

NALLA MALLA REDDY ENGINEERING COLLEGE

Autonomous institution

Accredited by NAAC with 'A' Grade, NBA Accredited B.Tech Programs

The Teaching Learning Center (TLC), NMREC

Annual report 2020-'21

I. Name of the institution: Nalla Malla Reddy Engineering College,

II. Name and status of the TLC :

The centre is called 'Center for faculty development and Management (CFDM). It has a separate functional area in the third floor of the college main building.

III. Date or year of establishment:

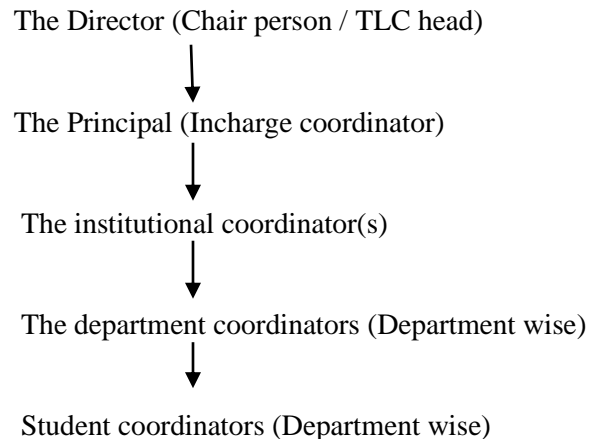
The center is established way back in the year 2007.

IV. Mission statement and mandate of the center:

Mission : To bring in a much needed transformation in teaching /learning strategies, by imparting quality education to the students by adapting a holistic, student centric and multi disciplinary approach and by training the faculty in contemporary teaching pedagogies, outcome based education, and evidence based methodologies.

Mandate: To work as an autonomous and participating body to oversee the 'quality' journey in teaching/learning pedagogies with an active involvement of all the stake holders, viz. students, teachers, parents, management, industry and neighboring community.

V. Organizational structure of the center



VI. Training and development activities conducted in 2020-21.

Under the aegis of the TLC, various faculty development programs, workshops, seminars, guest lectures etc. were conducted by different departments during 2020-21. The following section highlights these programs.

1. Two week FDP on ***“Emerging Threats and Counter Measures in Information Security ”*** was organised by the department of Computer Science & Engineering, sponsored by AICTE. The FDP was conducted for two weeks, from 10th February to 15th February 2020. This faculty development program was aimed at training the faculty in topics related to Information Security and its Emerging Threats and Countermeasures. Dr.Divya Nalla was the coordinator for the FDP.



2. A 2-Day FDP on ***CAD-modelling techniques using CATIA V5*** was organised on 5th and 6th of March 2020. This FDP focussed on the implementation of solid modeling and also on the hands-on experience with the real world projects. This course is structured in a pedagogical sequence to cover the topics of part design, assembly, drafting, wireframe & surface, and generative sheet metal design workbenches of CATIA V5. The resource person was MR. V.L.Krishna Kanth, Application engineer from EDS technologies , Bangalore.



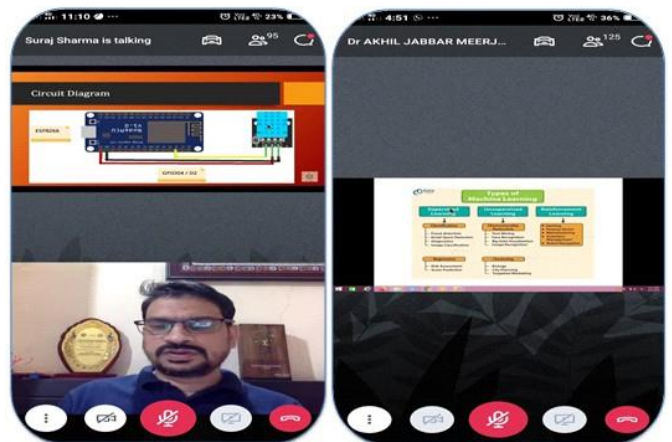
3. A National level workshop on “MATLAB and IOT Approach On Power Electronic Applications In Renewable Energy Systems” was conducted by Department of Electrical and Electronic Engineering from Feb 27th to Feb 29th 2020 with Dr.Naga Raja Kumari, Assoc. Prof. as Convener & Dr.N.Lavanya, Assoc.Prof and Ms.R.Mega Rani, Asst.Prof as Co-Conveners.

4. FDP on Emerging Power Conversion Techniques and Challenges in Renewable Energy was conducted by the dept. of Electrical and Electronics engineering from 2nd to 6th June 2020. This FDP mainly focussed on the harnessing of renewable energy resources, the possible challenges and the strategies to overcome them.The FDP also highlighted the advancements in the power conversion techniques. Eminent resource persons, Dr.G.Srinivasa Rao-CMR college of Engg, Dr. Ranjeeta Patel - KIIT Odisha, Dr. T.Bharath Kumar - Post Doctoral fellow IIT Kanpur, S.YuvaRaja - JSK Instrumental Lab, and Dr. M.Santosh Kumar - TCS, shared their knowledge and experience with the participants.



5. One week online FDP on “Recent Trends in Computing” :The department of Computer Science and Engineering organized a One Week Online FDP on Recent Trends in Computing from 5th June to 10th June 2020.

Dr.M.A. Jabbar , Professor, Dept. of computer Science and Engg, Vardhaman College of Engineering (AI & ML) and Dr.Suraj Sharma, Assistant Prof.,Dept. of Computer Science, IIT-Bhubaneswar, Orissa (Importance of Cloud in IoT) were the keynote speakers .



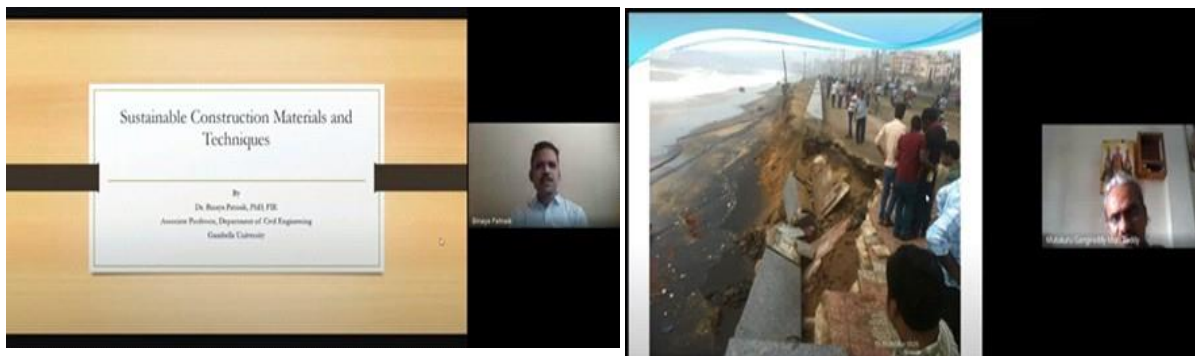
6. **FDP on advanced engineering materials and additive manufacturing** was conducted from 12-06-2020 to 16-06-2020 by the department of Mechanical Engineering. This FDP covered recent trends and research undertaken in topics such as Machining, Fiber Reinforced Polymer Composites, Additive Manufacturing and Applications, 3D Printing, Metal Matrix Composites and Tribology and Friction. Dr. Venkat Prasat was the convener for this program.

7. **Workshop on latest trends in IOT and Robotics** was conducted by the department of Electronics and Communication engineering from 6th to 10th May 2021 for the faculty of the college across all branches.

The workshop introduced the basic concepts and latest trends in IoT and Robotics to the faculty focusing on future interdisciplinary projects.

8. **A seminar on National Institutional Ranking Framework (NIRF)** was conducted by the department of Electrical and Electronics engineering on 12th May 2021. Dr. Satyabrata Sahoo, was the resource person for the session. The speaker dwelled upon all the contributing factors and also the criterion to be met with for a better NIRF ranking. It has given the faculty an insight into the weightage of each of the factors contributing for a better ranking. All the faculty have understood the nuances of the ranking procedure.

9. **A Five - Day workshop on Technologies for Infrastructure Planning, Design, Monitoring and Management** was organized by the Department of Civil Engineering from 16th to 20th May 2021. The objective of the workshop was to create awareness about various projects, case studies and research activities and to provide a forum for the free and fruitful exchange of ideas and information for upcoming Projects.



10. **Workshop on Fundamentals of Digital World** was conducted by the Department of Computer Science and Engineering from 17th to 30th April 2021 for faculty from all the departments of the college.

The workshop was conducted to provide the skills required for working online effectively which included Computer Systems concepts, networking fundamentals, security in the

digital world, professional documentation, using digital data effectively, sharing data online & effective presentations. It was taken up as a course on canvas where the faculty were given assignments and tests along with live webinars.



11. A One Week AICTE Training and Learning (ATAL) Academy sponsored Online Faculty Development Program on Applications of Power Electronics in Smart Grid and Electric Vehicle was conducted from 25th to 29th August 2020 by the Department of Electrical & Electronics Engineering with Dr. Moinuddin K Syed HOD- EEE as Convener & Dr. Nagaraja Kumari.CH Assoc. Professor, EEE as Coordinator.

The resource persons for the workshop included Prof. (Dr.) DP Kothari, Hon. Adj. Professor, VNIT, Nagpur(Former VC-VIT University), Dr.Akhtar Kalam, Professor of Electrical Engineering, Victoria University, Melbourne, Australia,

VII. Academic support activities conducted in 2020-21

12. A one Week Online Faculty Development Workshop on Teaching learning and Assessments

This FDP was conducted from 27th May 2020 to 1st June 2020. The topics covered in the workshop included Teaching - Learning strategies, design of Assessments for Learning, Course Outcomes and Mapping of POs to PEOs, Teaching Methodologies, Building Course files, Course Level Projects, Framing Questions for Higher order thinking Skills, and Preparing Assessments. Dr.Divya Nalla, Dr.Uma Garimella (Former Director, CFDM), Dr.M.N.V.Ramesh, Dr.P.V.S.Sivaprasad, Mrs.B.K.Madhavi and Dr.Syed Moinuddin were the resource persons for the workshop.

13. An FDP on Online Teaching was conducted by CFDM in August 2020 which focussed on the methodology to be implemented while conducting the online classes. The faculty of the college who had undergone an online teaching course were the resource persons - Dr.N.Lavanya, Mrs.B.Sushma from EEE Department, Mr.Narendra of MBA Department, Mrs.Anagha B, and Mrs. Vijetha from CSE Department,

Starting from selection of the right online teaching platform to the techniques to engage the students in the online classes were presented in this FDP. Tools for Online classes like Zoom, Google Meet, Big Blue Button, goto Meeting, Webex, tools for conducting online polls, online tools like white boards, breakout rooms, and many other technologies that were needed for the faculty to effectively conduct the online classes were presented in the session.

14. A one day workshop on Bloom's taxonomy was conducted online on 3rd July 2020. This workshop focussed on different learning levels in the teaching - learning pedagogy and was very much practically oriented. The one day workshop saw all the faculty of NMREC participating enthusiastically and refreshing their knowledge levels about Bloom's taxonomy. The new faculty got an opportunity to understand the concepts and also had hands-on experience of creating the levels for different types of questions.

15. The department of CSE in its lab refresher program had covered the *Machine Learning, Scripting Languages, Software Testing Methodologies* labs during 5-14th July, 2020.

17. The faculty of Civil engineering department have undergone training in *Staad Pro and CAD* labs during 13 -17th July 2020.

18. The department of Mechanical engineering had conducted its annual lab refresher program during 10-25th Sep. 2020. Labs covered included *Mechanics of Solids lab, Metallurgical lab, FMHM lab, Thermal engineering lab, Heat transfer lab, CAD-CAM lab, Production technology lab, Metrology lab, KOM lab, Engineering workshop practice lab.*

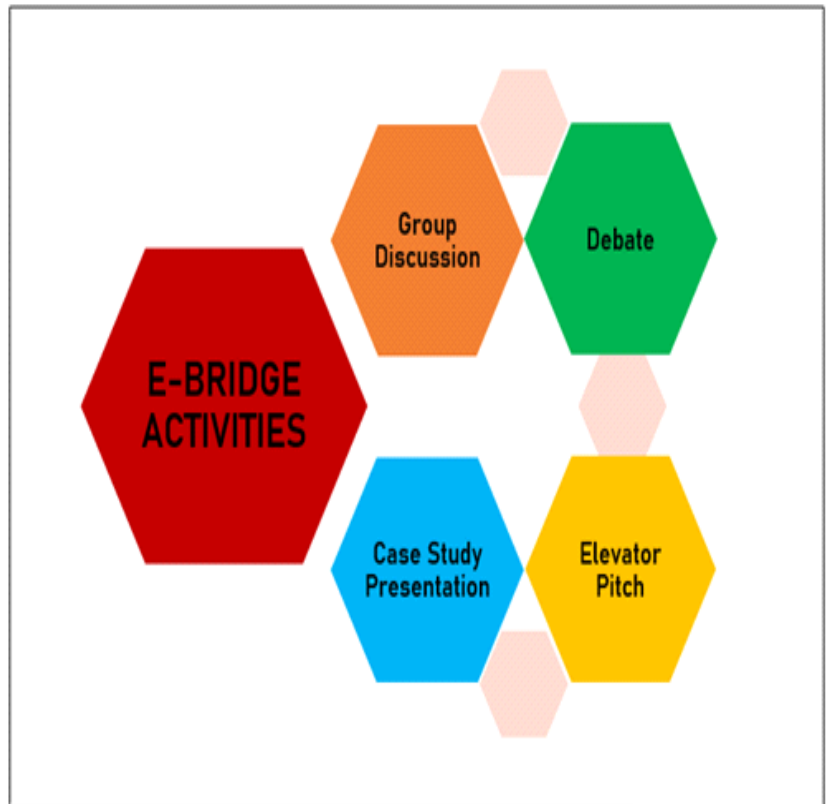
VIII. Additional information relating to TLC activities.

a. When the focus is on student centric teaching/learning and student empowerment, the institution has come with a novel approach titled 'e-bridge' or the employability bridge which aims at enhancing the communication, presentation and analytical skills of the students.

EMPLOYABILITY BRIDGE ACTIVITIES

Engineering education in India

and all over the world is looking at a sea change in its pedagogy techniques. Academic experts and industry are collaborating and finding newer ways to improve the employability skills among students. To reduce this gap and to make our students employment ready we at NMREC have introduced an employability bridge program. E bridge is a forum for social interactions among the faculty and the students. These activities have been initiated since 2016. Faculty would carry out these activities at least once in a month in their classes. During the pandemic too when the classes have gone online, faculty were able to conduct them successfully, and these not only made the students active in the online classes but also improved their interest in the subject studying.



b. Faculty Participations in IUCEE activities

Faculty of NMREC have been participating in various activities of IUCEE, including participations in cluster groups, participations in various training programs and workshops conducted by IUCEE, participations in the annual summits, the ICTIEE, and leadership summits etc. to mention a few, to help them improve their teaching skills and thus to improve the teaching-learning quality at the institute.

c. Faculty participation in ICTIEE and leadership summits

ICTIEE 2021:

ICTIEE 2021, the Eighth international conference on transformations in Engineering Education has been held virtually from Jan 8th to 10th, 2021.. 29 faculty members and 17

students from NMREC were selected and were sponsored by the college to attend the conference. They have attended various workshops like Project Management, Entrepreneurship basics, Engineering Ethics and so on in the conference. Selection of the faculty for sponsorship was based on their interest in attending the conference and the backdrop for their interest. Students were selected based on a short survey form. They were asked to go through the conference website <https://ictiee.org/ictiee2021/> and answer a few questions to be eligible for sponsorship from the college to attend the conference.

ICTIEE 2020:

ICTIEE 2020, the Seventh international conference on transformations in Engineering Education which was held from Jan 5th to 8th 2020, was attended by 13 faculty along with the heads of the Departments, Principal and Director of the college. Five research papers by faculty were selected for presentation in the conference, of which two were published in JEET. Two posters were presented as part of the 'Design thinking' workshop in the conference.

IUCEE Leadership Summit 2020:

The IUCEE leadership Summit was held from 10th July to 12th July 2020. All the Heads of the Departments, Principal and Director attended the summit. Dr.Divya Nalla, Director of the college participated as a Panelist in the session on “Accreditation” in the Leadership Summit.



d. The following are the details of faculty members, who have participated in various mini work shops conducted by IUCEE recently.

- **Design Thinking** - Dr. Lavanya (EEE), Dr. Khaleelu Rehman (ECE) and Mr. Srikanth Reddy(CSE).
- **Social and Emotional Learning** - Mr.Rakesh Kumar (Mech), Dr.V. Aparna(M&PS) and Dr.Reshmi Nair(M&PS)

- ***Clean and Green Campus*** -Dr. Raghava Rao (Civil), Vijay Kumar(EEE) and Mr. Surendranath (Civil).
- ***Artificial Intelligence for All***-Dr. Sitendra Tamrekar (CSE), Mr.Radha krishniah (CSE) and Ms. Rubeena Sultana (CSE)
- ***Entrepreneurial Thinking***-Dr.Bhushan (Head,MECH), Mr.Sravan Kumar(MECH) and Ms. Sirisha M (ECE).
- ***Sustainability and leadership***-Dr. Satyabrata Sahoo (EEE),Mr. T.Madhusudan Rao (MBA) and Ms.K.Kavitha (MPS).
- ***Quality Circles for Critical Thinking***- Dr.Divya Nalla (Director), Dr.M.N.V.Ramesh (Principal), Dr.Moinuddin K Syed (Head, EEE) Mrs.B.K.Madhavi (Head, CSE), Mrs.T.Rajani (Head, ECE), and Dr.V.Aparna (Missions NEP Implementation lead from NMREC).
- ***Engage Students in Creative Thinking***-Dr.M.N,V Ramesh (Principal, NMREC), and Mrs.T.Rajani(Head, ECE).

e. IUCEE International Engineering Educator Certification Program (IIEECP)

i) **IIEECP Phase I** : workshop on effective teaching was conducted by Dr. Claire Komives. She conducted the workshop from 30th Sep 2019 to 4th Oct 2019.

The workshop included sessions on effective lecture delivery, hands on sessions on active learning and collaborative learning, fundamentals of assessments, designing the good questions and creating rubrics. The topic of course level projects was also discussed.

51 faculty of the college received their IIEECP Phase I Certification.

The second phase began in the last week of Jan., 2020. 12 faculty successfully completed the course in the month of December 2020 and were awarded the IIEECP certificates by the IUCEE.

Few of the faculty have got the accreditation of IGIP also after they have successfully met the eligibility criterion.

ii) 50 more faculty have been certified under IIEECP Phase I, in two batches through online workshops. (Jan - Mar.2021)

During 12-01-21 to 19-01-21, in the virtual IUCEE-IIEECP, phase - I training program, 25 faculty from different departments got certified.

25 more faculty have obtained Phase I certification in the subsequent virtual training program held between Feb.26th and March 2021.

At present several faculty are about to start their 2nd phase of the IUCEE- IIEECP program.

iii) Currently around 50 faculty are pursuing the second phase of IIEECP program started in Dec.2021. In all probability by the end of this academic year at least 60% of the faculty might have got trained through this program.

f. The IUCEE-NEP program(2021-22) : From the current academic year onwards under the aegis of IUCEE, holistic and multi disciplinary teaching/learning strategy is implemented across one

section (60 students)of First year students and around 15 IUCEE trained faculty are conducting the classes and monitoring the progress of the students continuously.

Conclusion : Under the visionary leadership of our director madam and the dedicated teacher - student community of the teaching -learning center, the transformations in the field of education as envisaged by NEP - 2020 are definitely possible, of course with an able guidance from IUCEE.

N.Sesha Srinivas,
TLC Coordinator , NMREC.

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