC	3	0	2	0	4	5	CTSD	CSE,CSIT,ECS			4	4		4			
104	21CS2104A	DATABASE MANAGEMENT SYSTEMS	PC	3	0	2	2	4.5	7	CTSD	CSE									
105	21CS2104P	DATABASE MANAGEMENT SYSTEMS	PC	4	0	4	2	6.5	10	CTSD	CSE									
106	21CS2104O	DATABASE MANAGEMENT SYSTEMS	PC	4	0	4	2	6.5	10	CTSD	CSE									
107	21CS2102	ELEMENTS OF SOFTWARE CONSTRUCTION	PC	2	2	0	0	4	4	NIL	CSE,CSIT			4	4					
108	21CS2102A	ELEMENTS OF SOFTWARE CONSTRUCTION	PC	3	2	2	0	6	7	NIL	CSE									
109	21CS2102P	ELEMENTS OF SOFTWARE CONSTRUCTION	PC	3	2	2	0	6	7	NIL	CSE									

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	Code	Course	Cat	L	T	P		C		Pre	Dept										
110	21CS2103S	OPERATING SYSTEMS DESIGN	PC	3	0	2	0	4	5	COA	CSE				4						
111	2CS2103A	OPERATING SYSTEMS DESIGN	PC	3	0	2	2	4.5	7	COA	CSE										
112	21CS2103P	OPERATING SYSTEMS DESIGN	PC	4	0	4	2	6.5	10	COA	CSE										
113	21CS2103O	OPERATING SYSTEMS DESIGN	PC	4	0	4	2	6.5	10	COA	CSE										
114	21CS2109	COMPUTER NETWORKS & SECURITY	PC	3	1	0	0	4	7	NIL	CSE,CSIT				4	4					
115	21CS2109A	COMPUTER NETWORKS & SECURITY	PC	4	1	2	0	6	7	NIL	CSE										
116	21CS2109P	COMPUTER NETWORKS & SECURITY	PC	4	1	2	0	6	4	NIL	CSE										
117	21CS2206	AI FOR DATA SCIENCE	PC	3	0	2	4	5	9	MFC	CSE				5						
118	21CS2206A	AI FOR DATA SCIENCE	PC	4	0	4	4	7	12	MFC	CSE										
119	21CS2206P	AI FOR DATA SCIENCE	PC	4	0	4	4	7	12	MFC	CSE										
120	21CS3113S	DESIGN & ANALYSIS OF ALGORITHMS	PC	3	0	2	4	5	9	DDS	CSE				5						
121	21CS3113A	DESIGN & ANALYSIS OF ALGORITHMS	PC	4	0	4	4	7	14	DDS	CSE										
122	21CS3113P	DESIGN & ANALYSIS OF ALGORITHMS	PC	4	0	4	4	7	14	DDS	CSE										
123	21CS3113O	DESIGN & ANALYSIS OF ALGORITHMS	PC	3	0	2	0	4	5	DDS	CSE										

S.No	Code	Course Title	Cat	L	T	P		Credits	Total	Prerequisite	Offered to	C1	C2	C3	C4	C5	C6	C7	C8	C9
124	21CS2107O	ENTERPRISE PROGRAMMING	PC	3	0	2	0	4	5	CTOD	AI & DS,CSE,CSIT									
125	21CS2107S	ENTERPRISE PROGRAMMING	PC	3	0	2	4	5	9	CTOD	AI & DS,CSE,CSIT	5			5	5				
126	21CS2107A	ENTERPRISE PROGRAMMING	PC	4	0	4	4	7	12	CTOD	AI & DS,CSE,CSIT									
127	21CS2107P	ENTERPRISE PROGRAMMING	PC	4	0	4	4	7	12	CTOD	AI & DS,CSE,CSIT									
128	21EC2103	Analog Electronic Circuit Design	PC	3	0	2	2	4.5	7	Nil	ECE							4.5		
129	21EC2104	Communication Signals & System Design	PC	3	1	0	0	4	4	Nil	ECE							4		
130	21EC2105	Analog and Digital Communication	PC	3	0	3	0	4.5	6	Nil	ECE							4.5		
131	21EC2106	Embedded Controllers & Embedded Systems Design	PC	3	0	2	2	4.5	7	Nil	ECE,EEE							4.5		4.5
132	21EC2207	Electomagnetic Fields & Applications	PC	3	1	0	0	4	4	Nil	ECE							4		
133	21EC2208	Digital Signal Processing	PC	3	0	2	0	4	5	Nil	ECE							4		
134	21EC2209A	Statistics, AI & ANN	PC	3	0	0	2	3.5	5	Nil	ECE							3.5		
135	21EC2209	AI, ANN Tools and Applications	PC	3	0	0	0	3	3	Nil	ECE							3		
136	21EC2210	Data Networks & Protocols	PC	3	0	2	0	4	5	Nil	ECE,ECS							4	4	

No	Code	Title	Cat	L	T	P	S	C		Prereq	Dept										
137	21EL2103	Operating Systems	PC	2	0	2	2	3.5	6		ECS								3.5		
138	21EL2104	Software Engineering	PC	2	1	0	0	3	3		ECS								3		
139	21EC2103	Analog Electronic Circuit Design	PC	3	0	2	0	4	5		ECS								4		
140	21EC2106	Embedded Controller & Embedded system Design	PC	3	0	2	2	4.5	7		ECS								4.5		
141	21EL2204	Artificial Intelligence	PC	2	0	2	2	3.5	6		ECS								3.5		
142	21EL2201	Web application Development	PC	2	0	2	2	3.5	6		ECS								3.5		
143	21EL2205	Data Science	PC	2	0	2	2	3.5	6		ECS								3.5		
144	21EL2202	Signal Processing	PC	3	0	2	0	4	5	Nil	EEE										4
145	21EE2102	Electrical Power Engineering	PC	3	1	0	0	4	4	Nil	EEE										4
146	21EE2103	Electrical Machines	PC	3	0	2	0	4	7	Nil	EEE										4
147	21EE2201	Industrial Applications of Electrical Machines	PC	3	0	2	0	4	5	21EE2103	EEE										4
148	21EE2202	Power Electronics	PC	3	0	2	0	4	7	20EE1201	EEE										4
149	21EE2203	Computer Applications in Power Systems	PC	3	0	2	0	4	5	21EE2102	EEE										4

No	Code	Course	Cat	L	T	P		Cr	Hr	Prereq	Dept										
150	21EE2204	Control Systems	PC	3	0	2	0	4	7	Nil	EEE										4
151	21EC2103	Analog Electronic Circuit Design	PC	3	0	2	2	4.5	7	Nil	IoT,EEE									4.5	4.5
152	21EC2105	Analog and Digital Communication	PC	3	0	3	0	4.5	6	Nil	IoT									4.5	
153	21IN2103	Embedded Controllers, SoCs & IoTs	PC	3	0	2	0	4.5	5	Nil	IoT									4.5	
154	21IN2204	IoTs & Smart Cities Basic Course	PC	3	1	0	0	4	4	Nil	IoT									4	
155	21IN2205	Digital Signal Analysis & Applications	PC	3	0	2	0	4	5	Nil	IoT									4	
156	21EC2209	Statistics, AI & ANN	PC	3	0	0	2	3.5	5	Nil	IoT									3.5	
157	21IN2206	Data Networks, WSN and Protocols	PC	3	0	2	0	4	5	Nil	IoT									4	
158	21IN2207	Edge ,Cloud Computing and Analytics	PC	3	0	2	0	4	5	Nil	IoT									4	
159	20ME2101	Mechanics of Solids	PC	3	0	2	0	4	5	20PH1010	Mechanical								4		
160	20ME2106	Fluid Mechanics & Hydraulic Machines	PC	3	0	2	0	4	5	Nil	Mechanical								4		
161	20ME2107	Manufacturing Techniques	PC	3	0	2	0	4	5	Nil	Mechanical								4		
162	20ME2208	Mechanical Engineering Design & Innovation	PC	3	0	2	4	5	9	20ME2101	Mechanical								5		

				L	T	P		C													
163	20ME 2210	Analysis of Thermal Systems	PC	3	1	0	4	5	8	20M E210 5	Mechanical								5		
164	20ME 2211	Analysis of Mechanisms and Machines	PC	3	0	2	0	4	5	20PH 1010	Mechanical								4		
165	20ME 2212	Production Technology	PC	1	0	0	4	2	5	Nil	Mechanical								2		
166	20ME 3113	Machine Design	PC	3	1	0	4	5	8	20M E220 8	Mechanical								5		
167	20ME 3114	Industry 4.0 & Design of Cyber Physical Systems	PC	3	0	0	4	4	7	Nil	Mechanical								4		
168	20ME 3115	Heat Transfer	PC	3	0	2	0	4	5	Nil	Mechanical								4		
169	20ME 3217	Production and Operations Management	PC	2	0	0	0	2	2	Nil	Mechanical								2		
TOTAL												**40**	**40**	**32**	**31**	**31**	**36**	**33 .5**	**43**	**33**	**37**
170	PE-1	Professional Elective-1	PE	3	0	0	0	3	3		AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	3	3	3	3	3	3	3	3	3	3
171	PE-2	Professional Elective-2	PE	2	0	0	4	3	3		AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	3	3	3	3	3	3	3	3	3	3
172	PE-3	Professional Elective-3	PE	2	0	2	0	3	3		AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	3	3	3	3	3	3	3	3	3	3

S.No	Code	Course Name	Cat	L	T	P		C		Prereq	Offered to										
173	PE-4	Professional Elective-4	PE	1	0	2	4	3	3		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
174	PE-5	Professional Elective-5	PE	1	1	2	0	3	3		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
TOTAL												**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**	**15**
175	OE-1	Open Elective-1	OE	3	0	0	0	3			AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
176	OE-2	Open Elective-2	OE	3	0	0	0	3			AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
177	ME	Management Elective	ME	3	0	0	0	3			AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
TOTAL												**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
178	20TS 3202	Technical Proficiency / Technopreneurship	TS	0	0	0	1 2	3	1 2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3
179	20TS 4103	Technical Proficiency / Entrepreneural Skilling	TS	0	0	0	1 2	3	1 2	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	3	3	3	3	3	3	3	3	3	3

No	Code	Title	Cat	L	T	P				Prereq	Branches										
18 0	20TS 4204	Technical Proficiency / Entrepreneural Skilling	TS	0	0	0	1 2	3	1 2	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	3	3	3	3	3	3	3	3	3	3
TOTAL												**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**
18 1	FC-1	FLEXI-CORE-1		3	0	2	0	4	5	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	4	4		4		4	4	4	4	4
18 2	FC-2	FLEXI-CORE-2		2	0	2	8	4	1 2	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	4	4		4		4	4		4	4
18 3	FC-3	FLEXI-CORE-3		3	0	0	4	4	7	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME						4			4	
TOTAL												**8**	**8**	**0**	**8**	**0**	**12**	**8**	**4**	**12**	**8**
18 1	21IE2 040	Social Internship		0	0	0	8	2	8	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	2	2	2	2	2	2	2	2	2	2
18 2	21IE3 041	Technical Internship		0	0	0	8	2	8	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	2	2	2	2	2	2	2	2	2	2
18 3	21IE4 042	Research Internship		0	0	0	8	2	8	NIL	AI &DS,BT,CE,CSE,C SIT,ECE,ECS,EEE,I OT,ME	2	2	2	2	2	2	2	2	2	2

No	Code	Name			L	T	P				Prereq	Programs											
184	21IE3043	Term Paper			0	0	0	8	2	4	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
185	21IE3044	MIDGRADE CAPSTONE PROJECT 1			0	0	0	8	2	8	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
186	21IE3045	MIDGRADE CAPSTONE PROJECT 2			0	0	0	8	2	8	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	2	2	2	2	2	2	2	2	2	2
187	21IE4048	CAPSTONE PROJECT 1			0	0	0	24	6	24	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	6	6	6	6	6	6	6	6	6	6
188	21IE4049	CAPSTONE PROJECT 2			0	0	0	24	6	24	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME	6	6	6	6	6	6	6	6	6	6
189	21IE4050	PRACTICE SCHOOL			0	0	0	24	6	24	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME										
190	21IE4051	INTERNSHIP-1			0	0	0	24	6	24	NIL	AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME										
191	21IE4052	INTERNSHIP-2			0	0	0	24	6	24		AI &DS,BT,CE,CSE,CSIT,ECE,ECS,EEE,IOT,ME										

										24	24	24	24	24	24	24	24	24	24
TOTAL																			
Total Credits										174.75	175.75	176.75	165.75	157.75	178.25	162.75	175.75	176.25	173.25
	FLEXI-CORE																		
21BT 2106	MICROBIOLOGY	3	0	2	0	4	5		BT		4								
21BT 2107	BIOANALYTICAL TECHNIQUES	3	0	2	0	4	5		BT		4								
20BT 2110	MEDICAL LAB TECHNOLOGY	3	0	2	0	4	5		BT		4								
20BT 2111	ADVANCED INSTRUMENTATION	3	0	2	0	4	5		BT		4								
20BT 2112	ANIMAL CELL CULTURE	3	0	2	0	4	5		BT		4								
20BT 2113	PROCESS ENGINEERING TOOLS	3	0	2	0	4	5		BT		4								
21EE3 101	AI TECHNIQUES IN ELECTRICAL ENGINEERING	3	1	0	0	4	4		EEE										4
21EE3 102	ELECTRIC DRIVES	3	1	0	0	4	4		EEE										4
21EE3 104	GREEN ENERGY FUNDAMENTALS	4	0	0	0	4	4		EEE										4
21EE3 108	UTILISATION OF ELECTRICAL ENERGY	3	1	0	0	4	4		EEE										4
21EE3 103	RESTRUCTERED POWER SYSTEMS	3	1	0	0	4	4		EEE										4
21ME 3116	ROBOTICS & ARTIFICIAL INTELLIGENCE	3	0	2	0	4	5		EEE										4

Code	Course		L	T	P		C		Dept												
21CS2 108	DATA BASE MANAGEMENT SYSTEMS		3	0	2	0	4	5		EEE											4
21CS2 109	COMPUTER NETWORKS & SECURITY		3	1	0	0	4	4		EEE											4
20EE3 201	CUSTOM POWER DEVICES		3	1	0	0	4	4		EEE											4
21EE3 105	ELECTRIC VEHICLE TECHNOLOGY		4	0	0	0	4	4		EEE											4
21EE3 106	SENSORS AND INTERNET OF THINGS		3	0	2	0	4	5		EEE											4
21EE3 107	SWITCHED MODE POWER SUPLLIES		4	0	0	0	4	4		EEE											4
21EC 3109	DATA NETWORKS AND PROTOCOLS		3	1	0	0	4	4		EEE											4
21EC 3016	WIRELESS COMMUNICATIONS		3	1	0	0	4	4		EEE											4
21EM 5101	FUNDAMENTALS OF INTERNET OF THINGS		3	1	0	0	4	4		EEE											4
21EM 5104	WEB INTELLIGENCE		3	1	0	0	4	4		EEE											4
21ME 4102	DATA ANALYSIS		3	0	2	0	4	5		EEE											4
21CS2 212	ARTIFICIAL INTELLIGENCE		3	0	2	0	4	5		EEE											4
21CS2 211	SOFTWARE ENGINEERING		3	1	0	0	4	4		EEE											4
21CS3 040	CRYPTO ANALYSIS AND CYBER DEFENSE		3	0	2	0	4	5		EEE											4
20ME 3221	Oops through Java		3	0	2	0	4	5		Mechanical										4	

Code	Title									Dept											
20ME 3222	R Programming		3	0	2	0	4	5		Mechanical									4		
20ME 3223	Python Programming		3	0	2	0	4	5		Mechanical									4		
20ME 3224	Machine Learning		3	0	2	0	4	5		Mechanical									4		
20ME 3225	Mechanical Vibrations		3	0	2	0	4	5		Mechanical									4		
20ME 3226	Heat Power Engineering		3	0	2	0	4	5		Mechanical									4		
20ME 3216	Artificial Intelligence and Data Analytics		3	0	2	0	4	5	Nil	Mechanical									4		
21CS 3115	Embedded Systems		3	0	2	0	4	5		CSE					4						
21CS 3115 P	Embedded Systems		4	0	4	0	6	8		CSE					6						
21CS 3063	UX Design		3	2	0	0	5	5		CSE					5						
21CS 3063 P	UX Design		4	2	2	0	7	8		CSE					7						
21CS 2210	Parallel & Distributed Computing		3	0	2	0	4	5		CSE					4						
21CS 2210 P	Parallel & Distributed Computing		4	0	4	0	6	8		CSE					6						
21CS 3060	Continuous Delivery & DevOps		3	0	2	0	4	5		CSE					4						
21CS 3060 P	Continuous Delivery & DevOps		4	0	4	0	6	8		CSE					6						

Code	Name									Dept										
21CS3116	Signal Processing		3	2	0	0	5	5		CSE				5						
21CS3116 P	Signal Processing		4	2	2	0	7	8		CSE				7						
21CS3036	Cloud Infrastructure & Services		3	0	2	0	4	5		CSE				4						
21CS3036 P	Cloud Infrastructure & Services		4	0	4	0	6	8		CSE				6						
21CS3214	Automata Theory & Compiler Design		3	2	0	0	5	5		CSE				5						
21CS3214 P	Automata Theory & Compiler Design		4	2	2	0	7	8		CSE				7						
21CS3040	Crypt Analysis & Cyber Defense		3	0	2	0	4	5		CSE				4						
21CS3040 P	Crypt Analysis & Cyber Defense		4	0	4	0	6	8		CSE				6						
21EL4105	MACHINE LEARNING		2	0	2	4	4	8		ECS							4			
21EL3101	FUNDAMENTALS OF INTERNET OF THINGS		2	0	2	4	4	8		ECE,CSE,EEE,AI&DS,CS&IT	4			4	4		4			4
21EL3110	EMBEDDED SYSTEM DESIGN WITH ARM		2	0	2	4	4	8		ECS							4			
21EL3109	WEB INTELLIGENCE		2	0	2	4	4	8		ECE,CSE,AI&DS,CS&IT				0						
21EL4106	VLSI DESIGN		2	0	2	4	4	8		ECS										

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	21EL 4107	DATA WAREHOUSING & MINING		2	0	2	4	4	8		ECS												
	21AD 3113	Cloud & Edge Computing		3	0	2	0	4	5		AI&DS	4										
	21AD 3114	Automata Theory & Compiler Design		3	0	2	0	4	5		AI&DS											
	21AD 3115	Network Security		3	0	2	0	4	5		AI&DS											
	21AD 3116	Continuous Delivery & DevOps		3	0	2	0	4	5		AI&DS	4										
	21AD 3117	Web Engineering		3	0	2	0	4	5		AI&DS											
	21AD 3118	Visual Programming and HCI (UI/UX)		3	0	2	0	4	5		AI&DS											

Professional Electives

Specialization Name: Genetic Engineering							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21BT3051	Molecular Genetics	3	0	0	0	3
2	21BT3052	Transgenic Technology	3	0	0	0	3
3	21BT3053	Molecular Expression Technology	3	0	0	0	3
4	21BT3054	Genomics and Proteomics	3	0	0	0	3
5	21BT3055	Molecular markers and Diagnostics	3	0	0	0	3
6	21BT3056	Gene and the Environment	3	0	0	0	3
7	21BT3057	Microbial Genetics	3	0	0	0	3
8	21BT3058	DNA Forensics	3	0	0	0	3
Specialization Name: Industrial Biotechnology							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21BT3061	Microbial Technology	3	0	0	0	3
2	21BT3062	Pharmaceutical Biotechnology	3	0	0	0	3
3	21BT3063	Metabolic Engineering	3	0	0	0	3
4	21BT3064	Bioresource Technology	3	0	0	0	3
5	21BT3065	Bioprocess Economics and Plant Design	3	0	0	0	3
6	21BT3066	Enzyme Engineering	3	0	0	0	3
7	21BT3067	Bioprocess Validation and cGMP	3	0	0	0	3
8	21BT3068	Food Technology	3	0	0	0	3
9	21BT3069	Pharmacovigilance and Safety	3	0	0	0	3
Specialization Name: Bioinformatics							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21BT3071	PERL and Bioperl programming	3	0	0	0	3
2	21BT3072	Biomedical Informatics	3	0	0	0	3
3	21BT3073	Molecular Modelling and Drug Design	3	0	0	0	3
4	21BT3074	Structural Biology	3	0	0	0	3
5	21BT3075	Systems Biology	3	0	0	0	3
6	21BT3076	Applied Bioinformatics	3	0	0	0	3
7	21BT3077	Python and R Programming	3	0	0	0	3
8	21BT3078	Data Base Management System	3	0	0	0	3

Specialization Name: Medical Biotechnology							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21BT3081	Stem cell technology	3	0	0	0	3
2	21BT3082	Healthcare Biotechnology	3	0	0	0	3
3	21BT3083	Cancer Biology	3	0	0	0	3
4	21BT3084	Neurobiology	3	0	0	0	3
5	21BT3085	Bioelectronics & Biosensors	3	0	0	0	3
6	21BT3086	Tissue Engineering	3	0	0	0	3
7	21BT3087	Virology	3	0	0	0	3
8	21BT3088	Nanobiotechnology	3	0	0	0	3
Specialization Name : Structural Engineering							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CE3211	Advanced Structural Analysis	3	0	0	0	3
2	21CE3221	Advanced Design of Reinforced Concrete Structures	3	0	0	0	3
3	21CE3231	Prestressed concrete	3	0	0	0	3
4	21CE4141	Bridge engineering	3	0	0	0	3
5	21CE4151	Precast and Prefabricated structures	3	0	0	0	3
Specialization Name : Geotechnical Engineering							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CE3212	Foundation engineering	3	0	0	0	3
2	21CE3222	Ground improvement techniques	3	0	0	0	3
3	21CE3232	Design of earth retaining structures	3	0	0	0	3
4	21CE4142	Geotechnical earthquake engineering	3	0	0	0	3
5	21CE4153	Forensics in Civil Engineering	3	0	0	0	3
Specialization Name : Water resourse & Environmental Engineering							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CE3213	Sustainable engineering & technology	3	0	0	0	3
2	21CE3223	Environmental impact assessment and life cycle analyses	3	0	0	0	3
3	21CE3233	Solid Waste Management and Landfills	3	0	0	0	3

4	21CE3214	River engineering	3	0	0	0	3
5	21CE3224	Urban water hydrology and hydraulics	3	0	0	0	3

Specialization Name : Transportation Engineering

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CE3215	Intelligent transportation systems	3	0	0	0	3
2	21CE3225	Pavement materials &design	3	0	0	0	3
3	21CE3235	Traffic engineering and management	3	0	0	0	3
4	21CE4145	Urban transportation systems planning.	3	0	0	0	3
5	21CE4155	Railway engineering airport planning and design	3	0	0	0	3

Specialization Name : Construction Technology & Management

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CE3216	Projects& Contract management	3	0	0	0	3
2	21CE3226	Quality and Safety Management	3	0	0	0	3
3	21CE3236	Form Work	3	0	0	0	3
4	21CE4146	Construction Economics	3	0	0	0	3
5	21CE4156	Sustainable Construction Technology	3	0	0	0	3

Specialization Name : SMART GRID TECHNOLOGIES

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21EE3131	DISTRIBUTION SYSTEM PRACTICES	3	0	0	0	3
2	21EE3132	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	3	0	0	0	3
3	21EE3133	ENERGY MANAGEMENT SYSTEMS AND SCADA	2	1	0	0	3
4	21EE3231	SMART GRID COMMUNICATION AND CYBERSECURITY	3	0	0	0	3
5	21EE3232	INTERNET OF THINGS AND SMART GRID ANALYTICS	2	1	0	0	3

Specialization Name : GREEN ENERGY TECHNOLOGIES							
Sl No	**Course Code**	**Course Title**	**L**	**T**	**P**	**S**	**Cr**
1	21EE3121	SOLAR AND MICRO ENERGY TECHNOLOGIES	3	0	0	0	3
2	21EE3122	WIND AND ENERGY STORAGE TECHNOLOGIES	3	0	0	0	3
3	21EE3123	ENERGY MANAGEMENT AND GREEN BUILDINGS	3	0	0	0	3
4	21EE3221	AI AND IOT FOR GREEN ENERGY INTEGRATION	3	0	0	0	3
5	21EE3222	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	3	0	0	0	3
Specialization Name : ELECTRIC VEHICLE TECHNOLOGIES							
Sl No	**Course Code**	**Course Title**	**L**	**T**	**P**	**S**	**Cr**
1	21EE3141	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	3	0	0	0	3
2	21EE3142	BATTERY STATE ESTIMATION ALGORITHMS FOR ELECTRIC VEHICLE	3	0	0	0	3
3	21EE3143	CHARGING STATIONS FOR ELECTRIC VEHICLES	3	0	0	0	3
4	21EE3241	AI AND IOT FOR ELECTRIC VEHICLE	3	0	0	0	3
5	21EE3242	INDUSTRIAL ROLE OF ELECTRIC VEHICLE ENGINEERS	3	0	0	0	3
Specialization Name : INDUSTRIAL AUTOMATION							
Sl No	**Course Code**	**Course Title**	**L**	**T**	**P**	**S**	**Cr**
1	21EE3111	INDUSTRIAL AUTOMATION AND ROBOTICS	3	0	0	0	3
2	21EE3112	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	3	0	0	0	3
3	21EE3113	INDUSTRIAL DRIVES AND CONTROL	3	0	0	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
4	21EE3211	INDUSTRIAL COMMUNICATION PROTOCOLS AND CYBER SECURITY	3	0	0	0	3
5	21EE3212	SMART SENSORS AND SMART NETWROKING	3	0	0	0	3

Specialization Name: Engineering Design

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20ME4051	Theory of Elasticity and Plasticity	3	0	0	0	3
2	20ME4052	Dynamics of Multi Body Systems	2	0	2	0	3
3	20ME4053	Modeling, Analysis and Design of Robotic Systems	2	0	2	0	3
4	20ME4054	Creep, Fatigue and Fracture Mechanics	3	0	0	0	3
5	20ME4055	Advanced Strength of Materials	2	0	2	0	3
6	20ME4056	Mechanics of Composites	2	0	2	0	3
7	20ME4057	Sustainable Design & Social Innovation in Engineering Design	1	0	4	0	3

Specialization Name: Smart Manufacturing

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20ME4061	Modern Manufacturing Processes	2	0	2	0	3
2	20ME4062	Additive Manufacturing	2	0	2	0	3
3	20ME4063	Advanced Materials	3	0	0	0	3
4	20ME4064	Flexible Manufacturing Systems	2	0	2	0	3
5	20ME4065	Robotics & Industrial Automation	2	0	2	0	3
6	20ME4066	Reverse Engineering	3	0	0	0	3
7	20ME4067	Sustainable Design & Social Innovation in Smart Manufacturing	1	0	4	0	3

Specialization Name: Automobile Engineering

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20ME4071	Automobile Engineering	2	0	2	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
2	20ME4072	Hybrid & Electric Vehicle Design	2	0	2	0	3
3	20ME4073	Autotronics & Safety	2	0	2	0	3
4	20ME4074	Robotics & Industrial Automation	2	0	2	0	3
5	20ME4075	Automotive Electrical and Electronics System	2	0	2	0	3
6	20ME4076	Automobile Engine System and Performance	2	0	2	0	3
7	20ME4077	Sustainable Design & Social Innovation in Automobile Engineering	1	0	4	0	3

Specialization Name:Autotronics

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20ME4081	Autotronics	2	0	2	0	3
2	20ME4082	Automotive Sensor and Applications	2	0	2	0	3
3	20ME4083	Electronic Engine Management System	2	0	2	0	3
4	20ME4084	Instrumentation in Automotive Industries	2	0	2	0	3
5	20ME4085	Autotronics and Vehicle Intelligence	2	0	2	0	3
6	20ME4086	Autonomous Vehicle Design	2	0	2	0	3
7	20ME4087	Sustainable Design & Social Innovation in Autotronics	1	0	4	0	3

Specialization Name:Product Design

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20ME4091	Design for Quality and Reliability	3	0	0	0	3
2	20ME4092	Design of Agricultural Products & Machinery	3	0	0	0	3
3	20ME4093	Designing Intelligence Systems	3	0	0	0	3
4	20ME4094	Sustainable Design	3	0	0	0	3
5	20ME4095	Systems Thinking for Design	3	0	0	0	3
6	20ME4096	Design with Advanced Engineering Materials	3	0	0	0	3
7	20ME4097	Sustainable Design & Social Innovation in Product Design	1	0	4	0	3

Specialization Name :AI & IPA							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3021S	Machine Learning	2	0	2	4	4
2	21CS3021A	Machine Learning	3	0	4	4	6
3	21CS3021P	Machine Learning	3	0	4	4	6
4	21CS3021O	Machine Learning	2	0	2	0	3
5	21CS3022	Soft Computing (CI)	2	0	2	0	3
6	21CS3022P	Soft Computing (CI)	3	0	4	0	5
7	21CS3026	Artificial Neural Networks (CI)	2	0	2	0	3
8	21CS3026P	Artificial Neural Networks (CI)	3	0	4	0	5
9	21CS3074	Deep Learning	2	0	2	0	3
10	21CS3074S	Deep Learning	2	0	2	4	4
11	21CS3074A	Deep Learning	3	0	4	4	6
12	21CS3074P	Deep Learning	3	0	4	4	6
13	21CS3167	Natural Language Processing	2	0	2	0	3
14	21CS3167P	Natural Language Processing	3	0	4	0	5
15	21CS3168	Perception & Computer Vision	2	0	2	0	3
17	21CS3168P	Perception & Computer Vision	3	0	4	0	5
18	21CS3272	Cognitive Computing	3	0	0	0	3
Specialization Name: DS & BDA							
Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3051S	Data Visualisation Techniques	2	0	2	4	4
2	21CS3051A	Data Visualisation Techniques	3	0	4	4	6
3	21CS3051P	Data Visualisation Techniques	3	0	4	4	6
4	21CS3051O	Data Visualisation Techniques	2	0	2	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
5	21CS3056S	Functional & Concurrent Programming	2	0	2	4	4
6	21CS3056A	Functional & Concurrent Programming	3	0	4	4	6
7	21CS3056P	Functional & Concurrent Programming	3	0	4	4	6
8	21CS3056O	Functional & Concurrent Programming	2	0	2	0	3
9	21CS3052R	Data Warehousing & Mining	2	0	2	0	3
10	21CS3052P	Data Warehousing & Mining	3	0	4	0	5
11	21CS3065	Big Data Analytics	2	0	2	0	3
12	21CS3065S	Big Data Analytics	2	0	2	4	4
13	21CS3065A	Big Data Analytics	3	0	4	4	6
14	21CS3065P	Big Data Analytics	3	0	4	4	6
15	21CS3064	Big Data Optimization	2	0	2	0	3
16	21CS3064P	Big Data Optimization	3	0	4	0	5
17	21CS3260	Graph & Web Analytics	2	0	2	0	3
18	21CS3260P	Graph & Web Analytics	3	0	4	0	5
19	21CS3158	Advance Databases	3	0	0	0	3

Specialization Name:CYS & BCT

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3041S	Crypt Analysis & Cyber Defense	2	0	2	4	4
2	21CS3041A	Crypt Analysis & Cyber Defense	3	0	4	4	6
3	21CS3041P	Crypt Analysis & Cyber Defense	3	0	4	4	6
4	21CS3041O	Crypt Analysis & Cyber Defense	2	0	2	0	3
5	21CS3042	Network & Infrastructure Security	2	0	2	0	3
6	21CS3042P	Network & Infrastructure Security	3	0	4	0	5
7	21CS3045	Introduction to Blockchain & Crypto Currencies	2	0	2	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
8	21CS3045P	Introduction to Blockchain & Crypto Currencies	3	0	4	0	5
9	21CS3176	Digital Forensics	2	0	2	0	3
10	21CS3176S	Digital Forensics	2	0	2	4	4
11	21CS3176A	Digital Forensics	3	0	4	4	6
12	21CS 3176P	Digital Forensics	3	0	4	4	6
13	21CS 3278	Database & Systems Security	2	0	2	0	3
14	21CS 3278P	Database & Systems Security	3	0	4	0	5
15	21CS3084	Blockchain & Crypto Currencies	2	0	2	0	3
16	21CS3084P	Blockchain & Crypto Currencies	3	0	4	0	5
17	21CS3281	Secure Software Engineering	3	0	0	0	3

Specialization Name:CEC

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3056S	Functional & Concurrent Programming	2	0	2	4	4
2	21CS3056A	Functional & Concurrent Programming	3	0	4	4	6
3	21CS3056P	Functional & Concurrent Programming	3	0	4	4	6
4	21CS3056O	Functional & Concurrent Programming	2	0	2	0	3
5	21CS3037S	Cloud Infrastructure & Sevices	2	0	2	4	4
6	21CS3037A	Cloud Infrastructure & Sevices	3	0	4	4	6
7	21CS3037P	Cloud Infrastructure & Sevices	3	0	4	4	6
8	21CS3037O	Cloud Infrastructure & Sevices	2	0	2	0	3
9	21CS3032	Advanced Operating Systems	2	0	2	0	3
10	21CS3032P	Advanced Operating Systems	3	0	4	0	5
11	21CS3038	High Performance Computing	2	0	2	0	3
12	21CS3038P	High Performance Computing	3	0	4	0	5
13	21CS3253	Cloud System Infrastructure	2	0	2	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
14	21CS3253S	Cloud System Infrastructure	2	0	2	4	4
15	21CS3253A	Cloud System Infrastructure	3	0	4	4	6
16	21CS3253P	Cloud System Infrastructure	3	0	4	4	6
17	21CS3242	Parallel Algorithms	2	0	2	0	3
18	21CS3242P	Parallel Algorithms	3	0	4	0	5
19	21CS3150	Advance Computer Architecture	2	0	2	0	3
20	21CS3150P	Advance Computer Architecture	3	0	4	0	5
21	21CS3248	Edge Computing	3	0	0	0	3

Specialization Name: SM & DPS

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3062S	Software Verification & Valuation	2	0	2	4	4
2	21CS3062A	Software Verification & Validation	3	0	4	4	6
3	21CS3062P	Software Verification & Validation	3	0	4	4	6
4	21CS3062O	Software Verification & Validation	2	0	2	0	3
5	21CS3065S	Design Patterns & Clean Coding Techniques	2	0	2	4	4
6	21CS3065A	Design Patterns & Clean Coding Techniques	3	0	4	4	6
7	21CS3065P	Design Patterns & Clean Coding Techniques	3	0	4	4	6
8	21CS3065O	Design Patterns & Clean Coding Techniques	2	0	2	0	3
9	21CS3064	UX Design	2	0	2	0	3
10	21CS3064P	UX Design	3	0	4	0	5
11	21CS3230	Continuous Delivery & DevOps	2	0	2	0	3
12	21CS3230S	Continuous Delivery & DevOps	2	0	2	4	4
13	21CS3230A	Continuous Delivery & DevOps	3	0	4	4	6

Sl No	Course Code	Course Title	L	T	P	S	Cr
14	21CS3230P	Continuous Delivery & DevOps	3	0	4	4	6
15	21CS3233	UI/UX Design	2	0	2	0	3
16	21CS3233P	UI/UX Design	3	0	4	0	5
17	21CS3131	Design Patterns	2	0	2	0	3
18	21CS3131P	Design Patterns	3	0	4	0	5
19	21CS3236	Software Project Management	3	0	0	0	3

Specialization Name: GUX

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21CS3071S	Programming for Game Development	2	0	2	4	4
2	21CS3071A	Programming for Game Development	3	0	4	4	6
3	21CS3071P	Programming for Game Development	3	0	4	4	6
4	21CS3071O	Programming for Game Development	2	0	2	0	3
5	21CS3064	UX Design	2	0	2	0	3
6	21CS3064P	UX Design	3	0	4	0	5
7	21CS3286	AR & VR Application Development	2	0	2	0	3
8	21CS3286S	AR & VR Application Development	2	0	2	4	4
9	21CS3286A	AR & VR Application Development	3	0	4	4	6
10	21CS3286P	AR & VR Application Development	3	0	4	4	6
11	21CS3287	Digital Media Processing	2	0	2	0	3
12	21CS3288	Principles of Game Design	3	0	0	0	3
13	21CS3289	Business of Games & Entrepreneurship	3	0	0	0	3

Specialization Name: AI & IPA

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3021S	Machine Learning	2	0	2	4	4
2	20CS3021A	Machine Learning	3	0	4	4	6

Sl No	Course Code	Course Title	L	T	P	S	Cr
3	20CS3021P	Machine Learning	3	0	4	4	6
4	20CS3021O	Machine Learning	2	0	2	0	3
5	20CS3022	Soft Computing (CI)	2	0	2	0	3
6	20CS3022P	Soft Computing (CI)	3	0	4	0	5
7	20CS3026	Artificial Neural Networks (CI)	2	0	2	0	3
8	20CS3026P	Artificial Neural Networks (CI)	3	0	4	0	5

Specialization Name: DS & BDA

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3051S	Data Visualisation Techniques	2	0	2	4	4
2	20CS3051A	Data Visualisation Techniques	3	0	4	4	6
3	20CS3051P	Data Visualisation Techniques	3	0	4	4	6
4	20CS3051O	Data Visualisation Techniques	2	0	2	0	3
5	20CS3056S	Functional & Concurrent Programming	2	0	2	4	4
6	20CS3056A	Functional & Concurrent Programming	3	0	4	4	6
7	20CS3056P	Functional & Concurrent Programming	3	0	4	4	6
8	20CS3056O	Functional & Concurrent Programming	2	0	2	0	3
9	20CS3052R	Data Warehousing & Mining	2	0	2	0	3
10	20CS3052P	Data Warehousing & Mining	3	0	4	0	5

Specialization Name: CYS & BCT

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3041S	Crypt Analysis & Cyber Defense	2	0	2	4	4
2	20CS3041A	Crypt Analysis & Cyber Defense	3	0	4	4	6
3	20CS3041P	Crypt Analysis & Cyber Defense	3	0	4	4	6

Sl No	Course Code	Course Title	L	T	P	S	Cr
4	20CS3041O	Crypt Analysis & Cyber Defense	2	0	2	0	3
5	20CS3042	Network & Infrastructure Security	2	0	2	0	3
6	20CS3042P	Network & Infrastructure Security	3	0	4	0	5
7	20CS3045	Introduction to Blockchain & Crypto Currencies	2	0	2	0	3
8	20CS3045P	Introduction to Blockchain & Crypto Currencies	3	0	4	0	5

Specialization Name: CEC

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3056S	Functional & Concurrent Programming	2	0	2	4	4
2	20CS3056A	Functional & Concurrent Programming	3	0	4	4	6
3	20CS3056P	Functional & Concurrent Programming	3	0	4	4	6
4	20CS3056O	Functional & Concurrent Programming	2	0	2	0	3
5	20CS3037S	Cloud Infrastructure & Sevices	2	0	2	4	4
6	20CS3037A	Cloud Infrastructure & Sevices	3	0	4	4	6
7	20CS3037P	Cloud Infrastructure & Sevices	3	0	4	4	6
8	20CS3037O	Cloud Infrastructure & Sevices	2	0	2	0	3
9	20CS3032	Advanced Operating Systems	2	0	2	0	3
10	20CS3032P	Advanced Operating Systems	3	0	4	0	5
11	20CS3038	High Performance Computing	2	0	2	0	3
12	20CS3038P	High Performance Computing	3	0	4	0	5

Specialization Name: SM & DPS

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3062S	Software Verification & Valuation	2	0	2	4	4
2	20CS3062A	Software Verification & Validation	3	0	4	4	6

Sl No	Course Code	Course Title	L	T	P	S	Cr
3	20CS3062P	Software Verification & Validation	3	0	4	4	6
4	20CS3062O	Software Verification & Validation	2	0	2	0	3
5	20CS3065S	Design Patterns & Clean Coding Techniques	2	0	2	4	4
6	20CS3065A	Design Patterns & Clean Coding Techniques	3	0	4	4	6
7	20CS3065P	Design Patterns & Clean Coding Techniques	3	0	4	4	6
8	20CS3065O	Design Patterns & Clean Coding Techniques	2	0	2	0	3
9	20CS3064	UX Design	2	0	2	0	3
10	20CS3064P	UX Design	3	0	4	0	5

Specialization Name: GUX

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CS3071S	Programming for Game Development	2	0	2	4	4
2	20CS3071A	Programming for Game Development	3	0	4	4	6
3	20CS3071P	Programming for Game Development	3	0	4	4	6
4	20CS3071O	Programming for Game Development	2	0	2	0	3
5	20CS3064	UX Design	2	0	2	0	3
6	20CS3064P	UX Design	3	0	4	0	5

Specialization Name: Cross Platform Development Technologies

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CI3010	Flutter	2	0	2	4	4
2	20CI3011	React Native	2	0	2	4	4
3	20CI3012	Xamarin	2	0	2	4	4
4	20CI3013	SCALA	2	0	2	4	4
5	20CI3014	Unity 3D	2	0	2	4	4
6	20CI3015	Ionic	2	0	2	4	4

Specialization Name: Management Information systems

Sl No	Course Code	Course Title	L	T	P	S	Cr

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20CI3016	Business Foundations for IT	2	0	2	4	4
2	20CI3017	Information Systems Analysis and Design	2	0	2	0	3
3	20CI3018	System Security Management	2	0	2	0	3
4	20CI3019	Project Management	3	0	4	4	6
5	20CI3020	Business Intelligence	2	0	2	0	3
6	20CI3021	Data Mining for Business Intelligence	3	0	4	4	6

Specialization Name : Web Technologies

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21EL3104	Web Programming using Python and Django	2	0	2	0	3
2	21EL3105	Fundamentals of MangoDB	2	0	2	0	3
3	21EL3205	Cloud Computing for web Engineer	2	0	2	0	3
4	21EL3206	Big data Analytics for Web Engineer	2	0	2	0	3
5	21EL3207	Essentials of Block Chain Technology	2	0	2	0	3
6	21EL3208	Robotic Process Automation	2	0	2	0	3

Specialization Name: Embedded Systems

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21EL3102	Embedded Linux	2	0	2	0	3
2	21EL3103	Hardware and software co design	2	0	2	0	3
3	21EL3211	Embedded Real Time Operating System	2	0	2	0	3
4	21EL3203	Networking of Embedded Systems	2	0	2	0	3
5	21EL3204	System on Chip	2	0	2	0	3
6	21EL4103	Embedded Security	2	0	2	0	3

Specialization Name: Internet of Things

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21EL3106	Internet of Things : Architectures and Prorocols	2	0	2	0	3
2	21EL3108	IoT Sensing and Actuating Devices	2	0	2	0	3
3	21EL3209	wireless sensor networks	2	0	2	0	3
4	21EL3210	Cloud computing for IoT	2	0	2	0	3

5	21EL4101	Industrial IoT	2	0	2	0	3
6	21EL4102	Security in Internet of Things	2	0	2	0	3

Specialization Name: Renewable energy & Smart cities

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN3051	Wireless sensor Networks & IOT Applications	3	0	0	0	3
2	21IN3052	Solar Photo-Voltaic cells & Solar Power Arrays	3	0	0	0	3
3	21IN3053	Systems for Renewable Energy & Smart Grid	3	0	0	0	3
4	21IN3054	IOT Applications & Smart Cities	3	0	0	0	3
5	21IN3055	Systems for Smart Cities & Smart Villages	3	0	0	0	3
6	21IN3056	AI Applications Design	3	0	0	0	3

Specialization Name: Artificial Intelligence & Intelligent Process Automation

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN3061	AI Applications Design	3	0	0	0	3
2	21IN3062	Computer Vision & Applications	3	0	0	0	3
3	21IN3063	HMI & BMI	3	0	0	0	3
4	21IN3064	Advanced Machine Learning, DNN & CNN	3	0	0	0	3
5	21IN3065	Automated Vehicles & Avionics	3	0	0	0	3
6	21IN3066	Data Sciences & Data Analytics	3	0	0	0	3

Specialization Name: IoT for Health care

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN3071	Biomedical Electronics & IoT in Healthcare	3	0	0	0	3
2	21IN3072	Calibrations and Designing Advanced Instruments	3	0	0	0	3
3	21IN3073	Biological & Cyber-Physical Systems	3	0	0	0	3
4	21IN3074	Electronic Instruments & Biomedical Applications	3	0	0	0	3
5	21IN3075	Autonomous Vehicles & Automotive Electronics	3	0	0	0	3
6	21IN3076	Human Machine Interface & Brain Machine Interface	3	0	0	0	3

Specialization Name: ROBOTICS & AUTOMATION

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN3081	Automated Vehicles & Avionics	3	0	0	0	3
2	21IN3082	Advanced Robotics	3	0	0	0	3
3	21IN3083	Computer Vision & Applications	3	0	0	0	3
4	21IN3084	Human Machine Interface & Brain Machine Interface	3	0	0	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr
5	21IN3085	Designing Automation Systems & Assistive Robotic Systems	3	0	0	0	3
6	21IN3086	Advanced Machine Learning, DNN & CNN	3	0	0	0	3

Specialization Name: Data Science & Big Data Analytics

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN3091	Data Sciences & Data Analytics	3	0	0	0	3
2	21IN3092	Big Data Analysis & Decision Making	3	0	0	0	3
3	21IN3093	5G Mobile, Wireless Technologies & IEEE 802 Standards	3	0	0	0	3
4	21IN3094	Cloud Computing Network Security	3	0	0	0	3
5	21IN3095	Advanced Machine Learning, DNN & CNN	3	0	0	0	3
6	21IN3096	DB+DM+DS	3	0	0	0	3

Specialization Name: Cyber Security & Block Chain Technology

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN4051	Big Data Analysis & Decision Making	3	0	0	0	3
2	21IN4052	Block Chain & Cyber Security	3	0	0	0	3
3	21IN4053	Cloud Computing Network Security	3	0	0	0	3
4	21IN4054	NLP & Sentiment Analysis	3	0	0	0	3
5	21IN4055	Advanced Machine Learning, DNN & CNN	3	0	0	0	3
6	21IN4056	DB+DM+DS	3	0	0	0	3

Specialization Name: Data Computing (AI, ANN, ML & DS)

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN4061	Data Sciences & Data Analytics	3	0	0	0	3
2	21IN4062	Big Data Analysis & Decision Making	3	0	0	0	3
3	21IN4063	AI Applications Design	3	0	0	0	3
4	21IN4064	Cloud Computing Network Security	3	0	0	0	3
5	21IN4065	Advanced Machine Learning, DNN & CNN	3	0	0	0	3
6	21IN4066	Block Chain & Cyber Security	3	0	0	0	3

Specialization Name: Data Communication & Networks

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN4071	Information Theory & Coding	3	0	0	0	3
2	21IN4072	Cloud Computing Network Security	3	0	0	0	3
3	21IN4073	4G Wireless Technologies & Cellular Communications	3	0	0	0	3
4	21IN4074	Wireless sensor Networks & IOT Applications	3	0	0	0	3
5	21IN4075	Optical and Satellite Communications	3	0	0	0	3
6	21IN4076	Next Generation Wireless Technologies (WCDMA, GPRS, GSM, UMTS)	3	0	0	0	3

Sl No	Course Code	Course Title	L	T	P	S	Cr

Specialization Name: Wireless Sensor Networks

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21IN4081	TCP/IP & Other Protocol Suite	3	0	0	0	3
2	21IN4082	Wireless sensor Networks & IOT Applications	3	0	0	0	3
3	21IN4083	VoIP Systems & Broad Band Networks	3	0	0	0	3
4	21IN4084	5G Mobile, Wireless Technologies & IEEE 802 Standards	3	0	0	0	3
5	21IN4085	Cloud-Computing & Network Security	3	0	0	0	3
6	21IN4086	IP Multimedia Sub-System & Emerging Technologies	3	0	0	0	3

Autonomous Systems

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20AD3131	Humans & Intelligent Machines	3	0	0	0	3
2	20AD3132	Robotics Software	3	0	0	0	3
3	20AD3133	Automated System Engineering	3	0	0	0	3
4	20AD3234	Intelligent Agents	3	0	0	0	3
5	20AD3235	Intelligent Control and Cognitive Systems	3	0	0	0	3
6	20AD3236	Autonomous Drones	3	0	0	0	3
7	20AD3237	Sensor Fusion	3	0	0	0	3

Medical intelligence and Bioinformatics

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20AD3141	Convolutional Neural Networks	3	0	0	0	3
2	20AD3142	Data Science in Medical Imaging	3	0	0	0	3
3	20AD3143	Data Science for Genomics	3	0	0	0	3
4	20AD3244	Drug Discovery using ML & DS	3	0	0	0	3
5	20AD3245	Predictive Analytics in Healthcare	3	0	0	0	3
6	20AD3246	Precision Medicine & Preventive Healthcare	3	0	0	0	3
7	20AD3247	Recommendation Systems	3	0	0	0	3
8	20AD3248	Public Healthcare System	3	0	0	0	3

IoT Analytics

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20AD3151	Sensors & Actuators	3	0	0	0	3
2	20AD3152	Analytics on the Edge	3	0	0	0	3
3	20AD3253	Video Analytics for Surveillance & Safety	3	0	0	0	3
4	20AD3254	Data lake storage for IoT Data management	3	0	0	0	3
5	20AD3255	Precision Agriculture	3	0	0	0	3

Computational Intelligence

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	20AD3161	Fuzzy Systems	3	0	0	0	3
2	20AD3162	Artificial Neural Networks	3	0	0	0	3
3	20AD3263	Soft Computing	3	0	0	0	3
4	20AD3264	Swarm and Evolutionary Computing	3	0	0	0	3

			L	T	P	S	Cr
5	20AD3265	Anomaly Detection	3	0	0	0	3
Perception and Language							
1	20AD3171	Human-AI Interaction	3	0	0	0	3
2	20AD3172	Speech Processing	3	0	0	0	3
3	20AD3273	Natural language processing	3	0	0	0	3
4	20AD3274	Image and video processing	3	0	0	0	3
5	20AD3275	AI in Search Engine	3	0	0	0	3
Social & Digital Media Analytics							
1	20AD3181	Sentiment Analysis	3	0	0	0	3
2	20AD3182	Opinion Mining & Recommender Systems	3	0	0	0	3
3	20AD3283	Social Media Marketing Analytics	3	0	0	0	3
4	20AD3284	Digital Media Analytics	3	0	0	0	3
5	20AD3285	Intelligent Social media Monitoring Systems	3	0	0	0	3

Flexi core

Sl No	Course Code	Course Title	L	T	P	S	Cr
1	21BT2106	MICROBIOLOGY	3	0	2	0	4
2	21BT2107	BIOANALYTICAL TECHNIQUES	3	0	2	0	4
3	20BT2110	MEDICAL LAB TECHNOLOGY	3	0	2	0	4
4	20BT2111	ADVANCED INSTRUMENTATION	3	0	2	0	4
5	20BT2112	ANIMAL CELL CULTURE	3	0	2	0	4
6	20BT2113	PROCESS ENGINEERING TOOLS	3	0	2	0	4
7	21EE3101	AI TECHNIQUES IN ELECTRICAL ENGINEERING	3	1	0	0	4
8	21EE3102	ELECTRIC DRIVES	3	1	0	0	4
9	21EE3104	GREEN ENERGY FUNDAMENTALS	4	0	0	0	4

10	21EE3108	UTILISATION OF ELECTRICAL ENERGY	3	1	0	0	4
11	21EE3103	RESTRUCTERED POWER SYSTEMS	3	1	0	0	4
12	21ME3116	ROBOTICS & ARTIFICIAL INTELLIGENCE	3	0	2	0	4
13	21CS2108	DATA BASE MANAGEMENT SYSTEMS	3	0	2	0	4
14	21CS2109	COMPUTER NETWORKS & SECURITY	3	1	0	0	4
15	20EE3201	CUSTOM POWER DEVICES	3	1	0	0	4
16	21EE3105	ELECTRIC VEHICLE TECHNOLOGY	4	0	0	0	4
17	21EE3106	SENSORS AND INTERNET OF THINGS	3	0	2	0	4
18	21EE3107	SWITCHED MODE POWER SUPLLIES	4	0	0	0	4
19	21EC3109	DATA NETWORKS AND PROTOCOLS	3	1	0	0	4
20	21EC3016	WIRELESS COMMUNICATIONS	3	1	0	0	4
21	21EM5101	FUNDAMENTALS OF INTERNET OF THINGS	3	1	0	0	4
22	21EM5104	WEB INTELLIGENCE	3	1	0	0	4
23	21ME4102	DATA ANALYSIS	3	0	2	0	4
24	21CS2212	ARTIFICIAL INTELLIGENCE	3	0	2	0	4
25	21CS2211	SOFTWARE ENGINEERING	3	1	0	0	4

26	21CS3040	CRYPTO ANALYSIS AND CYBER DEFENSE	3	0	2	0	4
27	20ME3221	Oops through Java	3	0	2	0	4
28	20ME3222	R Programming	3	0	2	0	4
29	20ME3223	Python Programming	3	0	2	0	4
30	20ME3224	Machine Learning	3	0	2	0	4
31	20ME3225	Mechanical Vibrations	3	0	2	0	4
32	20ME3226	Heat Power Engineering	3	0	2	0	4
33	20ME3216	Artificial Intelligence and Data Analytics	3	0	2	0	4
34	21CS3115	Embedded Systems	3	0	2	0	4
35	21CS3115P	Embedded Systems	4	0	4	0	6
36	21CS3063	UX Design	3	2	0	0	5
37	21CS3063P	UX Design	4	2	2	0	7
38	21CS2210	Parallel & Distributed Computing	3	0	2	0	4
39	21CS2210P	Parallel & Distributed Computing	4	0	4	0	6
40	21CS3060	Continuous Delivery & DevOps	3	0	2	0	4
41	21CS3060P	Continuous Delivery & DevOps	4	0	4	0	6
42	21CS3116	Signal Processing	3	2	0	0	5
43	21CS3116P	Signal Processing	4	2	2	0	7
44	21CS3036	Cloud Infrastructure & Services	3	0	2	0	4
45	21CS3036P	Cloud Infrastructure & Services	4	0	4	0	6
46	21CS3214	Automata Theory & Compiler Design	3	2	0	0	5

Sl No	Course Code	Course Title	L	T	P	S	Cr
47	21CS3214P	Automata Theory & Compiler Design	4	2	2	0	7
48	21CS3040	Crypt Analysis & Cyber Defense	3	0	2	0	4
49	21CS3040P	Crypt Analysis & Cyber Defense	4	0	4	0	6
50	21EL4105	MACHINE LEARNING	2	0	2	4	4
51	21EL3101	FUNDAMENTALS OF INTERNET OF THINGS	2	0	2	4	4
52	21EL3110	EMBEDDED SYSTEM DESIGN WITH ARM	2	0	2	4	4
53	21EL3109	WEB INTELLIGENCE	2	0	2	4	4
54	21EL4106	VLSI DESIGN	2	0	2	4	4
55	21EL4107	DATA WAREHOUSING & MINING	2	0	2	4	4
56	21IN3015	IoTs, WSN & Bio-medical Applications	3	0	2	0	4
57	21IN3016	Signal Processing for IoTs [Speech, Image, Biomedical]	3	0	2	0	4
58	21IN3017	Control Systems & Robotics - Foundation Course	3	0	2	0	4
59	21IN3018	Wireless Communication Technologies	3	0	2	0	4
60	21IN3019	Autonomous Vehicles & Automation Electronics	3	0	2	0	4
61	21IN3020	Advanced Soft Computing (AI, ANN, ML, Fuzzy Logic, Genetic Algo)	3	0	2	0	4
62	21IN3021	VLSI, ASICs & FPGA	3	0	2	0	4
63	21IN3022	System Engineering, Opn Res., Optimization & Design [SOOD]	3	0	2	0	4
64	21IN3023	Electrical Technologies and Solar Power System	3	0	2	0	4
65	21AD3113	Cloud & Edge Computing	3	0	2	0	4
66	21AD3114	Automata Theory & Compiler Design	3	0	2	0	4
67	21AD3115	Network Security	3	0	2	0	4
68	21AD3116	Continuous Delivery & DevOps	3	0	2	0	4
69	21AD3117	Web Engineering	3	0	2	0	4
70	21AD3118	Visual Programming and HCI (UI/UX)	3	0	2	0	4

Other Electives

Sl No	Course Code	Course Title	L	T	P	S	Cr

1	21BT40A1	IPR & PATENT LAWS	3	0	0	0	3
2	21CE40A2	Environmental Pollution Control Methods	3	0	0	0	3
3	21CE40A3	Solid and Hazardous waste management	3	0	0	0	3
4	21CE40A4	Remote Sensing & GIS	3	0	0	0	3
5	21CE40A5	Disaster Management	3	0	0	0	3
6	21CS40A7	FUNDAMENTALS OF SOFTWARE ENGINEERING	3	0	0	0	3
7	21CS40A6	FUNDAMENTALS OF DBMS	3	0	0	0	3
8	21CS40A8	FUNDAMENTALS OF IT	3	0	0	0	3
9	20ME40B4	Robotics	3	0	0	0	3
10	20ME40B5	Mechatronics	3	0	0	0	3
11	20ME40B6	Operations Research	3	0	0	0	3
12	20ME40B7	Hybrid Electric vehicles	3	0	0	0	3
13	20ME40B8	Industry 4.0	3	0	0	0	3
14	20ME40B9	Industrial Automation	3	0	0	0	3
15	20ME40C1	Logistics & Supply chain management	3	0	0	0	3
16	20ME40C2	Total Quality Management	3	0	0	0	3
17	20ME40C3	Smart Mobility	3	0	0	0	3
18	20ME40C4	Managerial Economics for Engineers	3	0	0	0	3
19	21EL40B1	LINUX PROGRAMMING	3	0	0	0	3
20	21EL40B2	E-COMMERCE	3	0	0	0	3
21	21GN40D1	National Caded Cops(NCC)-1	2	0	2	0	3
22	21GN40D2	National Caded Cops(NCC)-2	2	0	2	0	3
23	21GN40D3	National Caded Cops(NCC)-3	2	0	2	0	3
24	21GN40D4	National Service Scheme-1	2	0	2	0	3
25	21GN40D5	National Service Scheme-2	2	0	2	0	3
26	21GN40D6	National Service Scheme-3	2	0	2	0	3
27	21MB4056	Resources Safety and Quality Management	2	0	0	0	2
28	21MB4058	Construction project Management	2	0	0	0	2

Foreign Language Electives

1	21FL3051	ARABIC LANGUAGE	2	0	0	0	2
2	21FL3052	BENGALI LANGUAGE	2	0	0	0	2
3	21FL3053	CHINESE LANGUAGE	2	0	0	0	2
4	21FL3054	FRENCH LANGUAGE	2	0	0	0	2
5	21FL3055	GERMAN LANGUAGE	2	0	0	0	2
6	21FL3056	HINDI LANGUAGE	2	0	0	0	2
7	21FL3057	ITALIAN LANGUAGE	2	0	0	0	2
8	21FL3059	KANNADA LANGUAGE	2	0	0	0	2
9	21FL3060	RUSSIAN LANGUAGE	2	0	0	0	2
10	21FL3061	SIMHALI LANGUAGE	2	0	0	0	2
11	21FL3062	SPANISH LANGUAGE	2	0	0	0	2
12	21FL3058	JAPANESE LANGUAGE-1	2	0	0	0	2

ADDITIONAL OPEN ELECTIVES TO COMPLETE THREE LEVELS OF
JAPANEESE LANGUAGE

1	21FL3063	JAPANESE LANGUAGE-2	3	0	0	0	3
2	21FL3064	JAPANESE LANGUAGE-3	3	0	0	0	3
3	21GN40D7	NCC-4	2	0	6	0	5
4	21GN40D8	CAMP-1	0	0	4	0	5
5	21GN40D9	CAMP-2	0	0	4	0	5