



Nawab Shah Alam Khan

COLLEGE OF ENGINEERING & TECHNOLOGY

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Program Curriculum

The process used to identify extent of compliance of the University curriculum for attaining the Program Outcomes and Program

Specific Outcomes as mentioned in Annexure I. Also mention the identified curricular gaps.

NAWAB SHAH ALAM KHAN COLLEGE OF ENGINEERING AND TECHNOLOGY is affiliated to Osmania University, Hyderabad from Academic Year 2019-2020 onwards and prior to that our institution was affiliated to Jawahar Lal technological University, Hyderabad. The curriculum is designed by affiliated university. The university curriculum has a composition of Basic Sciences, Humanities & social Sciences, Engineering Sciences, Professional core, Professional Electives, Open Electives, Project work Industrial training and Seminar.

Curriculum fulfillment is an organized analysis of the curriculum prescribed by the University to identify the degree of proficiency and content of the syllabi for the achievement of program Outcomes and program specific outcomes.

In this view, the Departmental Advisory Committee (DAC) is made. The Departmental Advisory Committee undertakes a study to determine whether the syllabi and its contents provide the opportunity to the students to gain appropriate knowledge, skills and attitude. This process helps to identify the gap between university curriculum and Program Outcomes. Relevant courses are collected based on its contents and grouped them as modules. Curriculum compliance is verified by organizing the information into a matrix (Course-PO matrix) which maps each one to the other. Mapping involves making collective judgments, by Departmental Advisory Committee, about the link between the Course Outcomes (COs) and the program outcomes (POs). The same process is extended to course-PSOs matrix. Curricular Gaps are also identified by mapping.

A. Process used to identify extent of compliance of university curriculum for attaining POs & PSOs

Process:

- The mapping of COs to POs and PSOs which in turn computes the average POs and PSOs correlation for each course, is prepared by the faculty members and verified by the Program Assessment Committee.
- Based on the suggestions provided by the faculty members and Program assessment committee on curricular gap of courses, the Departmental Advisory Committee evaluates the improvement in the attainment of POs and PSOs, considering PEOs, Vision and Mission statements.
- The delivery plan is prepared for the course related curricular gap and seminars/workshops are planned by the department.
- Average correlation of Program Outcome attainments Academic Years of each subject has been calculated carefully and presented in criterion 3. Based on the Program Outcome attainment values the curricular gaps are identified.

B. Program Outcome:

List of POs

PO1	<u>Engineering knowledge:</u> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	<u>Problem analysis:</u> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	<u>Design/development of solutions:</u> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	<u>Conduct investigations of complex problems:</u> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	<u>Modern tool usage:</u> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	<u>The Engineer and society:</u> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	<u>Environment and sustainability:</u> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	<u>Ethics:</u> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO9	<u>Individual and team work:</u> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	<u>Communication:</u> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	<u>Project management and finance:</u> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	<u>Life-long learning:</u> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

C. Program Specific Outcomes (PSO):

PSO1: To plan the building and perform analysis, design, estimation and execute all kinds of civil Engineering Projects.

PSO2: To adopt new innovative technology and use modern techniques, so as to execute the project within the stipulated time.



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Process used to identify the curricular Gaps:

Step 1: The faculty members will study the curriculum given by the University for the respective subject allotted to them. Step 2: By analyzing the contents of the course, the faculty members prepare the four outcomes of the course.

Step 3: Course outcomes are mapped with program outcomes (POs) and Program Specific outcomes (PSOs)

Step 4: Program assessment committee collects the data from faculty members and approves the proposed mapping.

Step 5: The mapping of the course's verses PO/PSO is consolidated by the program assessment committee.

Step 6: By collecting information in the form of Alumni Survey, industrial experts survey, program assessment committee analyze the information along with the consolidated PO/PSO mapping and identifies the gap in the curriculum.

Step 7: The identified gaps are communicated to the department advisory committee for review. Step 8: After review, the committee finalizes the curriculum gap.



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The following flowcharts represent the process followed.

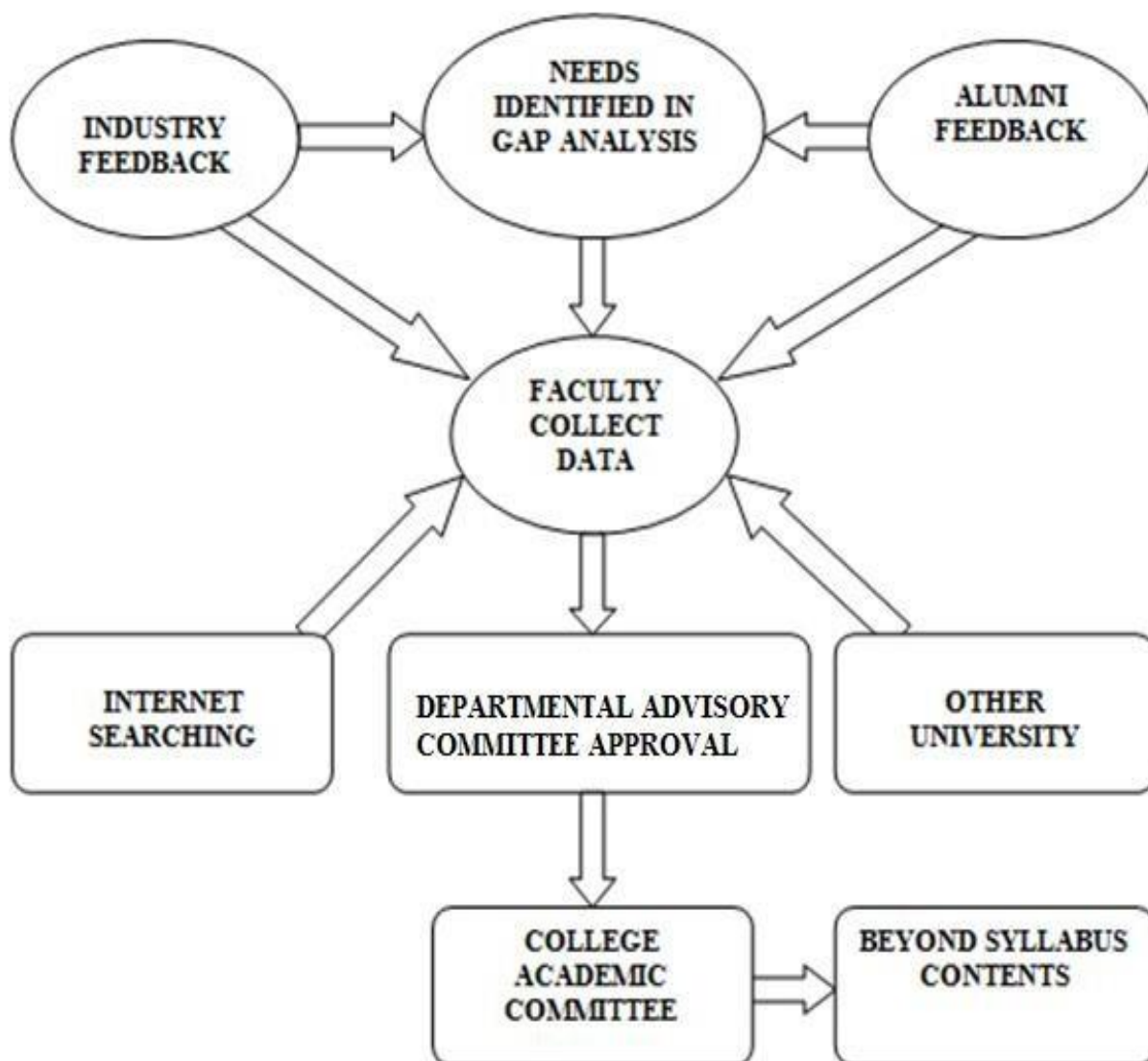


Figure : Process used to identify the curricular Gaps.



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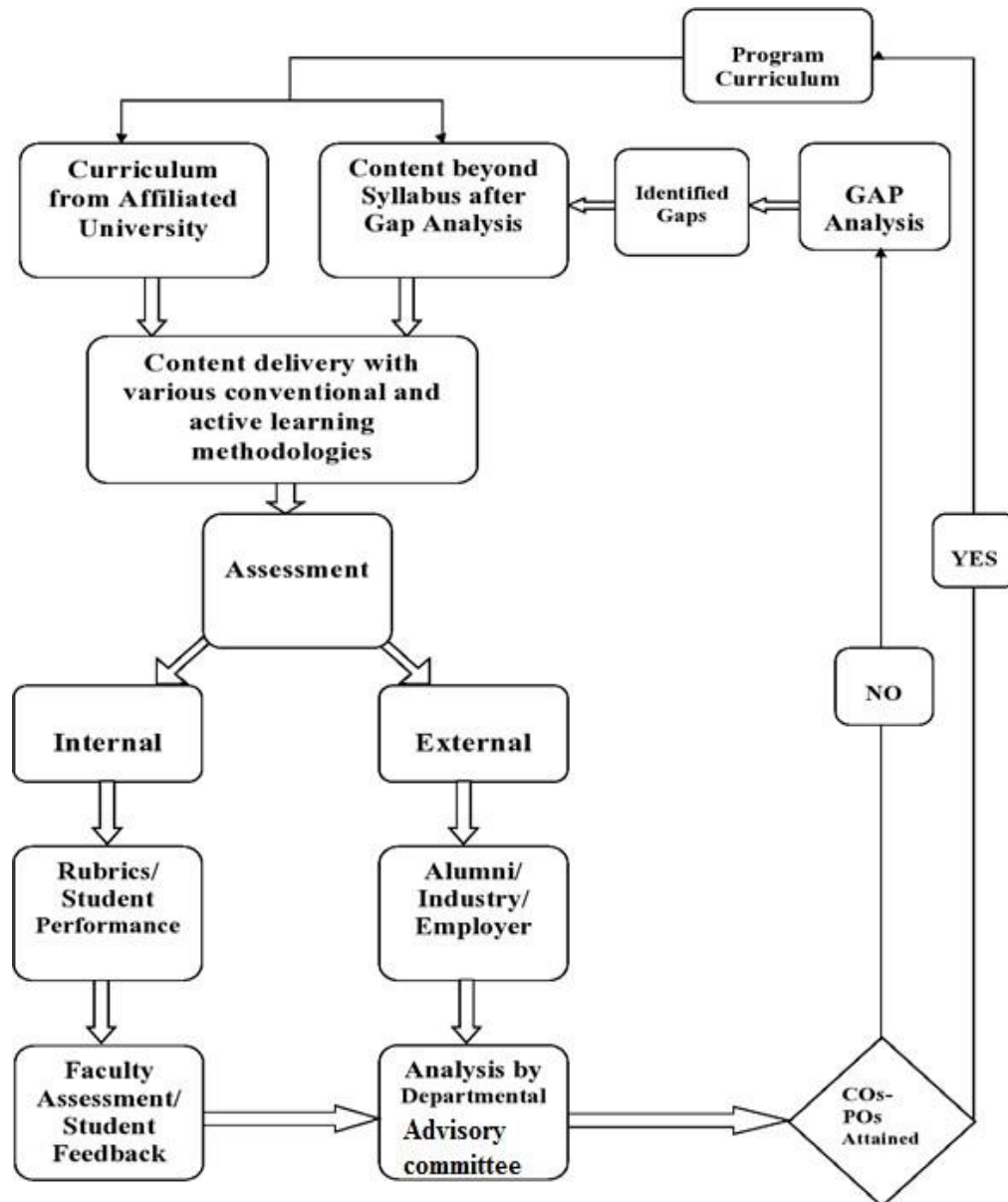


Figure : Process of assessment of Gap Analysis



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Some of the GAPS identified are as follows:

List of Curricular Gaps for 2020-2021 (CAY)

S. No	Course Name	Title Of the Topic
1.	Computer aided drafting lab	Analysis and design of buildings using STAAD Pro software.
2.	Elements of earthquake engineering	Basics Of Earthquake and Earthquake Resistant Design.
3.	Design of steel structures	Pre-engineered buildings (PEB).
4.	Career guidance	Career Guidance and Counselling
5.	Career guidance	International careers
6.	Career guidance	Let's crack the GATE

List of Curricular Gaps for 2019-2020 (CAYm1)

S. No	Course Name	Title Of the Topic
1.	Soil mechanics	Soil nailing
2.	Rehabilitation and repair of structures	Failure of Concrete Structures
3.	Computer aided drafting lab	Building information Modelling
4.	Advance English communication skills lab	Soft skills development
5.	Advance English communication skills lab	Higher Education Opportunities & Skills for the Future Jobs



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List of Curricular Gaps for 2018-2019 (CAYm2)

S. No	Course Name	Title Of the Topic
1.	Disaster management	Urban flood analysis
2.	Design of steel structures	Design Of Steel towers
3.	Computer aided drafting	Building information modelling & sustainability
4.	Concrete technology	Quality control & non-destructive test applications
5.	Concrete technology	Nano Structures of Concrete
6.	Information technology & artificial intelligence	Potential of Artificial Intelligence
7.	Career guidance	Career Guidance and Counselling

List of Curricular Gaps for 2017-2018 (CAYm3)

S. No	Course Name	Title Of the Topic
1.	Water resource engineering	Innovative ways Of Water Conservation
2.	Elements of earthquake engineering	Basics Of Earthquake and Earthquake Resistant Design
3.	Computer aided drafting	Analysis and Design of Building Structures
4.	Ground improvement techniques	Intensification of black cotton soil
5.	Reinforced concrete structures design and drawing	Design of water tank
6.	Repair and rehabilitation of structures	Repair Rehab and Retrofitting of Structures by using Fenugreek Powder



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The delivery details of the content beyond the syllabus for the attainment of POs and PSOs

Delivery Details of Content Beyond Syllabus

The following are the means and methods used to achieve the extent of fulfilment of the University curriculum & content beyond syllabus for attaining the Program Outcomes, Program Specific Outcome.

- **Lecturing**
- **Seminar**
- **Guest lectures**
- **Workshops**
- **Industrial Visits and internships**

Delivery Details of Content beyond syllabus 2020-2021(CAY)

S.N O	Gap(title of the Topic)	Action Taken	Date- Month- Year	Resource Person with Designation	% of Stud ents	Relevance to PO's, PSO's
1	Basics Of Earthquake and Earthquake Resistant Design.	Lecture	05-02-2021	Prof. Syed Farrukh Anwar VP(Ad),Professor, CEDNSAKCET	86	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO12,
2	Pre-engineered buildings (PEB).	Lecture	08-02-2021	Prof. Syed Farrukh Anwar VP(Ad),Professor, CEDNSAKCET	88	PO1,PO2,PO3, PO4,PO5,PO7, PO8, PO9,PO12, PSO1,PSO2
3	Analysis and design of buildings using STAAD Pro software.	Seminar	30-07-2021	Mr. Imtiyaz Qureshi Assistant Professor , CED, NSAKCET	90	PO1,PO2,PO3, PO4,PO5,PO7, PO8, PO9,PO11,PO12, PSO1,PSO2
4	Career Guidance and Counselling	Seminar	14-08-2021	Mr. Mohd Ismail Associate Professor , CED, NSAKCET	86	PO9,PO10,PO11, PO12
5	International careers	Seminar	14-08-2021	Mr. Mohd Yousuf Assistant Professor , CED, NSAKCET	84	PO9,PO10,PO11, PO12

Delivery Details of Content beyond syllabus for 2019-2020 (CAYm1)

S.N O	Gap(title of the Topic)	Action Taken	Date- Month- Year	Resource Person with Designation	% of Studen ts	Relevance to PO's, PSO's
1.	Industrial Visit to Multiple Arch Dam	Industrial visit	27-7-2019	Multiple Arch Dam , Mir Alam Tank, Hyderabad	85	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
2.	Industrial Visit to Sewage Treatment Plant	Industrial visit	27-7-2019	GHMC , Hyderabad	80	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
3.	Soft Skills Development	Lecture	24-07-2019	Dr. Mohd Mohiuddin Hussain , Professor, H& BS, NSAKCET	85%	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2
4.	Industrial Visit to Gandipet reservoir	Industrial visit	03-08-2019	HMWSSB , Hyderabad	86	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
5.	Repair Rehab & Retrofitting (Makkah Masjid)	Industrial visit	22-08-2019	Superintendent , Makkah Masjid, Hyderabad	90	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
6.	Land Management and Conversation of Water	Industrial Visit	21-09-2019	Director Generel , WALAMTARI, Himayat Sagar, Hyderabad	92	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
7.	Industrial Visit to TSERL	Industrial visit	21-09-2019	TSERL , Hyderabad	85	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2

8.	Industrial Visit to Nagarjuna sagar	Industrial visit	05-11-2019	TSGENCO, Hyderabad	80	PO1, PO2, PO3, PO4, PO6, PO7, PO8, PO10, PO11, PO12 PSO1, PSO2
9.	Soil Nailing	Lecture	30-04-2020	Mr, Md Ameer Khusro, Assistant Professor, CED, NSAKCET	80%	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10,PO11, PO12 PSO1,PSO2
10.	TechnoVision - 2020	Industrial Fest	04-02-2020	NSAKCET Campus	100	PO1, PO2, PO4, PO5, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2
11.	Building Information Modelling	Guest Lecture	14-02-2020	Dr. Mazharuddin Syed Ahmed, Technology Evangelist Ara Institute Of Canterbury, New Zealand	80%	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10,PO11, PO12 PSO1,PSO2
12.	Higher Education Opportunities & Skills for the future jobs	Lecture	14-02-2020	Dr. Mazharuddin Syed Ahmed, Technology Evangelist Ara Institute Of Canterbury, New Zealand	82%	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10,PO11, PO12 PSO1,PSO2
13.	Failures of Concrete Structures.	Webinar	26-06-2020	Dr. N.V. Ramana Rao Director, NIT Warangal	82%	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10,PO12 PSO1,PSO2



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Delivery Details of Content beyond syllabus for 2018-2019 (CAYm2)

S. N O	Gap(title of the Topic)	Action Taken	Date-Month-Year	Resource Person with Designation	% of Students	Relevance to PO's, PSO's
1	Urban flood Analysis	Workshop	10-09-2018	Dr.K.M. Lakhmana Rao Professor, JNTUH	96	PO1,PO2,PO3, PO5,PO6,PO8, PO11,PO12, PSO1,PSO2
2	Design of Steel Towers	Workshop	11-09-2018	Mr. S. Sunhash Babu Joint Chief Engineer BSNL	96	PO1,PO2,PO3, PO4,PO5,PO6, PO9,PO12,PSO1, PSO2
3	Building Information Modelling & Sustainability	Workshop	11-09-2018	Dr. Syed Mazharuddin Technology Evangelist	96	PO1,PO2,PO3, PO4,PO5,PO6,PO9,PO12,PSO1, PSO2
4	Potential of Artificial Intelligence	Workshop	11-09-2018	Dr. R. Ramesh Reddy , Professor, CED, NSAKCET	96	PO1,PO2,PO3, PO4,PO5,PO6,PO9,PO12,PSO1, PSO2
5	Career Guidance and counselling	Workshop	11-09-2018	Mr. Md. Ismail , Associate Professor, CED, NSAKCET	96	PO1,PO2,PO3, PO4,PO5,PO6,PO7,PO8,PO9, PO10,PO11, PO12 PSO1,PSO2
6	Nano structure of concrete	Lecture	19-03-2019	Mr. Mohd Zaker Assistant Professor, CED, NSAKCET	90	PO1,PO2,PO3, PO4,PO5,PO6,PO9,PO11,PSO1, PSO2
7	Quality Control & NDT Applications	Guest Lecturer	18-04-2019	Dr. V. Bhikshama Professor, Osmania University	92	PO1,PO2,PO3, PO4,PO5,PO6,PO9,PO11,PSO2



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Delivery Details of Content beyond syllabus for 2017-2018 (CAYm3)

S.N O	Gap(title of the Topic)	Action Taken	Date- Month- Year	Resource Person with Designation	% of Stud ents	Relevance to PO's, PSO's
1.	Innovative Water Conservation Practice	Guest Lectur e	21-09- 2017	Dr.G.K Viswanadh Professor , JNTUH	89	PO1,PO2,PO3,P O6,PO7,PO8,PO 9,PO10,PO11,P O12,PSO1,PSO2
2	Design Of water Tank	Lectur e	06-10- 2017	Md.Mubasheer Shahzeb Assistant Professor,CED, NSAKCET	82	PO1,PO2,PO3,P O4,PO5,PO9,PO 10,PO11,PSO1,P SO,2
3	Intensification of Black Cotton Soil Proerties	Lectur e	16-10- 2017	Mr. Syed Amjad Assistant Professor, CED, NSAKCET	87	PO1,PO2,PO3,P O4,PO5,,PO9,P O10,PO11,PSO1 ,PSO,2
4	Analysis & Design of Building Using Staad Pro Software	Semin ar	02-04- 2018	Md.Imtiyaz qureshi Assistant Professor, CED, NSAKCET	85	PO1,PO2,PO3,P O4,PO5,PO6,PO 9,PO10,PO11,PS O1,PSO2
5	Introduction to Engineering Seismology	Lectur e	06-03- 2018	Dr. A.K Asthana Professor, CED,NSAKCET	87	PO1,PO4,PO5,P O7,PO8,PO9,PO 12,PSO1.
6	Tech Fest 2K18	Techic al fest	28-02- 2018	NSAKCET Campus	-	PO1, PO2, PO4, PO5, PO5, PO6, PO7, PO8, PO9, PO10, PO11, PO12 PSO1, PSO2
7	Repair and Rehabilitation of structures	Lectur e	24-03- 2018	Dr. R. Ramesh Reddy, Professor , CED, NSAKCET	90	PO1,PO2,PO3, PO4,PO5,PO6, PO7,PO8,PO9, PO10,PO12 PSO1,PSO2