JK LAKSHMIPAT UNIVERSITY

ज्ञानम् अमृतम्

JKLU

CURRICULUM STRUCTURE

B. Tech, M. Tech and BCA Programs

Institute of Engineering and Technology

JK LAKSHMIPAT UNIVERSITY

ज्ञानम् अमृतम्

JKLU

Vision

To be one of India's most innovative higher education institutions.

Mission

To realise its vision, the University will:

Practice teaching that inculcates critical thinking and problem solving,

Pursue research that leads to innovation and enhancement of real-life applications,

Offer experience that leads to all round development, and

Develop a culture that is strongly rooted in interdisciplinarity and learning by building, not just doing.

Values

Caring for people.

Integrity including intellectual honesty, openness, fairness, and trust.

Commitment to excellence.

IQAC Documentation

Document Name: Curriculum Structure: BTech, MTech and BCA Programs

Document Creation/Collation Date: 20th January, 2022

Document Description: This document is prepared by the Institute of Engineering and Technology (IET), JKLU to serve as an objective information baseline for further planning as well as delivery. It collates the curriculum structure of all the ongoing programs for the ongoing batches at IET, JKLU. The document includes the curriculum structures for all the BTech batches admitted 2018 onwards and MTech and BCA batches admitted 2020 onwards incorporating the curriculum related recommendations of BoS (upto 13th meeting) and approvals of the Academic Council (upto 20th meeting). It includes the semester wise distribution of all the core, elective and additional courses and also the provisions for various options and flexibilities. This document is supplemented by program wise documents for each batch detailing the curriculum structure, syllabus, course descriptions, and program articulation matrix.

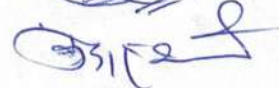**Document Creation/Collation Team:**

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JK Lakshmipat University
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Preface

International Standard Classification of Occupations (ISCO-08) by International Labour Office defines engineers and ICT professionals as follows:

a. *"Engineering professionals (excluding electro-technology) design, plan and organize the testing, construction, installation and maintenance of structures, machines and their components, and production systems and plants; and plan production schedules and work procedures to ensure that engineering projects are undertaken safely, efficiently and in a cost-effective manner."*,

b. *"Electro Technology engineers conduct research on the design, advise, plan and direct the construction and operation of electronic, electrical and telecommunications systems, components, motors and equipment. They organize and establish control systems to monitor the performance and safety of electrical and electronic assemblies and systems."*

c. *"Information and communication technology professionals conduct research; plan, design, write, test, provide advice and improve information technology systems, hardware, software, and related concepts for specific applications; develop associate documentation including principles, policies and procedures; and design, develop, control, maintain and support databases and other information systems to ensure optimal performance and data integrity and security."*

Prof. Crawley from MIT and his coauthors of "Rethinking engineering education: the CDIO approach" have defined a professional engineer as *is the one who has attained and continuously enhances technical, communications, and human relations knowledge, skills, and attitudes, and who contributes effectively to society by theorizing, conceiving, developing, and producing reliable structures and machines of practical and economic value*. They advocate that engineering education must engage students to develop and nurture their ability to Conceive-Design-Implement-Operate complex value-added engineering products, processes, and systems in a modern team-based environment. David Goldberg, a distinguished professor at UIUC has suggested that engineering education needs to change to make *seven thinking skills* the "**new basics**" of engineering education. These thinking skills are – *asking questions, labelling technology and design challenges, modelling problems qualitatively, decomposing design problems, gathering data, visualizing solutions and generating ideas, and communicating solutions in written and oral forms*. A 2005 report "Educating the Engineer for 2020" by the National Academy of Engineers (NAE), USA, gives the following recommendations that provide some very useful insights for curriculum design:

i.   The engineering education must adopt a broader view of the value of an engineering education to include providing a "liberal" education to those students who wish to use it as a springboard for other career pursuits,

ii. Introduce interdisciplinary learning in the undergraduate environment, and

iii. The essence of engineering—the iterative process of designing, predicting performance, building, and testing—should be taught throughout the curriculum starting from the first year itself.

JK Lakshmipat University (JKLU) is working for its vision to be one of India's most innovative higher education institution. To realise its vision, JKLU has chosen the four missions

    i. Practice teaching that inculcates critical thinking and problem proving,
    ii. Pursue research that leads to innovation and enhancement of real-life applications,
    iii. Offer experience that leads to all round development, and
    iv. Develop a culture that is strongly rooted in interdisciplinarity and learning by building, not just doing.

Caring for people, integrity including intellectual honesty, fairness, and trust, and commitment to excellence are its core values.

Since its inception in 2011, the Institute of engineering and Technology (IET) has been regularly engaged in developing and evolving its engineering and technology programs that are in line with the contemporary thinking in engineering education. The programs are designed to prepare students for professional practice and continued intellectual development with an adequate understanding of professional and civic responsibilities. The program design has benefitted from collective inputs received through thirteen meetings of the BoS, twenty meetings of the AC, hundreds of faculty meetings and a large number of discussions with various stakeholders and industry experts. Various Bodies of Knowledge (BoKs) as well as competency frameworks for specific domains as defined by the relevant professional societies, organisations, and other think tanks are also referred in the process. Through its interventions, Internal Quality Assurance Cell (IQAC) too keeps the curriculum design and delivery in line with the JKLU's vision, mission, and values and stated educational objectives. Currently, the curriculum and education at IET is designed using the following broad guiding principles:

    i. Appropriate inclusion of concepts and technologies related to Industry 4.0 and Net Zero Industry Transition,
    ii. Choice Based Credit System (CBCS), Flexibility, and Learner centricity,
    iii. Outcome-based Education (OBE) through comprehensively defined Program Educational Objectives (PEOs), Program Outcomes (POs), Program Specific Outcomes (PSOs), Program specific desired minimum level of competence for POs/PSOs, Course Outcomes (COs), Course Articulation Matrices (CAMs), Program Articulation Matrices (PAMs), and Course level and Program Level Outcome Attainment scores,
    iv. Interdisciplinary curriculum including common foundation courses, diversified electives, integrated interdisciplinary courses, and special purpose additional courses as well as options for a minor certification in a different discipline or a concentration in a specialization within the same discipline,
    v. Focus on employability, innovation, critical thinking, problem solving, and communication as well as exposure to entrepreneurship, technical standards, sustainability issues, professional ethics, and human values,
    vi. Pedagogies focusing on active learning, integration, collaboration, and reflection including project-based-learning, as well as engagements in internships, industrial projects, entrepreneurial projects, independent studies, and/or research projects,
    vii. Academic rigour and multi-faceted evaluation with an emphasis on continuous evaluation of higher order thinking skills, and
    viii. Flexibility to earn credits through curated MOOCs and courses at partner and other universities in India or abroad, as well as provisions of lateral entry admission in BTech and BCA programs and early exit with a PG Diploma in MTech programs.

From 2015 to 2018, the ABET POs were used for curriculum planning and a major curriculum transformation exercise was initiated in 2018-19. In 2019-20, the PEOs, POs, PSOs, and desired minimum level of competence for POs/PSOs for the programs for the batches admitted 2019 onwards, were designed using a more comprehensive approach by appropriately integrating several existing frameworks as well as our faculty's research on these aspects. This handbook gives the summaries of the current curriculum structure including electives and additional courses for all the ongoing programs and batches as on 20th January, 2022. Programs specific "Curriculum Structure and Syllabus" handbooks for each batch give further details about specific courses. In addition, several Value Added Courses (VACs) are also offered beyond the curriculum. The programs as well as curriculum will continue to evolve at IET, JKLU in line with the evolving needs of society and industry, BoKs for specific domains, as well as models, frameworks, and policies about higher and technical education.

Date: 20.01.2022   Dr. Sanjay Goel,
                                                         Director,
                                   Institute of Engineering and Technology,
                                      JK Lakshmipat University, Jaipur

List of Members of the 13th Board of Studies, Institute of Engineering and Technology, JK Lakshmipat University, Jaipur.

1.	Dr. Sanjay Goel, Director (Institute of Engineering and Technology)	Chairman
2.	Chemical Engineering (i) Dr. Jitendra Kumar Singh, Assistant Professor (ii) Prof. B. R. Natarajan, Bansthali Vidyapeeth (iii) Mr. Yashpal, Assistant Manager, DEKRA India Pvt. Ltd., New Delhi	 Internal Member External Member (Academician) External Member (Industry)
3.	Civil Engineering (i) Dr. D.K. Sharma, Professor (ii) Dr. Kedar Sharma, Associate Professor (iii) Dr. Tanmay Kumar Deb, Assistant Professor (iv) Dr. Ajit Pratap Singh, Professor, BITS Pilani (v) Mr. Sanjeev Jindal, GM, Airport Authority of India, New Delhi.	 Internal Member -do- -do- External Member (Academician) External Member (Industry)
4.	Computer Science and Engineering (i) Dr. Amit Kumar Sinhal, Professor (ii) Dr. Sonal Jain, Professor (iii) Dr. S. Taruna, Associate Professor (iv) Prof. Rahul Banerjee, Director, LNMIIT, Jaipur (v) Mr. Arun Singhal, Founder & CEO, IR4tech (vi) Mr. R.S. Mani, Deputy Director General, NIC (vii) Mr. Amit Trivedi, Director, Synergy, Jaipur	 Internal Member -do- -do- External Member (Academician) External Member (Industry) External Member (Industry) External Member (Industry)
5.	Electrical and Electronics Engineering (i) Dr. Gustavo Sanchez, Professor (ii) Dr. Pushpendra Singh, Associate Professor (iii) Dr. Devika Kataria, Associate Professor (iv) Prof. S.D. Joshi, IIT, Delhi (v) Mr. R. Narasimhan, VP (Projects), SB Energy,New Delhi.	 Internal Member -do- -do- External Member (Academician) External Member (Industry)
6.	Mechanical Engineering (i) Dr. Ravi Shankar Prasad, Associate Professor (ii) Dr. Mohd Zubair, Assistant Professor (iii) Dr. Jinesh Kumar Jain, Associate Professor, MNIT, Jaipur (iv) Dr. Sanjay Vashishtha, Managing Director, First Green Consulting Pvt. Ltd., Gurgaon	 Internal Member -do- External Member (Academician) External Member (Industry)
7.	Department of Science and Liberal Arts (i) Dr. Satya Prakash Gupta, Professor (ii) Dr. Vipin Kumar Jain, Associate Professor (iii) Dr. Umesh Gupta, Associate Professor (iv) Dr. Shahnawaz Khan, Assistant Professor (v) Dr. Jaya Gupta, Assistant Professor (vi) Dr. Richa Mishra, Assistant Professor – IM	 Internal Member -do- -do- -do- -do- -do-
8.	Member from JK Group Mr. Naveen Sharma, Whole time Director Udaipur Cement Works Ltd, Udaipur	
9.	Dr. Vipin Kumar Jain Non-member Secretary Controller of Examination, JKLU, Jaipur	Non-member Secretary

List of Members of the 20th Academic Council of JK Lakshmipat University, Jaipur

S. No.	Name	Designation
1.	Dr. Dheeraj Sanghi Vice Chancellor, JKLU	Chairperson
2.	Prof. I.K. Bhat Vice Chancellor Manav Rachana University, Faridabad	Member
3.	Prof. S.K. Koul Emeritus Professor Indian Institute of Technology Delhi	Member
4.	Prof. Asha Bhandarker Distinguished Professor, Dean-International Relations International Management Institute, New Delhi	Member
5.	Dr. Amit Bardhan Professor, Operational Research Faculty of Management Studies, University of Delhi,	Member
6.	Prof. Sushil Sharma Associate Dean and Professor of Information Systems Miller College of Business Ball State University, USA	Member
7.	Mr. M.M. Singh Executive Advisor Maruti Suzuki India Ltd. Gurgaon	Member
8.	Mr. Bijay Sahoo Group President (HR) Reliance Industries Ltd. Mumbai	Member
9.	Mr. C. Vasudevan Sr. General Manager Investor Protection Fund Bombay Stock Exchange (BSE) Limited, Mumbai	Member
10.	Dr. D. Nagesh Kumar Professor, Dept. of Civil Engineering Indian Institute of Science, Bangalore	Member
11.	Mr. Satendra Singh Head: Global Strategy and Business Development Nokia Solutions and Networks, Gurgaon	Member
12.	Dr. Shailendra Chouksey Whole Time Director JK Lakshmi Cement Ltd., New Delhi 110 002	Member
13.	Prof. Arun K Pujari Professor Emeritus (and Advisor), Mahindra University, Hyderabad, Hyderabad	Member
14.	Professor Jatin Bhatt Retired - Pro Vice Chancellor Ambedkar University, Delhi	Member

15.	Mr. Prem Singh President – Corporate HR JK Organisation, Delhi	Member
16.	Prof. Sanjay Ranka Professor, Computer & Information Science & Engineering Herbert Wertheim college of Engineering, USA	Member
17.	Mr. Asheesh Gupta Pro Vice-Chancellor, JK Lakshmipat University, Jaipur	Member
18.	Dr. Sanjay Goel Director, Institute of Engineering and Technology, JK Lakshmipat University, Jaipur	Member
19.	Prof. A. Balasubramaniam Director, Institute of Design, JK Lakshmipat University, Jaipur	Member
20.	Dr. Ashwini Sharma Assistant Director and Associate Professor, Institute of Management, JK Lakshmipat University, Jaipur	Member
21.	Dr. Jyoti Prakash CR Naidu Dean (R&D) and Professor, IET, JK Lakshmipat University, Jaipur	Member
22.	Prof. Gustavo Sanchez Professor, Institute of Engineering and Technology, JK Lakshmipat University, Jaipur	Member
23.	Dr. Umesh Gupta Controller of Examination	Acting Member Secretary

List of Meetings of the Board of studies, Institute of Engineering and Technology, JK Lakshmipat University, Jaipur.

S. No.	Particulars	Day and Date
1.	1st meeting	Saturday, 06.04.2013
2.	2nd meeting	Monday, 16.12.2013
3.	3rd meeting	Tuesday, 06.01.2015
4.	4th meeting	Saturday, 02.04.2016
5.	5th meeting	Saturday, 18.03.2017
6.	6th meeting	Friday, 11.08.2017
7.	7th meeting	Saturday, 19.05.2018
8.	8th meeting	Saturday, 13.10.2018
9.	9th meeting	Saturday, 04.05.2019
10.	10th meeting	Sunday, 22.09.2019
11.	11th meeting	Saturday, 30.05.2020
12.	12th meeting	Saturday, 05.09.2020
13.	13th meeting	Saturday, 26.06.2021

List of Meetings of Academic Council of JK Lakshmipat University, Jaipur

S. No.	Particulars	Day and Date
1.	1st meeting	Monday, 03.09.2012
2.	2nd meeting	Saturday, 20.04.2013
3.	3rd meeting	Monday, 23.12.2013
4.	4th meeting	Saturday, 19.04.2014
5.	5th meeting	Friday, 09.01.2015
6.	6th meeting	Thursday, 28.05.2015
7.	7th meeting	Thursday, 21.05.2016
8.	8th meeting	Saturday, 20.08.2016
9.	9th meeting	Saturday, 17.1.2016
10.	10th meeting	Saturday, 20.05.2017
11.	11th meeting	Saturday, 19.08.2017
12.	12th meeting	Saturday, 16.12.2017
13.	13th meeting	Saturday, 26.05.2018
14.	14th meeting	Monday, 15.10.2018
15.	15th meeting	Saturday, 25.05.2019
16.	16th meeting	Saturday, 19.10.2019
17.	17th meeting	Saturday, 06.06.2020
18.	18th meeting	Saturday, 12.09.2020
19.	19th meeting	Wednesday, 30.06.2021
20.	20th meeting	Saturday, 20.11.2021

B.Tech and M.Tech Programs at IET, JKLU

(2015-16 Batch onwards)

Program Outcomes

The graduates of B.Tech. and M.Tech. Programs at IET, JKLU will have following competencies:

a. Ability to apply knowledge of mathematics, science, and engineering.
b. Ability to design and conduct experiments, as well as to analyze and interpret data.
c. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d. Ability to function on multi-disciplinary teams.
e. Ability to identify, formulate, and solve engineering problems.
f. Understanding of professional and ethical responsibility.
g. Ability to communicate effectively.
h. Broad education necessary to understand the impact of engineering solutions in a global, Economic, environmental, and societal context.
i. Recognition of the need for, and an ability to engage in life-long learning.
j. Knowledge of contemporary issues.
k. Ability to utilize experimental, statistical and computational methods and tools necessary for Engineering practice.
l. Ability to analyze and interpret data and also an ability to design digital and analog systems and programming them.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Civil Engineering (Batch 2018-2022)

Sem	Courses							Credits
I	Calculus and Applied Mechanics BES101 (6 2 0) 6	Design and Prototyping BES102 (6 2 0) 6	The Power of Story Telling CCT101 (2 1 0) 3					15
II	Computational Data Analysis BES201 (10 2 0) 10	Fundamentals of Automation Engineering BES202 (6 2 0) 6	Fundamentals of Critical Thinking CCT201 (2 0 0) 2	Experimental Physics PH202 (1 0 4) 3	Environmental Studies ID201 (2 0 0) 1	Articulation and Elocution CCT202 (2 0 0) Audit		22
III	Structure Analysis-I CE305 (3 1 0 0) 4	Fluid Mechanics CE306 (3 1 2 0) 5	Surveying CE308 (3 0 2 0) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	Programming Week CS1104 2	27
IV	Structure Analysis-II CE405 (3 1 0 0) 4	Engineering Geology and Building Construction CE402 (3 0 2 0) 4	Concrete Technology CE409 (3 0 2 0) 4	Hydraulic Engineering CE403 (3 0 2 0) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Communication and Identity CC1104 (2 0 1) 2	Introduction to Design IL1102 2	25
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)							4
V	Design of RCC and Steel Structures CE1107 (3 0 2 0) 4	Geotechnical Engineering CE1108 (3 0 2 0) 4	Mechanical and Electrical Machines ES1108 (3 0 2 0) 4	Departmental Elective-I/ Open Elective-I 4	Introduction to IoT EE1111 2	Understanding and Managing Conflict CC1105 (2 0 0) 2		20
VI	Transportation Engineering CE1109 (3 0 2) 4	Construction Project Management CE1112 (3 0 2 0) 4	Departmental Elective-II 4	Open Elective -II 4	Critical Thinking for Decisions at Workplace CC1106 (2 0 0 0) 2	Automation Project PR1101 2	Emerging Tech Week 2	22
VII	Departmental Elective-III 4	Departmental Elective-IV 4	Departmental Elective-V 4	Open Elective-III 4	Minor Project PR1103 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a Partner University 16							16
	Total Credits							**171**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Public Health Engineering	Design and Manufacturing
Municipal and Urban Engineering	Digital and Embedded Systems
Building Planning & Design	Idea to Business Model
	Numerical Methods
	Basic Course in Entrepreneurship
	Economics and Finance for Engineers
Sem VI	
DE-II	**OE-II**
Ground Improvement Techniques	Green Energy
Hydrology and Water Resources Engineering	Optimization Techniques
Advanced Foundation Engineering	Business Model to Product-Market Fit
Sem VII	
DE-III, IV, V	**OE-III**
Earthquake Engineering	Mechatronics
Railway and Airport Engineering	Electrical Safety
Advanced Highway Engineering	Operations Research
Integrated Waste Management for Smart Cities	Fintech in Retail Banking and Insurance
Design of Advanced Concrete Structures	Introduction to User-Experience
CAD-BIM Specialization (Curated MOOC)	Industrial Safety
Railway and Airport Engineering	Advanced Statistics

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification (through electives/minor project, 16 Credits) or a Concentration (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Mechanical Engineering (Batch 2018-2022)

Sem	Courses								Credits
I	Calculus and Applied Mechanics BES101 (6s 2 0) 6	Design And Proto-typing BES102 (6s 2 0)6	The Power of Story Telling CCT101 (2 1 0)3						15
II	Computational Data Analysis BES201 (10s 2 0) 10	Fundamentals of Automation Engineering BES202 (6s 2 0) 6	Experimental Physics PH202 (1 0 4)3	Environmental Studies ID201 (2 0 0) 1	Articulation and Elocution CCT202 (2 0 0) Audit	Fundamentals of Critical Thinking CCT201 (2 0 0)2			22
III	Materials Engineering ME1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Engineering Thermodynamics ME1102 (3 0 2) 4	Programming Week CS1104 2	Engineering Drawing ME1103 (0 0 2) 1	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		23
IV	Transport Phenomena ME1104 (3 0 2) 4	Strength of Material and Analysis ME1105 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Production Technology-I ME1106 (3 0 2)4	Introduction to Design IL1102 2	Mechanical Engineering CAD Lab ME1107 (0 0 2) 1	Communication and Identity CC1104 (2 0 1) 2		22
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)								4
V	Theory of Machines ME1108 (3 0 2) 4	Production Technology-II ME1109 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* (3 0 2) 4	OE-I* (3 0 2) 4			20
VI	Design of Machine Elements ME1110 (3 0 2) 4	Automobile Engineering ME1111 (3 0 2) 4	Emerging Tech Week 2	Automation Project PR1101 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* (3 0 2) 4	DE-III/OE-II* (3 0 2) 4		22
VII	Minor Project (PR1103) 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4				20
VIII	Practice School-II/Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16								16
	Total								164

- ❖ Minimum required credit – 160
- ❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
- ❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Elements of Stress Analysis- ME1202	Machine Learning Application
Computer Aided Manufacturing	Infrastructure and Urban planning- CE1212
Mechatronics- ME1207	Digital and embedded systems
	Idea to Business model- ED1102
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week	
Building RPA Applications- CS1121	
Electric Vehicle- EE1116	
DE-II, III	**OE-II**
Computer Aided Product Design and Manufacturing- ME1210	Electrical Safety
Refrigeration and Air Conditioning- ME1205	Disaster Management- CE1206
Computational Fluid Dynamics- ME1211	Municipal and Urban Engineering- CE1202
Industrial Engineering	Data Driven Web Application Development
Mechanical Vibration- ME1208	Optimization Techniques- AS1203
Green Energy- IL1202	Business Model to Product-Market Fit- ED1103
	Industrial IoT- EE1216
Sem VII	
DE-IV, V, VI	**OE-III**
IC Engine- ME1201	Geographical Information System- CE1214
Power Plant Engineering- ME1203	Operations Research- AS1201
Vehicle Aerodynamics- ME1213	Fintech in Retail Banking and Insurance- FA1151
Modelling of Engineering Materials- ME1209	Introduction to User-Experience- IL1204
Industrial Robotics- IL2203	Advanced Statistics- AS1202

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification (through electives/minor project, 16 Credits) or a Concentration (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Electrical and Electronics Engineering (Batch 2018-2022)

Sem	Courses						Credits
I	Calculus and Applied Mechanics BES101 (6s 2 0) 6	Design And Proto-typing BES102 (6s 2 0)6	The Power of Story Telling CCT101 (2 1 0)3				15
II	Computational Data Analysis BES201 (10s 2 0) 10	Fundamentals of Automation Engineering BES202 (6s 2 0) 6	Experimental Physics PH202 (1 0 4)3	Environmental Studies ID201 (2 0 0) 1	Articulation and Elocution CCT202 (2 0 0) Audit	Fundamentals Of Critical Thinking CCT201 (2 0 0)2	22
III	Data Structures CS1102 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Electronic Devices and Circuits EE1101 (3 0 2) 4	Programming Week CS1104 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	22
IV	Analog Circuits EE1102 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Advanced Electrical Machines EE1103/ Electromagnetics and Microwaves EE1104 (3 0 2) 4	Signals and Control Systems EE1105 (3 0 4) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	22
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)						4
V	Power Systems-I EE1107/ Digital Systems Design EE1110 (3 0 2) 4	Analog and Digital Communications EE1109 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	20
VI	Industrial Electronics EE1112/ Digital Communication Networks EE1208 (3 0 2) 4	Power System-II EE1114/ Digital Signal Processing EE1115 (3 0 2) 4	Emerging Tech Week 2	Automation Project PR1101 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4 / DE-III/ OE-II* 4	22
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4		20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16						16
	Total Credits						**163**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Real Time Operating Systems- EE1214	Infrastructure and Urban Planning- CE1212
Electrical Testing and Commissioning- EE1210	Idea to Business Model- ED1102
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week	
Building RPA Applications- CS1121	
Electric Vehicle- EE1116	
DE-II, III	**OE-II**
Industrial IoT- EE1216	Disaster Management- CE1206
Power System Protection- EE1215	Municipal and Urban Engineering- CE1202
Electrical Safety	Green Energy- IL1202
	Optimization Techniques- AS1203
	Business Model to Product-Market Fit- ED1103
	Full stack web development with REACT- CS1212
Sem VII	
DE-IV, V, VI	**OE-III**
Industrial Drive and E-Vehicle- EE1206	Geographical Information System- CE1214
Industrial Robotics- IL2203	Mechatronics- ME1207
Information Theory and Coding- EE1218	Operations Research- AS1201
Advanced Communication Systems- EE1211	Fintech in Retail Banking and Insurance- FA1151
Machine Vision- EE1217	Introduction to User-Experience- IL1204
Advances in Power Delivery- EE1213	Industrial Safety
Electrical Systems Design- EE1202	Advanced Statistics- AS1202

NOTE:
1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification (through electives/minor project, 16 Credits) or a Concentration (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Computer Science and Engineering (Batch 2018-2022)

Sem	Courses							Credits
I	Calculus and Applied Mechanics BES101 (6s 2 0) 6	Design And Proto-typing BES102 (6s 2 0) 6	The Power of Story Telling CCT101 (2 1 0) 3					15
II	Computational Data Analysis BES201 (10s 2 0) 10	Fundamentals of Automation Engineering BES202 (6s 2 0) 6	Experimental Physics PH202 (1 0 4) 3	Environmental Studies ID201 (2 0 0) 1	Articulation and Elocution CCT202 (2 0 0) Audit	*IBM SP-I Python Programming* CSESP202 (2 0 0) 2	Fundamentals of Critical Thinking CCT201 (2 0 0) 2	22/24*
III	Data Structures CS1102 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Theoretical Foundation of Computer Science CS1103 (3 1 0) 4	Programming Week CS1104 2	*IBM SP-II Cognitive Dashboard* CS1302 (2 0 2) 3	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	22/25*
IV	Design and Analysis of Algorithms CS1105 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Database Systems CS1106 (3 0 2) 4	Computer Architecture and Organization CS1107 (3 0 2) 4	Introduction to Design IL1102 2	*IBM SP-III Enterprise Programming using Java* CS1303 (2 0 2) 3	Communication and Identity CC1104 (2 0 1) 2	21/24*
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Operating Systems CS1108 (3 0 2) 4	Artificial Intelligence and Machine Learning CS1110 (3 0 2) 5	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I*/ *IBM-SP-IV (Cloud Computing-CS1304)* (3 0 2) 4	OE-I* 4		21
VI	Computer Networks and Distributed Systems CS1111 (3 0 2) 4	Compiler Design-CS1112/Software Engineering-CS1113 (3 0 2) 4	Emerging Tech Week 2	Automation Project PR1101 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II*/*IBM SP-V (Business Intelligence-CS1305)* (3 0 2) 4	DE-III*/ OE-II*/*IBM SP-VI (Data Science-CS1313)* (3 0 2) 4	22
VII	Minor Project - PR1103/ *IBM SP-VII (Big Data Engineering-CS1312)* (3 0 2) 4	DE-IV*/ *IBM SP-VIII (AI with IBM Watson-CS1314)* (3 0 2) 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							163-171

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Mobile Application Development - CS1205	Design and Manufacturing
Information Retrieval and Data Mining- CS1204	Infrastructure and Urban Planning- CE1212
Real Time Operating Systems (Curated MOOC)- EE1214	Digital and Embedded Systems
	Idea to Business Model- ED1102
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week	
Building RPA Applications- CS1121	
DE-II, III	**OE-II**
Software Engineering- CS1113	Disaster Management- CE1206
Full Stack Web Development with REACT- CS1212	Municipal and Urban Engineering- CE1202
Applied Algorithms- CS1211	Green Energy- IL1202
	Optimization Techniques- AS1203
	Business Model to Product-Market Fit- ED1103
	Design of Wearable Electronics
Sem VII	
DE-IV, V, VI	**OE-III**
Advanced Data Structures and Algorithms- CS1213	Geographical Information System- CE1214
Blockchain Technology and Applications- CS1203	Mechatronics- ME1207
Natural Language Processing- CS2203	Electrical Safety
Cross-Platform App Development- CS1215	Operations Research- AS1201
Machine Vision- EE1217	Fintech in Retail Banking and Insurance- FA1151
	Introduction to User-Experience- IL1204
	Industrial Safety
	Advanced Statistics- AS1202

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification (through electives/minor project, 16 Credits) or a Concentration (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

Bachelor of Technology in Computer Science and Engineering			
Sem	**Code**	**Course Name**	**Credits**
IV	CS1207	Introduction to Networks	Audit
IV	CS1402	Data Analytics using Python (MOOC)	4
V	EE1401	Digital Circuits (MOOC)	4
V	CS1412	Laplace Transform (MOOC)	2
V	CS1413	Introduction to Ordinary Differential Equations (MOOC)	2
VI	AS1401	Discrete Mathematics(MOOC)	4
Bachelor of Technology in Electrical and Electronics Engineering			
Sem	**Code**	**Course Name**	**Credits**
VII	PR1201	Independent Project	2
Bachelor of Technology in Mechanical Engineering			
Sem	**Code**	**Course Name**	**Credits**
IV	ME1206	Computer Aided Modelling and Simulation	2

- These courses are offered to enable students for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

Program Education Objectives
Program Outcomes
(2019-23 Batch onwards)

- ❖ Bachelor of Technology in Civil Engineering (Program Code: 3101)
- ❖ Bachelor of Technology in Mechanical Engineering (Program Code: 3106)
- ❖ Bachelor of Technology in Electrical and Electronics Engineering (Program Code: 3107)
- ❖ Bachelor of Technology in Electronics and Communication Engineering (Program Code: 3103)
- ❖ Bachelor of Technology in Computer Science and Engineering (Program Code: 3102)
- ❖ Master of Technology in Data Science (Program Code: 3208)
- ❖ Master of Technology in Health, Safety, and Environmental Engineering (Program Code: 3203)
- ❖ Master of Technology in Automation and Robotics (Program Code: 3210)

B.Tech and M.Tech Programs at IET, JKLU

(2019-23 Batch onwards)

Program Education Objectives

The B.Tech and M.Tech. Programs at IET, JKLU are designed to prepare students for continued learning and successful careers. Our alumni are expected to:

PEO1: Apply their technical knowledge, complex problem solving and research skills in professional practice.

PEO2: Continue their intellectual development through critical thinking, self-study, apprenticeship, higher education, professional development courses, as well as participation in research groups and professional networks.

PEO3: Serve as ambassadors for engineering and sustainability by exhibiting high professional standards with a deep sense of civic responsibility.

PEO4: Effectively communicate about technical and related issues.

PEO5: Embrace the roles of team members and leaders in their careers.

Program Outcomes

"Competence is a demonstrated ability to apply knowledge, skills and attributes for achieving desirable results." The graduates of B.Tech. and M.Tech. Programs at IET, JKLU will have following competencies:

PO 1: Life-long learning: Demonstrate inquisitiveness, open mindedness, and the ability to engage in independent and life-long learning in the broadest context of technological, organizational, economic, and societal changes.

PO 2: Citizenship, Sustainability, and Professional ethics

PO 2a: Demonstrate knowledge of constitutional values of liberty, equity, justice, and fraternity with understanding of the impact of the engineering solutions in societal and environmental contexts as well as a sense of responsibility for sustainable development.

PO 2b: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, cultural, and environmental issues and the consequent responsibilities relevant to the professional engineering practice.

PO 2c: Demonstrate commitment for professional integrity and excellence and respect for ethics, responsibilities and norms as prescribed for the engineering practice.

PO 3: Engineering knowledge and Modern tool usage

PO 3a: Demonstrate clear conceptual understanding of fundamentals of engineering specialization and cognitive flexibility to appropriately 'transfer' what has been learned in a context, to different situations.

PO 3b: Apply engineering thinking, computational thinking, and the knowledge of mathematics, natural and social sciences, engineering fundamentals, information technology, engineering specialization, and engineering management to the solution of complex engineering problems.

PO 3c: Create, select, modify, and apply appropriate techniques, best practices, standards, resources, and modern engineering and IT tools including prediction and modelling to engineering and social activities with an understanding of the limitations.

PO 4: Complex problem solving, Design and Research

PO 4a: Identify, formulate, review research literature, and analyze complex engineering problems to arrive at substantiated conclusions using critical thinking along with principles of mathematics, computing, engineering as well as natural and social sciences.

PO 4b: Use systems thinking and reflection to identify and consider underlying structures, patterns, volatility, uncertainties, complexities, ambiguities, complications, and risks to design and develop engineering solutions for complex problems to meet the specified and anticipated needs with appropriate concern for constraints, performance, sustainability, and professional ethics.

PO 4c: Use research-based knowledge and research methods including design of experiments, simulation, analysis and interpretation of data, and synthesis of the information to evaluate and improve the engineering solutions and practice.

PO 5: Individual & team work and Engineering management

PO 5a: Ability to work effectively as an individual and as a team member or leader in diverse and distributed teams, and in multidisciplinary settings.

PO 5b: Ability to apply engineering management principles to one's own and team's work to manage engineering projects and operations and in multidisciplinary environment.

PO 6: Communication: Ability to communicate effectively on complex engineering and technology activities, situations, problems, and solutions using verbal, textual, and pictorial elements with the colleagues, engineering community, users, clients, policy makers, and society at large with intellectual honesty, clarity, empathy, and compassion.

PO 7: Innovation and entrepreneurship:

PO 7a: Demonstrate enthusiasm and understanding to identify opportunities and translate research in engineering and other disciplines to conceive and design innovative engineering solutions for business, industry, and societal problems.

PO 7b: Demonstrate enthusiasm and understanding to conceive and plan technology based new ventures either as independent start-up businesses or within existing corporate structures.

Program Specific Outcomes

(2019-23 Batch onwards)

- ❖ Bachelor of Technology in Civil Engineering
- ❖ Bachelor of Technology in Mechanical Engineering
- ❖ Bachelor of Technology in Electrical and Electronics Engineering
- ❖ Bachelor of Technology in Electronics and Communication Engineering
- ❖ Bachelor of Technology in Computer Science and Engineering

Bachelor of Technology in Civil Engineering

The Civil Engineering graduates of JKLU will be able to:

CEPSO1: Conceive, design, implement, and manage civil infrastructure systems, structures and processes by using principles of structural engineering, transportation engineering, water management, geotechnical engineering, project management, computing, automation, sustainability and contemporary materials and tools.

CEPSO2: Serve in fields of construction industry, infrastructure management or consultancy services.

Bachelor of Technology in Mechanical Engineering

The Mechanical Engineering graduates of JKLU will be able to:

MEPSO1: Conceive, design, implement, and manage mechanical systems, components, and processes by using principles of machine design, production engineering, thermal engineering, computing, automation, sustainability and contemporary materials and tools.

MEPSO2: Serve in fields of engineering services, manufacturing, automobile, energy, EPC and mechatronics.

Bachelor of Technology in Electrical and Electronics Engineering

The Electrical and Electronics Engineering graduates of JKLU will be able to:

EEEPSO1: Conceive, design, implement, and manage electrical or electronic systems by using principles of circuit design, machines, communication systems, signal processing, digital systems, power systems, automation, control systems, computing, sustainability and state of the art components and tools.

EEEPSO2: Serve in fields of telecommunication, manufacturing, energy, EPC, IT and engineering services.

Bachelor of Technology in Electronics and Communication Engineering

The Electronics and Communication Engineering Graduates of JKLU will be able to:

ECEPSO1: Conceive, Design, Implement, and Manage Electronics and Communication Systems by using principles of Circuit Design, Signal Processing, Communication Systems, Digital Systems, Automation, Computing, Sustainability and state of the art components and tools

ECEPSO2: Serve in fields of Telecommunication, Medical Electronics, Consumer Electronics, Automation, IT and Engineering services

Bachelor of Technology in Computer Science and Engineering

The Computer Science and Engineering graduates of JKLU will be able to:

CSEPSO1: Conceive, design, implement, and manage computational and information processing systems, agents and processes by using principles of computer science, computer engineering, software engineering, artificial intelligence, data analytics, sustainability and state of the art platforms, components and tools.

CSEPSO2: Serve in ICT areas such as software development, data science, IT infrastructure, cyber security, data administration, system administration in business, consultancy, industry, government, healthcare, etc.

Program specific desired minimum level of competence for POs and PSOs

PO/PSO	B.Tech				
	CSE	EEE	ECE	ME	CE
PO 1	Competent	Competent	Competent	Competent	Competent
PO 2a	Novice	Novice	Novice	Novice	Novice
PO 2b	Novice/ Advanced Beginner	Novice/ Advanced Beginner	Novice/ Advanced Beginner	Novice/ Advanced Beginner	Novice/ Advanced Beginner
PO 2c	Novice	Novice	Novice	Novice	Novice
PO 3a	Competent	Competent	Competent	Competent	Competent
PO 3b	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 3c	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4a	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4b	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4c	Novice	Novice	Novice	Novice	Novice
PO 5a	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 5b	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 6	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 7a	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 7b	Novice	Novice	Novice	Novice	Novice
PSO 1	Competent (CSEPSO1)	Competent (EEEPSO1)	Competent (ECEPSO1)	Competent (MEPSO1)	Competent (CEPSO1)
PSO 2	Competent (CSEPSO2)	Competent (EEEPSO2)	Competent (ECEPSO2)	Competent (MEPSO2)	Competent (CEPSO2)

Following process has been adopted to create Course Articulation Matrix (CAM) and Program Articulation Matrix (PAM).

- Course Outcome of each Course is mapped to Program Outcome (PO) / Program Specific Outcome (PSO) using three Levels viz., Low Correlation (1), Moderate Correlation (2) and Substantial Correlation (3).

- Average of these Levels of each Course Outcome w.r.t each specific PO/PSO is calculated and it indicates expectations laid in a course to attain different PO/PSO. In order to avoid over commitment of a course w.r.t its contribution to POs/PSOs, the following validation check is applied on the sum of PO/PSO wise averages in each course.

$$\sum (Average) <= Min (Credits * Year, 15)$$

In above equation, Credits are the credits assigned to the course, Year indicates the level of the students from 1st to 4th year. In case this sum exceeds the upper limit, CO-PO mappings are revised. This check ensures that early or low credit courses are not over burdened with very high expectations.

- For creation of Program Articulation Matrix, sum of these averages of different courses w.r.t each PO/PSO is calculated and interpreted as per following Table.

Competence Level *	B.Tech
Novice	<8
Advanced Beginner	8 - 16
Competent	>=16

Novice* (N): Knows objective facts, features, and rules for determining actions w.r.t. this PO/PSO without being context-sensitive. The student has studied the basic concepts.

Advanced beginner* (AB): Recognizes common situations w.r.t. this PO/PSO that help in recalling which rules should be exercised, starts to recognize and handle situations not covered by given facts, features and rules. The student has problem-solving and repeated practice experience for common situations w.r.t. this PO/PSO.

Competent* (C): Performs most standard actions w.r.t. PO/PSO without conscious application of rules after considering the whole situation. Handles new situations through the appropriate application of rules, can design systems, and may lead. Has demonstrated this PO/PSO through repeated engagements in advanced problem-solving, projects, extensive practice in common and exception situations, and participated in professional networks.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Civil Engineering (Batch 2019-2023)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping ES1102 (6s 0 0) 6	Experimental Science-I AS1101 (1 0 4) 3	Fundamentals of Communication CC1101 (2 0 1) 2				**21**
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering ES1104 (6s 2 0) 6	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Scientific Perspectives AS1102 (2 0 0) 2	Critical Thinking and Storytelling CC1102 (2 0 1) 2		**20**
III	Civil Engineering Materials CE1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Fluid Mechanics and Hydraulic Engineering CE1103 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		**22**
IV	Construction Project Management CE1112 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Structural Analysis CE1104 (3 0 0) 3	Construction Technology CE1105 (3 0 2) 4	Civil Engineering CAD Lab CE1106 (0 0 2) 1	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	**21**
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)							**4**
V	Transportation Engineering CE1109 (3 0 2) 4	Geotechnical Engineering CE1108 (3 0 2) 4	Automation Project PR1101 2	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	**22**
VI	Design of RC Structures CE1113 (3 0 2) 4	Digital Surveying and Mapping CE1102 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/ OE-II* 4		**20**
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			**20**
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a Partner University PS1102/PR1105/PR1104/ 16							**16**
	Total Credits							**166**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

17

List of Electives	
Sem V	
DE-I	**OE-I**
Hydrology and Water Resources Engineering-CE1213	Introduction to User-Experience-IL1204
Public Health Engineering- CE1201	Idea to Business Model- ED1102
	Energy Management System
	Design and Manufacturing
	Speech Processing
	Numerical Methods- AS1204
Sem VI	
DE-II, III	**OE-II**
Health, Safety, and Environmental Audit- IL2106	Electric Vehicle Technology-EE1220
Advanced Foundation Engineering- CE1210	Green Energy- IL1202
Irrigation Engineering-CE1203	Mechatronics-ME1207
Emerging Tech week	Modern Physics
Geographical Information Systems Lab-CE1114	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
Sem VII (Tentative)	
DE-IV, V, VI	**OE-III (Tentative)**
Earthquake Engineering	Operations Research- AS1201
Advanced Highway Engineering- CE1211	Fintech in Retail Banking and Insurance-FA1151
Integrated Waste Management for Smart Cities-CE1207	Industrial Safety
Design of Advanced Concrete Structures-CE1208	Advanced Statistics- AS1202
CAD-BIM Specialisation (Curated MOOC)-CE1401	

NOTE:
1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE and also in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Structural Engineering, Infra-structure Engineering, Construction Management, or Environmental Engineering (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Mechanical Engineering (Batch 2019-2023)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping ES1102 (6s 0 0) 6	Experimental Science-I AS1101 (1 0 4) 3	Fundamentals of Communication CC1101 (2 0 1) 2				**21**
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering ES1104 (6s 2 0) 6	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Scientific Perspectives AS1102 (2 0 0) 2	Critical Thinking and Storytelling CC1102 (2 0 1) 2		**20**
III	Materials Engineering ME1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Engineering Thermodynamics ME1102 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		**22**
IV	Transport Phenomena ME1104 (3 0 2) 4	Strength of Material and Analysis ME1105 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Production Technology-I ME1106 (3 0 2) 4	Mechanical Engineering CAD Lab ME1107 (0 0 4) 2	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	**23**
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Theory of Machines ME1108 (3 0 2) 4	Production Technology-II ME1109 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	**22**
VI	Design of Machine Elements ME1110 (3 0 2) 4	Automobile Engineering ME1111 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* (3 0 2) 4	DE-III/ OE – II* 4		**20**
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			**20**
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							**16**
	Total Credits							**168**

- ❖ Minimum required credit – 160
- ❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
- ❖ Credits can vary for specific (*) courses.

List of Electives

Sem V

DE-I	OE-I
Computer Integrated Manufacturing- ME1212	Urban and Regional Planning- CE1215
Ventilation and Air Conditioning	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Speech Processing
	Computer Architecture and Operating Systems
	Numerical Methods- AS1204

Sem VI

Emerging Tech week	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	

DE-II, III	OE-II
Computer Aided Product Design and Manufacturing- ME1210	Electric Vehicle Technology-EE1220
Refrigeration and Air Conditioning- ME1205	Green Energy- IL1202
Contemporary Production Technology-ME1214	Mechatronics-ME1207
	Modern Physics
	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
	Disaster Management-CE1206

Sem VII

DE-IV, V, VI (Tentative)	OE-III (Tentative)
IC Engine- ME1201	Geographical Information System- CE1214
Power Plant Engineering- ME1203	Operations Research- AS1201
Vehicle Aerodynamics- ME1213	Fintech in Retail Banking and Insurance- FA1151
Modelling of Engineering Materials- ME1209	Advanced Statistics- AS1202
Industrial Robotics- IL2203	
Mechanical Vibration- ME1208	

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE and also in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Automobile Design and Engineering or Automation and Robotics (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Electrical and Electronics Engineering (Batch 2019 - 2023)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping ES1102 (6s 0 0) 6	Experimental Science-I AS1101 (1 0 4) 3	Fundamentals of Communication CC1101 (2 0 1) 2				21
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering ES1104 (6s 2 0) 6	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Scientific Perspectives AS1102 (2 0 0) 2	Critical Thinking and Storytelling CC1102 (2 0 1) 2		20
III	Data Structures CS1102 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Electronic Devices and Circuits EE1101 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Power Systems-I EE1107/ Digital Systems Design EE1110 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Advanced Electrical Machines EE1103/ Electromagnetics and Microwaves EE1104 (3 0 2) 4	Signals and Control Systems EE1105 (3 0 4) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2		22
	Practice School-I (PS 1101) – (4 to 6 Weeks Duration)							4
V	Analog and Digital Communications EE1109 (3 0 2) 4	Analog Circuits EE1102 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Industrial Electronics EE1112/ Digital Communication Networks EE1208 (3 0 2) 4	Power System- II EE1114/ Digital Signal Processing EE1115 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							**167**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Real Time Operating Systems- EE1214	Urban and Regional Planning- CE1215
Power system Protection- EE1215	Introduction to User-Experience-IL1204
	Idea to Business Model- ED1102
	Design and Manufacturing
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	
DE-II, III	**OE-II**
Industrial IoT- EE1216	Electric Vehicle Technology-EE1220
Electrical Safety	Green Energy- IL1202
Full Stack Web Development with REACT-CS1212	Mechatronics-ME1207
Cyber Security-EE1219	Disaster Management- CE1206
Flexi Core	Modern Physics
Industrial Electronics-EE1112	Introduction to Nano Technology
Digital Communication Networks-EE1205	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Industrial Drive and E-Vehicle- EE1206	Geographical Information System- CE1214
Industrial Robotics- IL2203	Operations Research- AS1201
Information Theory and Coding- EE1218	Fintech in Retail Banking and Insurance-FA1151
Advanced Communication Systems- EE1211	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202
Advances in Power Delivery- EE1213	

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE (through electives/minor project, 16 Credits) or a Concentration in Renewable Energy Systems, Control and Automation, Electrical Vehicles, Digital Systems, or Communications and Signal Processing (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Computer Science and Engineering (Batch 2019-2023)

Sem	Courses						Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping ES1102 (6s 0 0) 6	Experimental Science-I AS1101 (1 0 4) 3	Fundamentals of Communication CC1101 (2 0 1) 2			21
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering ES1104 (6s 2 0) 6	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Scientific Perspectives AS1102 (2 0 0) 2	*IBM SP-I Python Programming* CS1301 (1 0 2) 1	Critical Thinking and Storytelling CC1102 (2 0 1) 2	20/21*
III	Data Structures CS1102 (3 0 2) 4	Theoretical Foundation of Computer Science CS1103 (3 1 0) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Management Perspectives IL1101 (2 0 0) 2	*IBM SP-II Data Visualisation* CS1310 (2 0 2) 3	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	22/25*
IV	Design and Analysis of Algorithms CS1105 (3 0 2) 4	Database Systems CS1106 (3 0 2) 4	Computer Architecture and Organization CS1107 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Introduction to Design IL1102 2	*IBM SP-III Enterprise Programming using Java* CS1303 (2 0 2) 3	Communication and Identity CC1104 (2 0 1) 2	21/24*
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits						
V	Operating Systems CS1108 (3 0 2) 4	Artificial Intelligence and Machine Learning CS1110 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I*/*IBM-SP-IV (Cloud Computing-CS1304)* (3 0 2) 4	OE-I* 4	22
VI	Computer Networks and Distributed Systems CS1111 (3 0 2) 4	Compiler Design-CS1112/Software Engineering-CS1113 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II*/*IBM-SP-V (Big Data Engineering-CS1312)* (3 0 2) 4	DE-III*/OE-II*/*IBM-SP-VI (Business Intelligence-CS1305)* (3 0 2) 4		20
VII	Minor Project-PR1103/*IBM-SP-VII (AI with IBM Watson-CS1314)* (3 0 2) 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits						166-173*

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I	**OE-I**
Mobile Application Development- CS1205	Urban and Regional Planning- CE1215
Cryptography- CS1214	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Design and Manufacturing
	Speech Processing
	Numerical Methods- AS1204
	Numerical and Scientific Computing- AS2202
Sem VI	
Emerging Tech week	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	**OE-II**
DE-II	Electric Vehicle Technology-EE1220
Cloud Computing Architecture-CS1217	Green Energy- IL1202
Deep Learning-CS1218	Mechatronics-ME1207
Software Engineering-CS1113 (Flexi core)	Disaster Management- CE1206
Compiler Design-CS1112 (Flexi core)	Modern Physics
DE-III	Introduction to Nano Technology
Full Stack Web Development with REACT-CS1212	Introduction to Quantum Computing
Cyber Security-EE1219	Engineering Optimisation
	Integral Transforms
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Advanced Data Structures and Algorithms-CS1213	Geographical Information System- CE1214
Blockchain Technology and Applications-CS1203	Operations Research- AS1201
Natural Language Processing- CS2203	Fintech in Retail Banking and Insurance-FA1151
Cross-Platform App Development- CS1215	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Data Science, Artificial Intelligence, Embedded Systems and IoT, Software Engineering and Robotic Process Automation, Cloud Computing, Big Data Analytics, Information Security, or Mobile Computing (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

Additional Courses offered for the B. Tech students (2019-23)

Bachelor of Technology in Computer Science and Engineering

Sem	Code	Course Name	Credits
III	CS1411	Object Oriented Programming in JAVA (MOOC)	2
IV	CS1402	Data Analytics using Python (MOOC)	4
IV	CS1414	Introduction to Programming (MOOC)	2

- These courses are offered to enable students for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

Bachelor of Technology in Computer Science and Engineering

Sem	Code	Course Name	Credits
III	CS1411	Object Oriented Programming in JAVA (MOOC)	2
IV	CS1402	Data Analytics using Python (MOOC)	4
IV	CS1414	Introduction to Programming (MOOC)	2

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Civil Engineering (Batch 2020-2024)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping - I ES1110 (3s 0 0) 3	Fundamentals of Automation Engineering - I ES1111 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering-II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Experimental Science AS1101 (1 0 4) 3	Design and Prototyping - II ES1112 (3s 0 0) 3	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Civil Engineering Materials CE1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Fluid Mechanics and Hydraulic Engineering CE1103 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Digital Surveying and Mapping CE1102 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Structural Analysis CE1104 (3 0 0) 3	Construction Technology CE1105 (3 0 2) 4	Civil Engineering CAD Lab CE1106 (0 0 2) 1	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	21
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)							4
V	Design of RC Structures CE1113 (3 0 2) 4	Geotechnical Engineering CE1108 (3 0 2) 4	Automation Project PR1101 2	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Transportation Engineering CE1109 (3 0 2) 4	Construction Project Management CE1112 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a Partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							166

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE and also in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Structural Engineering, Infra-structure Engineering, Construction Management, or Environmental Engineering (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Mechanical Engineering (Batch 2020-2024)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping -I ES1110 (3s 0 0) 3	Fundamentals of Automation Engineering -I ES1111 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Communication CC1101 (2 0 1) 2			**20**
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Design and Prototyping -II ES1112 (3s 0 0) 3	Fundamentals of Automation Engineering -II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Experimental Science AS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Critical Thinking and Storytelling CC1102 (2 0 1) 2	**21**
III	Materials Engineering ME1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Engineering Thermodynamics ME1102 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		**22**
IV	Transport Phenomena ME1104 (3 0 2) 4	Strength of Material and Analysis ME1105 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Production Technology-I ME1106 (3 0 2) 4	Mechanical Engineering CAD Lab ME1107 (0 0 4) 2	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	**23**
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Theory of Machines ME1108 (3 0 2) 4	Production Technology -II ME1109 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	**22**
VI	Design of Machine Elements ME1110 (3 0 2) 4	Automobile Engineering ME1111 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* (3 0 2) 4	DE-III/ OE –II* 4		**20**
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			**20**
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							**16**
	Total Credits							**168**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Computer Integrated Manufacturing- ME1212	Urban and Regional Planning- CE1215
Ventilation and Air Conditioning	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Speech Processing
	Computer Architecture and Operating Systems
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week (Tentative)	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	
DE-II, III (Tentative)	**OE-II (Tentative)**
Computer Aided Product Design and Manufacturing- ME1210	Electric Vehicle Technology-EE1220
Refrigeration and Air Conditioning- ME1205	Green Energy- IL1202
Contemporary Production Technology-ME1214	Mechatronics-ME1207
	Modern Physics
	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
	Disaster Management-CE1206
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
IC Engine- ME1201	Geographical Information System- CE1214
Power Plant Engineering- ME1203	Operations Research- AS1201
Vehicle Aerodynamics- ME1213	Fintech in Retail Banking and Insurance- FA1151
Modelling of Engineering Materials- ME1209	Advanced Statistics- AS1202
Industrial Robotics- IL2203	
Mechanical Vibration- ME1208	

NOTE:

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2. Students have the option for earning additional Minor certification from CSE and also in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Automobile Design and Engineering or Automation and Robotics (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Electronics and Communication Engineering (Batch 2020-2024)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping - I ES1110 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Automation Engineering–I ES1111 (3s 0 0) 3	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Fundamentals of Automation Engineering - II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Design and Prototyping - II ES1112 (3s 0 0) 3	Experimental Science AS1101 (1 0 4) 3	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Data Structures CS1102 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Electronic Devices and Circuits EE1101 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Digital Systems Design EE1110 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Electromagnetics and Microwaves EE1104 (3 0 2) 4	Signals and Control Systems EE1105 (3 0 4) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2		22
	Practice School-I (PS1101) – (4 to 6 Weeks Duration)							4
V	Analog and Digital Communications EE1109 (3 0 2) 4	Analog Circuits EE1102 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-1* 4	OE-I* 4	22
VI	Digital Communication Networks EE1208 (3 0 2) 4	Digital Signal Processing EE1115 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0)2	DE-II* 4	DE-III/OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							**167**

- ❖ Minimum required credit – 160
- ❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
- ❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Real Time Operating Systems- EE1214	Urban and Regional Planning- CE1215
Cyber Security-EE1219	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Design and Manufacturing
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week (Tentative)	
Building RPA Applications- CS1121	
Electric Vehicle- EE1116	
DE-II, III (Tentative)	**OE-II (Tentative)**
Industrial IoT- EE1216	Electric Vehicle Technology-EE1220
Software Defined Radio	Green Energy- IL1202
Industrial Electronics- EE1112	Mechatronics-ME1207
Electrical Safety	Disaster Management- CE1206
	Modern Physics
	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Industrial Drive and E-Vehicle- EE1206	Geographical Information System- CE1214
Industrial Robotics- IL2203	Operations Research- AS1201
Information Theory and Coding- EE1218	Fintech in Retail Banking and Insurance- FA1151
Advanced Communication Systems- EE1211	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202
Advances in Power Delivery- EE1213	

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE (through electives/minor project, 16 Credits) or a Concentration in Digital Systems or Communications and Signal Processing (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Computer Science and Engineering (Batch 2020-2024)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping-I ES1110 (3s 0 0) 3	Fundamentals of Automation Engineering-I ES1111 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Design and Prototyping-II ES1112 (3s 0 0) 3	Fundamentals of Automation Engineering-II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Experimental Science AS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Data Structures CS1102 (3 0 2) 4	Theoretical Foundation of Computer Science CS1103 (3 1 0) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Design and Analysis of Algorithms CS1105 (3 0 2) 4	Database Systems CS1106 (3 0 2) 4	Computer Architecture and Organization CS1107 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2		21
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Operating Systems CS1108 (3 0 2) 4	Artificial Intelligence and Machine Learning CS1110 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Computer Networks and Distributed Systems CS1111 (3 0 2) 4	Compiler Design-CS1112/Software Engineering-CS1113 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/ OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							166

- ❖ Minimum required credit – 160
- ❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
- ❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Mobile Application Development- CS1205	Urban and Regional Planning- CE1215
Cryptography- CS1214	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Design and Manufacturing
	Speech Processing
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week (Tentative)	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	**OE-II (Tentative)**
DE-II (Tentative)	Electric Vehicle Technology-EE1220
Cloud Computing Architecture-CS1217	Green Energy- IL1202
Deep Learning-CS1218	Mechatronics-ME1207
Software Engineering-CS1113 (Flexi core)	Disaster Management- CE1206
Compiler Design-CS1112 (Flexi core)	Modern Physics
DE-III (Tentative)	Introduction to Nano Technology
Full Stack Web Development with REACT-CS1212	Introduction to Quantum Computing
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Advanced Data Structures and Algorithms-CS1213	Geographical Information System- CE1214
Blockchain Technology and Applications-CS1203	Operations Research- AS1201
Natural Language Processing- CS2203	Fintech in Retail Banking and Insurance-FA1151
Cross-Platform App Development- CS1215	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Data Science, Artificial Intelligence, Embedded Systems and IoT, Software Engineering and Robotic Process Automation, Cloud Computing, Big Data Analytics, Information Security, or Mobile Computing (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Mechanical Engineering (Batch 2021-2025)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping-I ES1110 (3s 0 0) 3	Fundamentals of Automation Engineering-I ES1111 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Design and Prototyping-II ES1112 (3s 0 0) 3	Fundamentals of Automation Engineering-II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Experimental Science AS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Materials Engineering ME1101 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Engineering Thermodynamics ME1102 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Transport Phenomena ME1104 (3 0 2) 4	Strength of Material and Analysis ME1105 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Production Technology-I ME1106 (3 0 2) 4	Mechanical Engineering CAD Lab ME1107 (0 0 4) 2	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2	23
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Theory of Machines ME1108 (3 0 2) 4	Production Technology-II ME1109 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Design of Machine Elements ME1110 (3 0 2) 4	Automobile Engineering ME1111 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* (3 0 2) 4	DE-III /OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							**168**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Computer Integrated Manufacturing- ME1212	Urban and Regional Planning- CE1215
Ventilation and Air Conditioning	Introduction to User-Experience- IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Speech Processing
	Computer Architecture and Operating Systems
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week (Tentative)	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	
DE-II, III (Tentative)	**OE-II (Tentative)**
Computer Aided Product Design and Manufacturing- ME1210	Electric Vehicle Technology-EE1220
Refrigeration and Air Conditioning- ME1205	Green Energy- IL1202
Contemporary Production Technology-ME1214	Mechatronics-ME1207
	Modern Physics
	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
	Disaster Management-CE1206
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
IC Engine- ME1201	Geographical Information System- CE1214
Power Plant Engineering- ME1203	Operations Research- AS1201
Vehicle Aerodynamics- ME1213	Fintech in Retail Banking and Insurance- FA1151
Modelling of Engineering Materials- ME1209	Advanced Statistics- AS1202
Industrial Robotics- IL2203	
Mechanical Vibration- ME1208	

NOTE:

1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE and also in Cyber-Physical Systems (through electives/minor project, 16 Credits) or a Concentration in Automobile Design and Engineering or Automation and Robotics (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
5. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
7. Students can optionally undergo additional summer internship of 2 credits each after first year and third year to complete their credit requirement.
8. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases, e.g., lateral entry/transfer cases, semester exchange at partner universities, medical cases, student detention, backlog, etc.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Electronics and Communication Engineering (Batch 2021-2025)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping-I ES1110 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Automation Engineering-I ES1111 (3s 0 0) 3	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Design and Prototyping-II ES1112 (3s 0 0) 3	Object Oriented Programming CS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Fundamentals of Automation Engineering-II ES1113 (3s 0 2) 3	Experimental Science AS1101 (1 0 4) 3	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Data Structures CS1102 (3 0 2) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Electronic Devices and Circuits EE1101 (3 0 2) 4	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1)2		22
IV	Digital Systems Design EE1110 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Electromagnetics and Microwaves EE1104 (3 0 2) 4	Signals and Control Systems EE1105 (3 0 4) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2		22
V	(PS1101) Practice School-I - 4 Credits							
V	Analog and Digital Communications EE1109 (3 0 2) 4	Digital Signal Processing EE1115 (3 0 2) 4	Introduction to IoT EE1111 (1 0 2) 2	Automation Project PR1101 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Digital Communication Networks EE1208 (3 0 2) 4	Machine Learning for Communication and Signal Processing EE1118 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104 16							16
	Total Credits							**167**

- Minimum required credit – 160
- A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
- Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Real Time Operating Systems- EE1214	Design and Manufacturing
Cyber Security-EE1219	Infrastructure and Urban Planning- CE1212
	Digital and Embedded Systems
	Idea to Business Model- ED1102
	Numerical Methods- AS1204
	Introduction to User-Experience- IL1204
Sem VI	
Emerging Tech week (Tentative)	
Building RPA Applications- CS1121	
Electric Vehicle- EE1116	
DE-II, III (Tentative)	**OE-II (Tentative)**
Industrial IoT- EE1216	Electric Vehicle Technology-EE1220
Software Defined Radio	Green Energy- IL1202
Industrial Electronics- EE1112	Mechatronics-ME1207
Electrical Safety	Disaster Management- CE1206
	Modern Physics
	Introduction to Nano Technology
	Introduction to Quantum Computing
	Engineering Optimisation
	Integral Transforms
	Algorithm Design and Analysis-CS1126
	Virtualisation and Cloud Computing-CS1127
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Industrial Drive and E-Vehicle- EE1206	Geographical Information System- CE1214
Industrial Robotics- IL2203	Operations Research- AS1201
Information Theory and Coding- EE1218	Fintech in Retail Banking and Insurance- FA1151
Advanced Communication Systems- EE1211	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202

NOTE:
1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
2. Students have the option for earning additional Minor certification from CSE (through electives/minor project, 16 Credits) or a Concentration in Digital Systems or Communications and Signal Processing (through electives, 12 credits).
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Emerging Tech Week in the VI semester is a slot in which the actual course is decided flexibly. The course has to be in an emerging technology area. Students have the option to replace the course on Emerging Tech Week by a Department elective or Open elective.
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6. Student can optionally take upto four Independent Study courses with 2 credits each to complete their credit requirement.
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JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Technology in Computer Science and Engineering (Batch 2021-2025)

Sem	Courses							Credits
I	Computational Data Analysis ES1101 (10s 2 0) 10	Design and Prototyping-I ES1110 (3s 0 0) 3	Fundamentals of Automation Engineering-I ES1111 (3s 0 0) 3	Scientific Perspectives AS1102 (2 0 0) 2	Fundamentals of Communication CC1101 (2 0 1) 2			20
II	Calculus and Applied Mechanics ES1103 (6s 2 0) 6	Design and Prototyping - II ES1112 (3s 0 0) 3	Fundamentals of Automation Engineering-II ES1113 (3s 0 2) 3	Object Oriented Programming CS1101 (1 0 4) 3	Experimental Science AS1101 (1 0 4) 3	Energy and Environmental Studies ES1105 (1 0 0) 1	Critical Thinking and Storytelling CC1102 (2 0 1) 2	21
III	Data Structures CS1102 (3 0 2) 4	Theoretical Foundation of Computer Science CS1103 (3 1 0) 4	Computational Engineering Analysis-I ES1106 (3 1 2) 5	Engineering Measurements and Machines ES1107 (3 0 4) 5	Management Perspectives IL1101 (2 0 0) 2	Perspectives on Contemporary Issues CC1103 (2 0 1) 2		22
IV	Design and Analysis of Algorithms CS1105 (3 0 2) 4	Database Systems CS1106 (3 0 2) 4	Computer Architecture and Organization CS1107 (3 0 2) 4	Computational Engineering Analysis-II ES1109 (3 1 2) 5	Introduction to Design IL1102 2	Communication and Identity CC1104 (2 0 1) 2		21
	Practice School-I (PS1101) – (4 to 6 Weeks Duration) - 4 Credits							
V	Operating Systems CS1108 (3 0 2) 4	Artificial Intelligence and Machine Learning CS1110 (3 0 2) 4	Automation Project PR1101 2	Introduction to IoT EE1111 (1 0 2) 2	Understanding and Managing Conflict CC1105 (2 0 0) 2	DE-I* 4	OE-I* 4	22
VI	Computer Networks and Distributed Systems CS1111 (3 0 2) 4	Compiler Design-CS1112/Software Engineering-CS1113 (3 0 2) 4	Emerging Tech Week 2	Critical Thinking for Decisions at Workplace CC1106 (2 0 0) 2	DE-II* 4	DE-III/OE-II* 4		20
VII	Minor Project PR1103 4	DE-IV* 4	DE-V* 4	DE-VI* 4	OE-III* 4			20
VIII	Practice School-II /Entrepreneurial Project/Research Project/Semester at a partner University PS1102/PR1105/PR1104/ 16							16
	Total Credits							**166**

❖ Minimum required credit – 160
❖ A student can choose to drop DE/OE and still complete the minimum credit requirement of 160 for completion of B.Tech.
❖ Credits can vary for specific (*) courses.

List of Electives	
Sem V	
DE-I (Tentative)	**OE-I (Tentative)**
Mobile Application Development- CS1205	Urban and Regional Planning- CE1215
Cryptography - CS1214	Introduction to User-Experience-IL1204
	Idea to Business Model- ED1102
	Energy Management System
	Design and Manufacturing
	Speech Processing
	Numerical Methods- AS1204
Sem VI	
Emerging Tech week (Tentative)	
Robotic Process Automation Lab-CS1125	
Geographical Information Systems Lab-CE1114	**OE-II (Tentative)**
DE-II (Tentative)	Electric Vehicle Technology-EE1220
Cloud Computing Architecture-CS1217	Green Energy- IL1202
Deep Learning-CS1218	Mechatronics-ME1207
Software Engineering-CS1113 (Flexi core)	Disaster Management- CE1206
Compiler Design-CS1112 (Flexi core)	Modern Physics
DE-III (Tentative)	Introduction to Nano Technology
Full Stack Web Development with REACT-CS1212	Introduction to Quantum Computing
Sem VII	
DE-IV, V, VI (Tentative)	**OE-III (Tentative)**
Advanced Data Structures and Algorithms-CS1213	Geographical Information System- CE1214
Blockchain Technology and Applications-CS1203	Operations Research- AS1201
Natural Language Processing- CS2203	Fintech in Retail Banking and Insurance-FA1151
Cross-Platform App Development- CS1215	Industrial Safety
Machine Vision- EE1217	Advanced Statistics- AS1202

NOTE:
1. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
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Additional Courses offered for B. Tech students (2021-25)

Sem	Code	Course Name	Credits
B. Tech-all branches			
I	CC1201	Law, Technology and Society*	2
I	ES1201	Creative Engineering*	1
I	CS1216	Web Development*	1
I	IL1205	Introduction to Visual Design*	2

- The courses were conducted for students who got early admission in the program. These credits will count towards the open electives.

Additional Courses offered for B. Tech students (2021-25)

Sem	Code	Course Name	Credits
B. Tech-all branches			
I	CC1201	Law, Technology and Society*	2
I	ES1201	Creative Engineering*	1
I	CS1216	Web Development*	1

Program Specific Outcomes

(2020-22 Batch onwards)

- ❖ Master of Technology in Data Science
- ❖ Master of Technology in Health, Safety, and Environmental Engineering
- ❖ Master of Technology in Automation and Robotics

Master of Technology in Data Science

The Data Science graduates of JKLU will be able to:

DSPSO1: Identify, extract, and pull together available and pertinent heterogeneous data and use appropriate computational principles, platforms and techniques to discover new relations and deliver insights into research problem or organizational processes and support decision-making.

DSPSO2: Conceive, design, implement, and manage data analytics, data management and information systems, services, and processes by using principles of computer science, data management, machine learning, computational statistics, software engineering, and state of the art platforms, components and tools.

DSPSO3: Serve in the areas of data analytics, data science, or business analytics in business, consultancy, industry, government, healthcare, education, research, etc.

Master of Technology in Health, Safety, and Environmental Engineering

The Health, Safety, and Environmental Engineering graduates of JKLU will be able to:

HSEPSO1: Interpret and apply legislative requirements, industry standards, and best practices in a variety of workplaces.

HSEPSO2: Collect, manage, and interpret information and data to identify hazardous conditions and practices in a variety of workplaces.

HSEPSO3: Prevent and control harm to workers, property, the environment and the general public by conceiving, designing, and implementing alternative engineering and management systems and practices in compliance with laws and/or employer policies by using principles of engineering, industrial safety, risk management, data analytics, automation, and state of the art platforms, components and tools.

HSEPSO4: Serve in fields of environmental health and safety, safety engineering, industrial hygiene, safety and occupational health in business, consultancy, industry, government, healthcare, education, research, etc.

Master of Technology in Automation and Robotics

The graduates of Automation and Robotics at JKLU will be able to:

ARPSO1: Conceive, design, implement, and manage automation systems by using principles of physical computing, control and automation, mechatronics and robotics, robotic process automation, artificial intelligence, and state of the art components and tools.

ARPSO2: Serve in fields of industrial automation, robotics, systems engineering, IT and engineering services, education, research, etc.

Program specific desired minimum level of competence for POs and PSOs

PO/PSO	M.Tech		
	DS	HSEE	A & R
PO 1	Competent	Competent	Competent
PO 2a	Novice	Advanced Beginner	Novice
PO 2b	Novice/ Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 2c	Novice	Advanced Beginner	Novice
PO 3a	Competent	Competent	Competent
PO 3b	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 3c	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4a	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4b	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 4c	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 5a	Advanced Beginner	Competent	Competent
PO 5b	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 6	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 7a	Advanced Beginner	Advanced Beginner	Advanced Beginner
PO 7b	Novice	Novice	Novice
PSO 1	Competent (DSPSO1)	Competent (HSEPSO1)	Competent (ARPSO1)
PSO 2	Competent (DSPSO2)	Competent (HSEPSO2)	Competent (ARPSO2)
PSO 3	Competent (DSPSO3)	Competent (HSEPSO3)	NA
PSO4	NA	Competent (HSEPSO4)	NA

Following process has been adopted to create Course Articulation Matrix (CAM) and Program Articulation Matrix (PAM).

- Course Outcome of each Course is mapped to Program Outcome (PO) / Program Specific Outcome (PSO) using three Levels viz., Low Correlation (1), Moderate Correlation (2) and Substantial Correlation (3).
- Average of these Levels of each Course Outcome w.r.t each specific PO/PSO is calculated and it indicates expectations laid in a course to attain different PO/PSO. In order to avoid over commitment of a course w.r.t its contribution to POs/PSOs, the following validation check is applied on the sum of PO/PSO wise averages in each course.

$$\sum (Average) <= Min (Credits * Year, 20)$$

In above equation, Credits are the credits assigned to the course, Year (5 for 1st Year and 6 for 2nd Year) indicates the level of the students from 1st and 2nd year. In case this sum exceeds the upper limit, CO-PO mappings are revised. This check ensures that early or low credit courses are not over burdened with very high expectations.

- For creation of Program Articulation Matrix, sum of these averages of different courses w.r.t each PO/PSO is calculated and interpreted as per following Table.

Competence Level *	M.Tech
Novice	<5
Advanced Beginner	5 - 10
Competent	>=10

Novice* (N): Knows objective facts, features, and rules for determining actions w.r.t. this PO/PSO without being context-sensitive. The student has studied the basic concepts.

Advanced beginner* (AB): Recognizes common situations w.r.t. this PO/PSO that help in recalling which rules should be exercised, starts to recognize and handle situations not covered by given facts, features and rules. The student has problem-solving and repeated practice experience for common situations w.r.t. this PO/PSO.

Competent* (C): Performs most standard actions w.r.t. PO/PSO without conscious application of rules after considering the whole situation. Handles new situations through the appropriate application of rules, can design systems, and may lead. Has demonstrated this PO/PSO through repeated engagements in advanced problem-solving, projects, extensive practice in common and exception situations, and participated in professional networks.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Data Science (Batch 2020-2022)

Sem	Courses						Credits
I	Statistical Data Analysis AS2101 (3 0 4) 5	Cloud based Big Data System-I CS2101 (3 0 2) 4	Machine Learning and Data Mining CS2102 (3 0 4) 5	Project-I PR2101/ Research Methodology -I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	Elective-I (3 0 0)3	**21**
II	Statistical Data Analysis-II AS2104 (3 0 4) 5	Cloud based Big Data System-II CS2114 (3 0 2) 4	Applied Advanced Machine Learning CS2115 (3 0 4) 5	Project-II PR2102/ Research Methodology-II IL2108 (2 0 0) 2	Critical Thinking for Decisions at Workplace CC2114 (2 0 0) 2	Elective-II (3 0 0) 3	**21**
	PS2101-Internship (6- 8 weeks)						**4**
	Exit Option with PG Diploma						
III	Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10	Elective-III (3 0 0) 4	Elective -IV (3 0 0) 4				**18**
IV	Dissertation-II/ Industrial Project-II/ Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16						**16**
							80

Elective-I
Robotic Process Automation and Applications- CS2103
Industrial Automation and IoT-I- EE2101
Elective-II
Web Algorithms and Analytics
Computer Vision-EE2201
Elective-III/IV
Natural Language Processing- CS2203
Large Scale Graph Analytics- CS2201
Special Topics in Data Science

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and ass scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to assess proble solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency completion of academically equivalent core course requirements in special cases.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Data Science (Batch 2021-2023)

Sem	Courses						Credits
I	Statistical Data Analysis-I AS2106 (3 0 4) 5	Cloud based Big Data System-I CS2101 (3 0 2) 4	Machine Learning and Data Mining CS2102 (3 0 4) 5	Project- I PR2101/ Research Methodology -I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	Elective-I (3 0 0)4	22
II	Statistical Data Analysis-II AS2104 (3 0 4) 5	Cloud based Big Data System-II CS2114 (3 0 2) 4	Applied Advanced Machine Learning CS2115 (3 0 4) 5	Project-II PR2102 / Research Methodology-II IL2108 (2 0 0) 2	Critical Thinking for Problem Solving and Decisions CC2121 (2 0 0) 2	Elective-II (3 0 0) 4	22
	PS2101-Internship (6- 8 weeks)						4
	Exit Option with PG Diploma						
III	Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10		Elective-III (3 0 0) 4	Elective-IV (3 0 0) 4			18
IV	Dissertation-II/ Industrial Project-II/ Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16						16
							82

Elective-I
Robotic Process Automation and Applications- CS2103
Advanced Algorithms- CS2202
Elective-II (Tentative)
Web Algorithms and Analytics
Computer Vision- EE2201
Elective-III/IV (Tentative)
Natural Language Processing- CS2203
Large Scale Graph Analytics- CS2201
Special Topics in Data Science

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Health, Safety, and Environmental Engineering (Batch 2020-2022)

Courses						Credits
Semester I						
Statistical Data Analysis AS2101 (3 0 4) 5	Industrial Automation and IoT-I EE2101 (3 0 2) 4	Industrial Safety Management ME2101 (3 0 4) 5	Project-I PR2101/ Research Methodology –I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	Elective-I (3 0 0) 3	**21**
Semester II						
Health, Safety, and Environment Audit IL2106 (4 0 2) 5	Risk and Hazard Management IL2103A (3 0 2) 4	Regulation for Health, Safety, and Environment Management IL2104 (4 0 2) 5	Project-II PR2102/ Research Methodology-II IL2108 (2 0 0) 2	Critical Thinking for Decisions at Workplace CC2114 (2 0 0)2	Elective-II (3 0 0) 3	**21**
Internship (6- 8 weeks) PS2101						**4**
Exit Option with PG Diploma						
Semester III						
Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10		Elective-III (3 0 0) 4		Elective – IV (3 0 0) 4		**18**
Semester IV						
Dissertation-II/ Industrial Project-II/ Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16						**16**
Total Credits						**80**

List of Electives	
SEMESTER-I	**SEMESTER-II**
Elective-I	**Elective -II**
Industrial Waste Management- CE2201	Occupational Hygiene and Health- IL2201
Structural Health and Monitoring	Safety in Construction and Mining- CE2204
Electrical Safety	Statistical Data Analysis-II-AS2104
	Industrial Automation and IoT-II
SEMESTER-III	
Elective-III, IV	
Fire Engineering and Management-ME2201	
Transportation Safety Engineering	
Green Building Technology	
Chemical Safety-ME2202	
Environmental Impact Assessment- CE2205	
Biomechanics for Ergonomics	

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Health, Safety, and Environmental Engineering (Batch 2021-2023)

Courses						Credits
Semester I						
Statistical Data Analysis-I AS2106 (3 0 4) 5	Industrial Automation and IoT-I EE2101 (3 0 2) 4	Industrial Safety Management ME2101 (3 0 4) 5	Project-I PR2101 / Research Methodology –I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	Elective-I (3 0 0) 4	**22**
Semester II						
Health, Safety, and Environment Audit IL2106 (4 0 2) 5	Risk and Hazard Management IL2103A (3 0 2) 4	Regulation for Health, Safety, and Environment Management IL2104 (4 0 2) 5	Project-II PR2102/ Research Methodology-II IL2108 (2 0 0) 2	Critical Thinking for problem solving and Decisions CC2121 (2 0 0) 2	Elective-II (3 0 0) 4	**22**
Internship (6- 8 weeks) PS2101						**4**
Exit Option with PG Diploma						
Semester III						
Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10		Elective-III (3 0 0) 4		Elective – IV (3 0 0) 4		**18**
Semester IV						
Dissertation-II/ Industrial Project-II/ Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16						**16**
Total Credits						**82**

List of Electives	
SEMESTER-I	**SEMESTER-II**
Elective-I	**Elective-II (Tentative)**
Industrial Waste Management- CE2201	Occupational Hygiene and Health- IL2201
Safety in Construction and Mining- CE2204	Electrical Safety
Structural Health and Monitoring	Environmental Social Governance
SEMESTER-III	
Elective-III, IV (Tentative)	
Fire Engineering and Management- ME2201	
Transportation Safety Engineering	
Green Building Technology	
Chemical Safety-ME2202	
Environmental Impact Assessment- CE2205	
Biomechanics for Ergonomics	

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized and assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are designed to a problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Automation and Robotics (Batch 2020-2022)

Courses							Credits
Semester I							
Optimisation and Control EE2104 (3 1 0) 4	Instrumentation and Embedded Systems Laboratory EE2102 (0 0 4) 2	Industrial Automation and IoT-I EE2101 (3 0 2) 4	Robotic Process Automation and Applications CS2103 (3 0 4) 5	Elective-I (3 0 0) 3	Project-I (PR2101)/ Research Methodology -I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	21
Semester II							
Intelligent Control Systems EE2106 (3 0 4) 5	Industrial Automation and IoT-II EE2105 (3 0 2) 4	Mechatronics ME1207 (3 0 4) 5	Elective-II (3 0 0) 4	Project-II PR2102 / Research Methodology-II IL2108 (2 0 0) 2		Critical Thinking for Decisions at Workplace CC2114 (2 0 0)2	21
Internship (PS2101) (6-8 weeks)							4
Exit Option with PG Diploma							
Semester III							
Elective-III (3 0 0) 4	Elective–IV (3 0 0) 4	Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10					18
Semester IV							
Dissertation-II/Industrial Project-II/Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16							16
Total Credits							80
List of Electives							Credits

Elective I
Statistical Data Analysis-AS2101
Advanced Algorithm- CS2202
Elective II
Computer Vision- EE2201
Statistical Data Analysis-II- AS2104
Elective III, Elective IV
Computational Game Theory and Applications- EE2202
Large Scale Graph Analytics- CS2201
Industrial Robotics- IL2203

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasize assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are des assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Master of Technology in Automation and Robotics (Batch 2021-2023)

Courses							Credits
Semester I							
Optimisation and Control EE2104 (3 1 0) 4	Instrumentation and Embedded Systems Laboratory EE2102 (0 0 4) 2	Industrial Automation and IoT-I EE2101 (3 0 2) 4	Robotic Process Automation and Applications CS2103 (3 0 4) 5	Project-I PR2101/ Research Methodology-I IL2107 (2 0 0) 2	Critical Thinking for Developing Perspectives CC2171 (2 0 0) 2	Elective-I (3 0 0) 4	**22**
Semester II							
Intelligent Control Systems EE2106 (3 0 4) 5	Industrial Automation and IoT-II EE2105 (3 0 2) 4	Mechatronics ME1207 (3 0 4) 5	Project-II PR2102/ Research Methodology-II IL2108 (2 0 0) 2	Critical Thinking for Problem Solving and Decisions CC2121 (2 0 0) 2		Elective-II (3 0 0) 4	**22**
PS2101 Internship (6-8 weeks)							**4**
Exit Option with PG Diploma							
Semester III							
Dissertation-I/ Industrial Project-I/ Entrepreneurial Project-I PR2103/ PR2104/ PR2105 10		Elective-III (3 0 0) 4		Elective – IV (3 0 0) 4			**18**
Semester IV							
Dissertation-II/ Industrial Project-II/ Entrepreneurial Project-II PR2106/ PR2107/ PR2108 16							**16**
Total Credits							**82**

Elective I
Statistical Data Analysis-I- AS2106
Advanced Algorithms- CS2202
Elective II (Tentative)
Electric Vehicle Technology-EE1220
Statistical Data Analysis-II- AS2104
Elective III, Elective IV (Tentative)
Computational Game Theory and Applications-EE2202
Large Scale Graph Analytics- CS2201
Industrial Robotics- IL2203

NOTE:
1. Students have the option to exit the program with a PG Diploma after completing one year and internship.
2. For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
3. Learning outcomes focus on higher order thinking and practical skills. Rote learning is completely de-emphasized assessment scheme includes several components like assignments, labs, projects, reports etc. The exams are desig assess problem solving ability through questions focusing on analysis, synthesis, and evaluation.
4. Relevant engineering standards and sustainability issues are incorporated in all engineering courses.
5. A student may sometimes be allowed to take a few additional courses for earning extra credits, fulfilling credit deficiency or completion of academically equivalent core course requirements in special cases

Program Education Objectives

Program Outcomes, Program Specific Outcomes

(2020-23 Batch onwards)

❖ Bachelor of Computer Applications (3108)

Program Education Objectives

The BCA Program at IET, JKLU is designed to prepare students for continued learning and successful careers. Our alumni are expected to:

PEOCA1: Apply their information technology related knowledge and complex problem solving in professional practice.

PEOCA2: Continue their intellectual development through critical thinking, self-study, apprenticeship, higher education, professional development courses, as well as participation in professional networks.

PEOCA3: Serve as ambassadors for information technology and sustainability by exhibiting high professional standards with a deep sense of civic responsibility.

PEOCA4: Effectively communicate about information technology and related issues.

PEOCA5: Embrace the roles of team members and leaders in their careers.

Program Outcomes

The graduates of BCA Program at IET, JKLU will have following competencies:

POCA1: Life-long learning: Demonstrate inquisitiveness, open mindedness, and the ability to engage in independent and life-long learning in the broadest context of technological, organizational, economic, and societal changes.

POCA2: Citizenship, Sustainability, and Professional ethics

POCA2a: Demonstrate knowledge of constitutional values of liberty, equity, justice, and fraternity with understanding of the impact of the computing solutions in societal and environmental contexts as well as a sense of responsibility for sustainable development.

POCA2b: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, cultural, and environmental issues and the consequent responsibilities relevant to the professional IT practice.

POCA2c: Demonstrate commitment for professional integrity and excellence and respect for ethics, responsibilities and norms as prescribed for the IT practice.

POCA3: Computing knowledge and Modern IT tool usage

POCA3a: Demonstrate clear conceptual understanding of fundamentals of computing and cognitive flexibility to appropriately 'transfer' what has been learned in a context, to different situations.

POCA3b: Apply computational thinking, and the knowledge of, computing fundamentals, information technology, and management to the solution of complex computing problems.

POCA3c: Create, select, modify, and apply appropriate techniques, best practices, standards, resources, and modern IT tools with an understanding of the limitations.

POCA4: Complex problem solving and Design

POCA4a: Identify, formulate, and analyze complex computing problems to arrive at substantiated conclusions using critical thinking along with principles of computing.

POCA4b: Design and develop information technology solutions for complex problems to meet the specified and anticipated needs with appropriate concern for constraints, performance, sustainability, and professional ethics.

POCA4c: Collect, analyse and interpret data to evaluate and improve the information technology solutions and practice.

POCA5: Individual & team work and IT management

POCA5a: Ability to work effectively as an individual and as a team member or leader in diverse and distributed teams, and in multidisciplinary settings.

POCA5b: Ability to apply IT management principles to one's own and team's work to manage information technology based projects and operations and in multidisciplinary environment.

POCA6: Communication: Ability to communicate effectively on information technology related activities, situations, problems, and solutions using verbal, textual, and pictorial elements with the colleagues, computing community, users, clients, policy makers, and society at large with intellectual honesty, clarity, empathy, and compassion.

POCA7: Innovation and entrepreneurship:

POCA7a: Demonstrate enthusiasm and understanding to identify opportunities and translate new developments in information technology and other disciplines to conceive and design innovative IT solutions for business, industry, and societal problems.

POCA7b: Demonstrate enthusiasm and understanding to conceive and plan IT based new ventures either as independent start-up businesses or within existing corporate structures.

Program Specific Outcomes

The BCA graduates of JKLU will be able to:

BCAPSO1: Conceive, design, implement, and manage data management and information processing systems, services and processes by using principles, techniques and practices of computer programming, data management, application development, data analytics, system administration, sustainability and state of the art platforms, components and tools.

BCAPSO2: Serve in ICT areas such as application development, data administration, system administration, data analytics, cyber security, digital media in business, consultancy, industry, government, healthcare, schools, etc., or computer teaching in schools.

Program specific desired minimum level of competence for POs and PSOs

PO/PSO	Competence Level
POCA 1	Advanced Beginner
POCA 2a	Novice
POCA 2b	Novice/Advanced Beginner
POCA 2c	Novice
POCA 3a	Advanced Beginner
POCA 3b	Advanced Beginner
POCA 3c	Advanced Beginner
POCA 4a	Advanced Beginner
POCA 4b	Novice
POCA 4c	Novice
POCA 5a	Advanced Beginner
POCA 5b	Novice
POCA 6	Advanced Beginner
POCA 7a	Novice
POCA 7b	Novice
BCAPSO 1	Advanced Beginner
BCAPSO 2	Advanced Beginner

Following process has been adopted to create Course Articulation Matrix (CAM) and Program Articulation Matrix (PAM).

- Course Outcome of each Course is mapped to Program Outcome (PO) / Program Specific Outcome (PSO) using three Levels viz., Low Correlation (1), Moderate Correlation (2) and Substantial Correlation (3).
- Average of these Levels of each Course Outcome w.r.t each specific PO/PSO is calculated and it indicates expectations laid in a course to attain different PO/PSO. In order to avoid over commitment of a course w.r.t its contribution to POs/PSOs, the following validation check is applied on the sum of PO/PSO wise averages in each course.

$$\sum (Average) <= Min (Credits * Year, 15)$$

In above equation, Credits are the credits assigned to the course, Year indicates the level of the students from 1st to 3rd year. In case this sum exceeds the upper limit, CO-PO mappings are revised. This check ensures that early or low credit courses are not over burdened with very high expectations.

- For creation of Program Articulation Matrix, sum of these averages of different courses w.r.t each PO/PSO is calculated and interpreted as per following Table.

Competence Level *	BCA
Novice	<8
Advanced Beginner	8 - 16
Competent	>=16

Novice* (N): Knows objective facts, features, and rules for determining actions w.r.t. this PO/PSO without being context-sensitive. The student has studied the basic concepts.

Advanced beginner* (AB): Recognizes common situations w.r.t. this PO/PSO that help in recalling which rules should be exercised, starts to recognize and handle situations not covered by given facts, features and rules. The student has problem-solving and repeated practice experience for common situations w.r.t. this PO/PSO.

Competent* (C): Performs most standard actions w.r.t. PO/PSO without conscious application of rules after considering the whole situation. Handles new situations through the appropriate application of rules, can design systems, and may lead. Has demonstrated this PO/PSO through repeated engagements in advanced problem-solving, projects, extensive practice in common and exception situations, and participated in professional networks.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Computer Applications (Batch 2020-2023)

Sem	Courses						Credits
I	Problem Solving with Python CS1115 (3 0 4) 5	Database Management and Applications CS1116 (3 0 4) 5	Computer Organisation and Systems CS1117 (3 0 2) 4	Mathematics AS1104 (3 1 0) 4	Fundamentals of Communication CC1101 (2 0 1) 2		20
II	Java Programming CS1118 (3 0 4) 5	Web Application Development CS1119 (3 0 2) 4	Operating Systems and Linux Administration CS1120 (2 0 4) 4	Computational Mathematics AS1105 (3 0 2) 4	Principles of Management IL1103 (3 0 0) 3	Critical Thinking and Storytelling CC1102 (2 0 1) 2	22
III	C++ Programming and Data Structures CS1122 (3 0 4) 5	Android Application Development CS1123 (3 0 2) 4	Computer Networks and Network Administration CS1124 (2 0 4) 4	Statistical Computing AS1106 (3 0 2) 4	Economics and Accounting IL1104 (3 0 0) 3	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	22
IV	Algorithm Design and Analysis CS1126 (3 0 2) 4	Robotic Process Automation Lab CS1125 (0 0 4) 2	Applied IoT EE1117/ Multimedia Lab (0 0 4) 2	Virtualisation and Cloud computing CS1127 (2 0 4) 4	Communication and Identity CC1104 2	Elective I 4	18
V	BCA Practice School-I (6-8 Weeks Duration) - 4 Credits						19
V	Applied Artificial Intelligence and Machine Learning (3 0 2) 4	Software Quality and Testing/ Information Security (2 0 2) 3	Open-Source Software Deployment/ 3D Design and Animation Lab (0 0 4) 2	Understanding and Managing Conflicts CC1105 2	Elective II 4	Open Elective (3 0 2) 4	19
VI	BCA Practice School-II OR						16
VI	Semester at a partner University abroad or in India OR						16
VI	Project 6	Critical Thinking for Decisions at Workplace CC1106 2	Elective III 4	Elective IV 4			16
	Total Credits						**121**

List of Electives	
Sem IV	
Elective I	
Functional Electronics	
Cyber Security-EE1219	

- For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
- Upto 6 courses can be replaced by appropriate Curated MOOCs with prior permission. For example, students with very strong mathematics background in 12th class can replace the Ist semester mathematics course by an appropriate advanced mathematics MOOC.
- Optional Concentrations: (1) Data Analytics, (2) Cloud Computing and Cyber Security, (3) Robotic Process Automation. Students will have to complete 2 electives and project/PS-II (total 14+ credits) in the chosen field.

JK Lakshmipat University, Jaipur
Institute of Engineering and Technology
Curriculum Structure
Bachelor of Computer Applications (Batch 2021-2024)

Sem	Courses						Credits
I	Problem Solving with Python CS1115 (3 0 4) 5	Database Management and Applications CS1116 (3 0 4) 5	Computer Organisation and Systems CS1117 (3 0 2) 4	Mathematics AS1104 (3 1 0) 4	Fundamentals of Communication CC1101 (2 0 1) 2		**20**
II	Java Programming CS1118 (3 0 4) 5	Web Application Development CS1119 (3 0 2) 4	Operating Systems and Linux Administration CS1120 (2 0 4) 4	Computational Mathematics AS1105 (3 0 2) 4	Principles of Management IL1103 (3 0 0) 3	Critical Thinking and Storytelling CC1102 (2 0 1) 2	**22**
III	C++ Programming and Data Structures CS1122 (3 0 4) 5	Android Application Development CS1123 (3 0 2) 4	Computer Networks and Network Administration CS1124 (2 0 4) 4	Statistical Computing AS1106 (3 0 2) 4	Economics and Accounting IL1104 (3 0 0) 3	Perspectives on Contemporary Issues CC1103 (2 0 1) 2	**22**
IV	Algorithm Design and Analysis CS1126 (3 0 2) 4	Robotic Process Automation Lab CS1125 (0 0 4) 2	Applied IoT-EE1117/ Multimedia Lab (0 0 4) 2	Virtualisation and Cloud computing CS1127 (2 0 4) 4	Communication and Identity CC1104 2	Elective I 4	**18**
V	BCA Practice School-I (6-8 Weeks Duration) - 4 Credits						**19**
	Applied Artificial Intelligence and Machine Learning (3 0 2) 4	Software Quality and Testing/ Information Security (2 0 2) 3	Open-Source Software Deployment/ 3D Design and Animation Lab (0 0 4) 2	Understanding and Managing Conflicts CC1105 2	Elective II 4	Open Elective (3 0 2) 4	
VI	BCA Practice School-II OR						**16**
	Semester at a partner University abroad or in India OR						
	Project 6	Critical Thinking for Decisions at Workplace CC1106 2	Elective III 4	Elective IV 4			
Total Credits							**121**

List of Electives	
Sem IV	
Elective I (Tentative)	
Functional Electronics	
Cyber Security-EE1219	

- For every credit, in each course, every student is expected to put in a total work of 35-36 hours including the class time. The specified teaching scheme is applicable if the course is taught as full semester course. However, sometimes, a few courses may actually be completed in a shorter duration by increasing the weekly contact hours.
- Upto 6 courses can be replaced by appropriate Curated MOOCs with prior permission. For example, students with very strong mathematics background in 12th class can replace the Ist semester mathematics course by an appropriate advanced mathematics MOOC.
- Optional Concentrations: (1) Data Analytics, (2) Cloud Computing and Cyber Security, (3) Robotic Process Automation. Students will have to complete 2 electives and project/PS-II (total 14+ credits) in the chosen field.

List of possible evaluation components

Prerequisites	
Teaching Scheme (Hours per Week)	L T P
Credits	
Sr. No.	**Evaluation Component**	**Marks**

Sr. No.	Evaluation Component	Marks
1	Attendance	
2	Assignment	
3	Class Participation	
4	Quiz	
5	Theory Exam-I	
6	Theory Exam-II	
7	Theory Exam-III	
8	Report-I	
9	Report-II	
10	Report-III	
11	Project-I	
12	Project-II	
13	Project-III	
14	Lab Evaluation-I	
15	Lab Evaluation-II	
16	Course Portfolio	
17	Presentation	
18	Viva	
	Total (100)	

- As per the requirement of the course, faculty members have the option to choose any subset of evaluation components from the above list.

List of Handbooks of curriculum structure and syllabus

1.	Bachelor of Technology in Mechanical Engineering (Batch 2018-2022)
2.	Bachelor of Technology in Electrical and Electronics Engineering (Batch 2018-2022)
3.	Bachelor of Technology in Computer Science and Engineering (Batch 2018-2022)
4.	Bachelor of Technology in Civil Engineering (Batch 2019-2023)
5.	Bachelor of Technology in Mechanical Engineering (Batch 2019-2023)
6.	Bachelor of Technology in Electrical and Electronics Engineering (Batch 2019-2023)
7.	Bachelor of Technology in Computer Science and Engineering (Batch 2019-2023)
8.	Bachelor of Technology in Mechanical Engineering (Batch 2020-2024)
9.	Bachelor of Technology in Electronics and Communication Engineering (Batch 2020-2024)
10.	Bachelor of Technology in Computer Science and Engineering (Batch 2020-2024)
11.	Bachelor of Technology in Computer Science and Engineering (Batch 2021-2025)
12.	Master of Technology in Data Science (Batch 2020-2022)
13.	Master of Technology in Health, Safety, and Environmental Engineering (Batch 2020-2022)
14.	Master of Technology in Health, Safety, and Environmental Engineering (Batch 2021-2023)
15.	Master of Technology in Automation and Robotics (Batch 2020-2022)
16.	Master of Technology in Automation and Robotics (Batch 2021-2023)
17.	Bachelor of Computer Applications (Batch 2020-2023)
18.	Bachelor of Computer Applications (Batch 2021-2024)