



Koneru Lakshmaiah Education Foundation

(Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' Grade University Approved by AICTE ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 502, Guntur District, Andhra Pradesh, INDIA.

Phone No. 0863 - 2399999; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 -2577715, Fax: +91-866-2577717.

INTERNAL QUALITY ASSURANCE CELL

Report on

One Day Sensitization Workshop on "Imparting Quality in Teaching & Learning through Outcome Based Education"

Date	:	09.10.2024
Mode	:	Physical & Online – WebEx (for KLUH Campus Faculty)
Time	:	10:30 am to 4:30 pm
Organized By	:	Internal Quality Assurance Cell (IQAC) and Academic Staff College (ASC)
Target Audience	:	<ul style="list-style-type: none"> Associate Deans of Academics, IQAC & ASC In-charges of NAAC Criteria 1 & 2 (from Engg Departments) Professor In-charges (Academics) [from Engg Departments]

Workshop Brochure:

RESOURCE PERSON



Dr. Karthik Balasubramanian, Associate Professor in the Dept of ME, NIT Warangal

Dr. Karthik Balasubramanian, Associate Professor in the Dept of Mechanical Engineering at NIT Warangal holds a bachelor's degree in mechanical engineering from Anna University, a Master's degree in Heat Power Engineering from BIT Mesra, Ranchi, and a PhD from the National University of Singapore (NUS). He also completed a post-doctoral fellowship at NUS.

His research primarily focuses on micro channel cooling, where he has developed innovative techniques to reduce pressure drop fluctuations for stable flow boiling and enhanced heat transfer, securing a US patent for his work.

Dr. Karthik's research interests include liquid cooling in micro-channels, particularly for EV battery thermal management. He has led three sponsored research projects funded by DST ECR, SPARC, and DRDO, and has published 34 international journal articles. He has supervised four PhD students and currently guides two others.

ORGANIZING COMMITTEE

CHIEF PATRON
Er. Koneru Satyanarayana, Chancellor, KLEF

PATRONS
Dr. G. P. S. Varma, Vice-Chancellor, KLEF
Dr. K. Rajasekara Rao, Pro-Vice Chancellor, KLEF
Dr. N. Venkatram, Pro-Vice Chancellor, KLEF
Dr. A. V. S. Prasad, Pro-Vice Chancellor, KLEF

Convener
Dr. K. Ramakrishna, Dean - Quality, KLEF

Co-Convener
Dr. I. Govardhani, Principal, ASC, KLEF

Organizing Committee
Dr. M. Venu Gopala Rao, Associate Dean (Quality)
Dr. K. V. Narasimha Rao, Associate Dean (Quality)
Dr. Radha Krishan Sharma, Associate Dean (Quality)
Dr. P. Lakshmi Prasanna, Associate Dean (Quality)
Dr. M. Nagesh, Associate Dean (Quality)
Dr. M. Lakshmana Kumar, Associate Dean (Quality)
Mr. T. Teja Sreenu, Assistant Professor
Mr. K. Anil Kumar, Manager

REGISTRATION FREE
e-Certificate of participation will be given for all attendees.
<https://forms.office.com/r/Quwcu74DPd>

For More Details, Please Contact
Dr. K. V. Narasimha Rao | Dr. Radha Krishan Sharma
E-Mail: iqacoffice@kluniversity.in
Phone: 7036433888, 9601235629
Koneru Lakshmaiah Education Foundation, Vaddeswaram, Andhra Pradesh - 522302



ACCREDITED BY NAAC WITH A++
RANKED 22nd IN THE NATIONAL HIGHER EDUCATION SURVEILLANCE BOARD (NHESB) SURVEILLANCE REPORT 2024
CATEGORY 1 UNIVERSITY
44 YEARS OF EDUCATIONAL EXCELLENCE

organized by
IQAC & ASC

Sensitization Workshop on
Imparting Quality in Teaching & Learning Through Outcome-Based Education
on **9th October, 2024**

Venue :
Rose Hall

www.kluniversity.in

ABOUT US

The KL College of engineering was started in the Academic Year 1980-81 and attained autonomous status in 2006 and conferred with Deemed University (Koneru Lakshmaiah Education Foundation Deemed to be University) status in the Year 2009 under Section 3 of UGC act 1956. NAAC assessed the University and accredited for a period of five years from 2018 to 2023 with CGPA of 3.57 with A++ grade. The University has accorded Category-1 status. Research has taken a quantum step towards quality improvement through publishing in Scopus Indexed/SCI Journals building a h-Index of 86 (Scopus) and 68 (WoS) at the moment. KLEF has established an ecosystem to promote innovations including a centre for Innovation, Incubation and Entrepreneurship development leading to start-ups in different disciplines.

"Internal Quality Assurance Cell (IQAC) focuses on enhancing the quality of education, administration, and overall institutional performance at Koneru Lakshmaiah Education Foundation (KLEF)"



PROGRAM SCHEDULE

10:30	Opening Remarks & Jyothi - prajwalana
10:45	Workshop Objectives
11:00	Outcome based education
	Introduction on PO's
	Key concepts in Identifying CO's
	Mapping of CO's & PO's
1:00	Lunch Break
2:00	CO's & PO's Assessment
3:00	Hands on Session on Preparation of Course Hand Out
4:00	Valedictory Function
4:15	High Tea

OBJECTIVE OF THE WORKSHOP

The objective of the workshop is to enhance teaching and learning quality by equipping educators with effective strategies for implementing and assessing Outcome-Based Education (OBE) practices. Delivering education without achieving desired outcomes is unproductive for both learners and society. In response to the declining quality of education systems globally, the Washington Accord emphasized the adoption of Outcome-Based Education (OBE). OBE places a strong focus on defining clear expectations of what students should know and be able to do by the time they complete their education. This approach ensures that all students reach specific learning goals and acquire the skills and knowledge needed to thrive beyond formal education. OBE is an educational theory that aligns every component of the educational system with these intended outcomes.

At Koneru Lakshmaiah Education Foundation, we are deeply committed to maintaining excellence in education. Internal Quality Assurance Cell (IQAC) assesses the program outcomes attainment of students and conduct gap analysis.

TARGET GROUP

1. Faculty: Enhance teaching strategies and assessments through Outcome-Based Education (OBE).
2. Academic Administrators: Foster continuous improvement and accountability in the teaching-learning process.
3. IQAC Members: Strengthen OBE practices to enhance institutional quality.
4. Curriculum Designers: Align learning outcomes with curriculum objectives and assessments.
5. Quality Assurance Professionals: Improve understanding of OBE in meeting accreditation standards.
6. Students: Benefit from better-aligned teaching methods and career-focused learning outcomes.

This workshop supports all stakeholders committed to quality education and teaching excellence.



The Internal Quality Assurance Cell (IQAC) and Academic Staff College (ASC) jointly organized a National Workshop on **“Imparting Quality in Teaching & Learning through Outcome Based Education”** in blended mode (Physical workshop for Vijayawada faculty and through online mode using WebEx platform for KLU Hyderabad campus faculty) on 9th October 2024. The workshop was inaugurated by Hon’ble Vice-Chancellor Dr. G. Pardha Saradhi Varma at 10:45 am.





At the outset, Dr. K. Ramakrishna, Dean-Quality welcomed the audience/the resource person to the workshop. He explained the importance of the workshop and its relevance in the context of the upcoming NAAC peer team visit. He invited the Hon'ble Vice Chancellor to grace the dais and to throw light about the OBE Workshop to the audience.



The Vice-chancellor explained in detail about the Washington Accord, relevance of OBE and the expected student outcomes beyond collecting a degree certificate. He also

informed about various steps being adopted by KLEF while implementing OBE, viz. CBCS with numerous inter-departmental electives with necessary pre-requisites and most importantly focus on student learning. He also talked about the implementation of NEP-2020 by KLEF in toto. The Vice-chancellor described the importance of AI and the necessity of changing pedagogy for enhancing the quality of higher education. He congratulated the IQAC/ASC for organizing this one-day workshop and hoped that this will benefit the faculty colleagues. He greeted the audience and concluded his message.



Dr. K. V. Narasimha Rao, Associate Dean-Quality introduced the Resource person, Dr. Karthik Balasubramanian to the audience.



Dr. Karthik Balasubramanian is an Associate Professor in the Department of Mechanical Engineering at NIT Warangal, where he joined in 2014. He holds a bachelor's degree in mechanical engineering from Anna University, a master's degree in Heat Power Engineering from BIT Mesra, Ranchi, and a PhD from the National University of Singapore (NUS). He also completed a post-doctoral fellowship at NUS. His research primarily focuses on microchannel cooling, where he has developed innovative techniques to reduce pressure drop fluctuations for stable flow boiling and enhanced heat transfer, securing a US patent for his work. Dr. Karthik's contributions have practical applications, including the thermal management of power electronics for Singapore's SMRT Metro trains, where he integrated numerical simulations and experimental investigations for improved coolant flow distribution.

At NIT Warangal, Dr. Karthik's research interests include liquid cooling in microchannels, particularly for EV battery thermal management. He has led three sponsored research projects funded by DST-ECR, SPARC, and DRDO, and has published 34 international journal articles. He has supervised four PhD students and currently guides two others. Dr. Karthik introduced Design Thinking and Design Studio courses for B. Tech Mechanical Engineering students, fostering creativity and critical thinking skills. His students have generated seven patents in the past two years. He is also trained in Engineering Education and has served on the Mech. Engg Accreditation Committee for seven years, currently chairing the committee and contributing to the NITW Ranking Committee.

Dr. Narasimha Rao thanked the Guest and invited him to take the session on OBE.



Gist of the presentation:

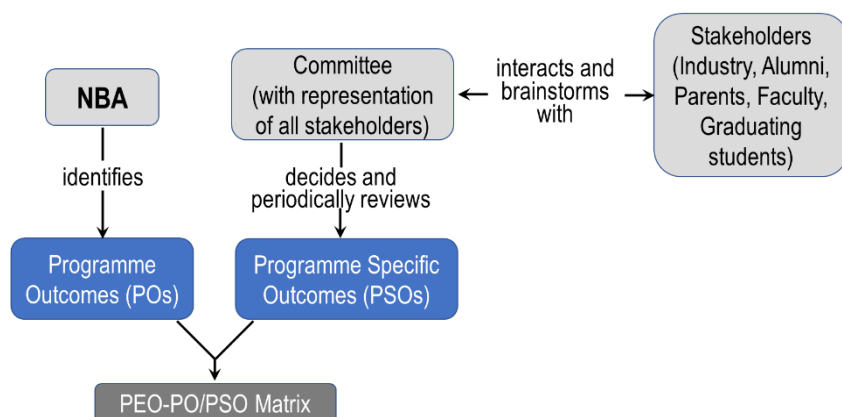
Outcome Based Education (OBE) is student/learner centric. First the required outcomes/attributes are listed and then it focusses on training the students for those outcomes. Outcome-based education requires outcome-based curriculum, outcome-based teaching/training, and outcome-based assessment. Outcome-based curriculum involves designing the curriculum based on the expected outcomes (Course and Program outcomes). Outcome-based teaching involves designing the course delivery to evoke the required outcomes (e. g. Flipped classroom, Project based learning, Participatory/Active learning...). And Outcome-based assessment involves assessing the students for their abilities in each of the intended outcomes. (Question papers, Assignments, Project work, Seminar/Project Presentations, Viva-voce... should be designed as such). Transparency in assessment is very crucial. In short, OBE goes from knowing what we want in the students to how we get there. An important aspect of OBE is that every outcome should be measurable, students should be trained in those outcomes and the attainment of those outcomes must be measured through the assessment process.

COs for any course at higher educational institution should ideally begin from the level of applying the principles. They must progressively go from lower cognitive level to higher cognitive level. A glance at attainment of CO of each course indicates the attainment of different cognitive levels of that subject. This gives a scope for

- Review of COs
- Enhancing the quality of question papers
- Giving more stress on a particular CO which is attained poor.

Program Specific Outcomes (PSOs):

- Beyond POs
- Specific to the program exhibiting the uniqueness and strength of the training offered
- 2 to 4 in number
- Must have a process for arriving at them
- Must be realistic
- Curriculum and other activities during the program must help the achievement of PSOs as with POs!



Setting the question paper

Ensure that each question corresponds to at least one CO wherein we test the ability of the students in that CO.

Ensure that all COs are addressed through the combination of all the Exams.

In case of wanting to give a choice (either/or), ensure that both the questions address the same CO and are of the same difficulty level.



Afternoon hands-on session (Venue: S-808, SSDC Block)

In the afternoon session, a hands-on activity was conducted, involving 59 participants from various departments. These participants were organized into 10 groups and tasked with developing course outcomes and designing assessment methodologies to measure the achievement of these outcomes. They were also instructed to map the course

outcomes to the Program Outcomes (PO) and Program-Specific Outcomes (PSO). Throughout the activity, the resource person and the Dean-Quality Assurance actively engaged with each group, addressing their queries and providing guidance. The participants demonstrated a high level of enthusiasm and active involvement, which contributed to the success of the exercise.



At the conclusion of the activity, the resource person highlighted some common errors observed during the session, offering constructive feedback to ensure improved understanding and implementation. This reflection helped clarify any misconceptions and reinforced key points discussed throughout the workshop. The session ended on a positive note, with a vote of thanks delivered by the Dean-Quality, acknowledging the efforts of both the resource person and the participants. The hands-on activity not only fostered collaboration but also provided valuable practical insights into effective course outcome development and assessment mapping.



Organizers were delighted by the enthusiastic participation of all attendees during this activity. Each team provided a plethora of valuable suggestions. Dr. K. Ramakrishna invited these teams to share their ideas on the stage, sparking lively discussions.

Following the hands-on session, participants were asked to share their feedback through a closed questionnaire. The overwhelming and motivating feedback received from the participants was appreciated by the organizers.

Summary of the workshop:

No of participants registered (both online and offline) : 95
 No of participants (Offline) attended : 59



The workshop was adjourned with Dr. K. Ramakrishna, Dean-Quality thanking the Chief Guest, participants, and the Organizing Team for their cooperation.



Dr. K. Ramakrishna
(Dean-Quality)

To: All the Participants of the Workshop

Cc: IQAC File