Guru Gobind Singh Foundation's
Guru Gobind Singh College of Engineering & Research Centre
Approved by AICTE, Govt. of Maharashtra & DTE Mumbai, Affiliated to Savitribai Phule Pune University (Formerly known as University of Pune)
NAAC Accreditation first cycle "B+" with CGPA 2.72 in April 2019, DNV – GL Certified for ISO 9001 : 2015 Standards

CRITERIA II: TEACHING-LEARNING AND EVALUATION

2.3 Teaching Learning Process

2.3.1 **Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences using ICT tools**

The institute lays emphasis and adopts outcome-based education (OBE. The faculty makes the decisions on the learning requirements, after reviewing the affiliated University's syllabus. The OBE is then integrated, with student-centered teaching strategies. Following steps are adopted to improve learning:

- Strengthening industry and institutions interaction through MoUs with various organizations.
- Established industry supported training center
- Provision of various ICT tools to improve teaching and assessment
- Use of innovative teaching techniques such as Think-Share-Pair, Development of Models, Case Studies, Simulations, Presentations, Videos etc.
- Nodal centre of learning NPTEL, EduSkill, CISCO, AWS, Blue Prisam and PMKVY

I. **Participative Learning:** Departmental student association, student clubs provide students a platform for developing their management, leadership & team-working skills through active participation. Students participate in activities having social relevance through extension activities & socially relevant project work. Other approaches of adopting participative learnings are

- Classroom discussions
- Presentations on various topics
- Development of videos on the given topic

Dr. Neelkanth G. Nikam
PRINCIPAL

PRINCIPAL
GURU GOBIND SINGH COLLEGE OF ENGINEERING
& RESEARCH CENTRE, NASHIK

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- Learning through visualization and discussion
- Design assignment.
- Organizing various technical events, workshops, training, and guest lectures.
- Group discussions and brainstorming sessions

II.   Experiential Learning:

The experiential learning methodologies include visit to nearby industries giving exposure to the industrial environment. The students take up industrial internships and industry sponsored projects which gives an opportunity for solving real life problems. All departments are equipped with state of art laboratory to cater to prescribed curriculum to get an hands-on approach for performing experiments on mechatronic systems, fluid-power circuits & software interfaced hardware kits, measurement tools/gauges etc. The students complete the job work related to carpentry, welding, fitting & machining by working on lathe, drilling, grinding, bending & welding machines. The skill development subjects include assembly & disassembly of mechanical systems (gear box, IC engines). One of the best examples of experiential learning is through the specialized laboratories of Robotics, Mechatronics and Automation, BOSCH Diesel, AWS Academy etc. which provides an opportunity for hand-on learning. The students participate in project competitions the outcome of which is visible in well appreciated at various competitions.

III.   Problem based learning:

Problem solving methodologies are used for enhancing the learning experiences and includes project based learning, assignments, case studies, demonstrations, quizzes etc, and also through curricular topics like statistics, data analysis, programming languages, numerical techniques, software tools and fundamental principles. Other ways of problem based learnings are

- Mini projects on given problem
- Case studies on given problem
- Writing technical reports / literature review

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- Participating in technical competitions

- Industry supported projects

- Course on Problem Based Learning

IV.   ICT Tools and Facilities:

Following ICT enabled tools, facilities and practices are adopted:

- MOOC's Platform

- Digital library resources like DELNET, NDL

- NPTEL videos on central e-data storage available and connected through LAN

- High speed internet connections in classrooms, laboratories and faculty rooms

- LAN and Wi-Fi facility

- LCD Projectors

- Computer laboratory in each department

- Conducting classes through Google meet platform and Google Classrooms

- Use of ERP system for examination, CO and PO attainment and LMS

- Use of powerpoint presentations and videos

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