

## Department of Civil Engineering

### Course Curriculum

The program curriculum as prescribed by the affiliating university Dr. A. P. J. Abdul Kalam Technical University (AKTU), Lucknow is followed by the Institutes. The course curriculum of B.Tech. (Computer Science & Engineering) for academic year 2020-21 is listed below

Sr. no	Course code	Course Title	Lecture(L)	Tutorial(T)	Practical(P)	Credits
<b>Semester I</b>						
1	RAS 103	Engineering Maths-I	3	1	0	4
2	RAS 101	Engineering Physics-I	3	1	0	4
3	REE 101/RME 101	Basic Electrical Engg/ Elements of Mechanical Engg	3	1	0	4
4	RAS 104/ RCS101	Professional Communication/ Computer System & Programming in	3	0	0	3
5	REC101/ RAS102	Basic Electronics/ Engineering Chemistry	3	1	0	4
6	RAS151/ RAS152	Engg. Physics Lab/ Engg. Chemistry Lab	0	0	2	1
7	REE151/ RME151	Basic Electrical Engg Lab/ Elements of Mechanical Engg Lab	0	0	2	1
8	RAS 154/ RCS151	Professional Communication Lab/ Computer Prog. Lab	0	0	2	1
9	RME152/ RCE151	Workshop Practice/ Computer Aided Engg. Graphics	0	0	3	2
<b>SEMESTER II</b>						

10	RAS203	Engineering Maths-II	3	1	0	4
11	RAS201	Engineering Physics-II	3	1	0	4
12	RME201/ REE201	Elements of Mechanical Engg/ Basic Electrical Engg	3	1	0	4
13	RCS201/ RAS 204	Computer System & Programming in C/ Professional Communication	3	0	0	3
14	RAS202/ REC201	Engineering Chemistry/ Basic Electronics	3	1	0	4
15	RAS252/ RAS251	Engg. Chemistry Lab/ Engg. Physics Lab	0	0	2	1
16	RME251/ REE251	Elements of Mechanical Engg Lab/ Basic Electrical Engg Lab	0	0	2	1
17	RCS251/ RAS 254	Computer Progm. Lab/ Professional Communication Lab	0	0	2	1
18	RCE251/ RME252	Computer Aided Engg. Graphics/ Workshop Practice	0	0	3	2

Sources:

<https://aktu.ac.in/pdf/syllabus/corrections/B.%20Tech.%20All%20Branch%20%20Ist%20Scheme.pdf>

Semester III						
19	KOE031- 38/KAS303	Engineering Science Course/Maths III	3	1	0	4
20	KAS301/ KVE301	Technical Communication/ Universal Human Values	2	1	0	3

21	KCE301	Engg. Mechanics	3	1	0	4
22	KCE302	Surveying and Geomatics	3	1	0	4
23	KCE303	Fluid Mechanics	3	0	0	3
24	KCE351	Building Planning & Drawing Lab	0	0	2	1
25	KCE352	Surveying and Geomatics Lab	0	0	2	1
26	KCE353	Fluid Mechanics Lab	0	0	2	1
27	KCE354	Mini Project or Internship Assessment*	0	0	2	1
28	KNC301/ KNC302	Computer System Security/ Python Programming	2	0	2	0

**SEMESTER IV**

29	KAS403/ KOE041- 48	Maths III/ Engg. Science Course	3	1	0	4
30	KVE401/ KAS401	Universal Human Values/Technical Communication	3	0	0	3
31	KCE401	Materials, Testing & Construction Practices	3	0	0	3
32	KCE402	Introduction to Solid Mechanics	3	1	0	4
33	KCE403	Hydraulic Engineering and Machines	3	1	0	4
34	KCE451	Material Testing Lab	0	0	2	1
35	KCE452	Solid Mechanics Lab	0	0	2	1
36	KCE453	Hydraulics & Hydraulic Machine Lab	0	0	2	1
37	KNC402/ KNC401	Python Programming/Computer System Security	2	0	0	0

Sources:

<https://aktu.ac.in/pdf/syllabus/syllabus1920/B.Tech.%202nd%20Year%20Civil%20Engg%20AIC>

**SEMESTER V**

38	KCE 501	Geotechnical Engineering	3	1	0	4
39	KCE 502	Structural Analysis	3	1	0	4
40	KCE 503	Quantity Estimation and Construction Management	3	1	0	4
41		Departmental Elective-I	3	0	0	3
42		Departmental Elective-II	3	0	0	3
43	KCE-551	CAD Lab	0	0	2	1
44	KCE-552	Geotechnical Engineering Lab	0	0	2	1
45	KCE-553	Quantity Estimation and Management Lab	0	0	2	1
46	KCE-554	Mini Project or Internship Assessment*	0	0	2	1
47	KNC501/ KNC502	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	0

**SEMESTER VI**

48	KCE 601	Design of Concrete Structures	3	1	0	4
49	KCE 602	Transportation Engineering	3	1	0	4
50	KCE 603	Environmental Engineering	3	1	0	4
51		Departmental Elective-III	3	0	0	3
52		Open Elective-I	3	0	0	3
53	KCE 651	Transportation Engineering Lab	0	0	2	1
54	KCE 652	Environmental Engineering Lab	0	0	2	1

55	KCE 653	Structural Detailing Lab	0	0	2	1
56	KNC601/ KNC602	Constitution of India, Law and Engineering / Indian Tradition, Culture and Society	2	0	0	2

Sources:

[https://aktu.ac.in/pdf/syllabus/syllabus2021/B.Tech\\_CE%20Civil%20Syllabus%20of%203rd%20Year5%20](https://aktu.ac.in/pdf/syllabus/syllabus2021/B.Tech_CE%20Civil%20Syllabus%20of%203rd%20Year5%20)

#### SEMESTER VII

57		Open Elective Course-1	3	0	0	3
58		Elective -3	3	0	0	3
59		Elective -4	3	0	0	4
60	RCE701	Design of Structure-III	3	1	0	4
61	RCE702	Water Resources	3	0	0	3
62	RCE751	Non Destructive Testing Laboratory	0	0	2	1
63	RCE752	Mini Project	0	0	2	1
64	RCE753	Industrial Training	0	0	3	2
65	RCE754	Project-1	0	0	6	3

#### SEMESTER VIII

66		Open Elective Course -2	3	0	0	3
67		Elective -5	3	1	0	4
68		Elective -6	3	0	0	3
69	RCE851	Seminar	0	0	3	2
70	RCE852	Project-2	0	0	12	12

Sources:

<https://aktu.ac.in/pdf/syllabus/syllabus1920/B.Tech.%204th%20Year%20Civil%20Engg%20CBCS%202019>

#### DEPARTMENTAL ELECTIVES

##### Departmental Elective-I

KCE 051	Concrete Technology
KCE 052	Modern Construction Materials
KCE 053	Open Channel Flow

KCE 054	Engineering Geology
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**Departmental Elective-II**

KCE-055	Engineering Hydrology
KCE-056	Sensor and Instrumentation Technologies for Civil Engineering Applications
KCE-057	Air and Noise Pollution Control
KCE-058	GIS and Advance Remote Sensing

**Departmental Elective-III**

KCE 061	Advance Structural Analysis
KCE 062	River Engineering
KCE 063	Repair and Rehabilitation of Structures
KCE 064	Foundation Design

**Elective 3**

RCE 071	Geology and soil mechanics
RCE 072	Rural development engineering
RCE 073	Structural Health Monitoring & Rehabilitation
RCE 074	River Engineering

**Elective 4**

RCE 075	Computational Fluid Dynamics
RCE 076	Railways, Airport & Water Ways

RCE 077	Air & Noise Pollution Control
RCE 078	Ground Improvement Techniques

**Elective 5**

RCE 081	Finite Element Method
RCE 082	Structural Dynamics
RCE 083	Advanced Concrete Design
RCE 084	Solid Waste Management

**Elective 6**

RCE 085	Engineering Hydrology and Ground Water Management
RCE 086	Urban Transportation System & Planning
RCE 087	Probability Methods in Civil Engineering
RCE 088	Earthquake Resistant Design of Structure

Sem	Departmental Elective	Name of Elective through NPTEL
VII	5	RCE082 Structural Dynamics
	6	RCE087 Probability Methods in Civil Engineering

**Open Electives I**

**S no    Subject code                      Name of Electives**

- |           |   |
|-----------|---|
| 1 ROE 071 | Modelling and Simulation of Dynamic Systems |
| 2 ROE 072 | Introduction to Smart Grid                  |
| 3 ROE 073 | Cloud computing                             |

- |           |   |
|-----------|---|
| 4 ROE 074 | Understanding the human being<br>Comprehensively<br>Human Aspiration<br>audits fulfilment |
|-----------|---|
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**Open Electives II**

- |           |   |
|-----------|---|
| 1 ROE 081 | Digital and Social Media Marketing  |
| 2 ROE 082 | Entrepreneurship Development  |
| 3 ROE 083 | Machine Learning  |
| 4 ROE 084 | Micro and Smart Systems   |
| 5 ROE 085 | Operations Research   |
| 6 ROE 086 | Renewable Energy Resources<br>*Human Values in Madhyasth                          |
| 7 ROE 087 | Darshan<br>*Values, Relationship & Ethical Human Conduct-For a Happy & Harmonious |
| 8 ROE 088 | Society   |



NPTEL Course (MOOCS Courses Hons. Degree):The student shall be awarded Hons. Degree (on success secures 7.50 or above CGPA and passed each subject of that Degree Programme in single attempt cleared during the B. Tech degree program. After successful completion of these Moocs courses NPTEL status/certificates to the University (COE) through their college of study. 1

- 1 Algorithms for Big Data  
C Programming and
- 2 Assembly Language  
Concepts of
- 3 Thermodynamics  
Data Analytics with
- 4 Python  
Data Science for
- 5 Engineers  
Design Analysis and
- 6 Algorithm  
Design of Reinforced
- 7 Concrete Structures  
Developing Soft Skills
- 8 and Personality
  
- 9 Emotional Intelligence

Enhancing Soft Skills and  
10 Personality

Fundamental of Welding  
11 Science and Technology

Fundamentals of  
Conduction And

12 Radiation

Google Cloud

Computing Foundation

13 Course

Introduction To Block  
chain Technology And

14 Applications

Introduction To Industry

4.0 And Industrial

15 Internet Of Things

.Introduction To

16 Internet Of Things

17 Introduction To Robotics

Introduction To

Embedded System

18 Design

Manufacturing Process

19 Technology I & II

Matlab Programming

For Numerical

20 Computation

21 Mechanics of Materials

.Patent Law for

22 Engineers and Scientist

23 Speaking Effectively

24 Structural Analysis







[CTE%20Model%20Curriculum%202019-20.pdf](#)

[April%202021.pdf](#)

[\)-20.pdf](#)









Successful completion of MOOCs based 20 credit) if he/she  
it without any grace marks. These NPTEL courses may be  
the students, shall, provide their successful completion  
The list of courses offered by University: