



ECE

- Program Overview
- HOD's Desk
- Vision & Mission
- PEO's
- PO's
- PSO
- CO's
- Teaching Faculty
- Non-Teaching Faculty
- Lab Details
- Publications
- Student's List

Programme outcomes (POs):

Engineering Graduates will be able to:

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design / Development of Solutions:** 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.
4. **Conduct Investigations of Complex Problems:** 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.
5. **Modern Tool Usage:** 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.
6. **The Engineer and Society:** 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.
7. **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** 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.
11. **Project Management and Finance:** 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.
12. **Life-long Learning:** 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.

Quick Links

- Computer Science
- Electronics & Communication
- Mechanical Engineering
- Electrical & Electronics
- Civil Engineering

Contact us

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 Mail ID: eranna@bitm.edu.in
 Mail ID: jayaveer_88@yahoo.com

Ranked #15
 Ranked as 15th Best Engineering College in Karnataka by Edu-Rand Magazine Engineering College Raknking 2015

ACCREDITATION

Ranked #6
 Ranked 6th in Top 10 Private Colleges in Karnataka (https://pickacollege.digit.in/)





ECE

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PSO1: To understand the principles, processes, techniques and design aspects of electronic devices, circuits and communication systems.

PSO2: To apply, analyze and design electronic circuits, communication systems, embedded systems by using higher engineering mathematical foundations, computational principles and network modeling skills.

PSO3: To develop electronic hardware and software systems for universal requirements using sensors, embedded controllers, signal processors, analog and digitally integrated chips.

Quick Links

- [Computer Science](#)
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- [Mechanical Engineering](#)
- [Electrical & Electronics](#)
- [Civil Engineering](#)

Contact us

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COMPUTER SCIENCE & ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

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[Lab Details](#) [Publications](#) [Student's List](#)

Program Specific Outcomes (PSOs):

PSO 1: Demonstrate the principles, architectures, and Organization of computers, embedded systems, and computer networks.

PSO 2: To develop software applications using advanced technologies to cater to the growing needs of Industry.

Quick Links

- Computer Science
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Contact us





EEE

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PSO 1 Analyze, design and solve problems in the field of electrical and electronics engineering by applying knowledge acquired from circuit theory, control theory, electrical machines, electrical power systems, power electronics and other allied topics.

PSO 2 Understand the recent technological developments in the area of electrical and electronics engineering and develop products/ software to cater the needs of society and industry.

Quick Links

- [Computer Science](#)
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- [Mechanical Engineering](#)
- [Electrical & Electronics](#)
- [Civil Engineering](#)

Contact us

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 Mail ID: eranna@bitm.edu.in
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Mechanical

MECHANICAL ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

- [Program Overview](#)
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- [PEO's](#)
- [PO's](#)
- [PSO's](#)
- [CO's](#)
- [Teaching Faculty](#)
- [Non-Teaching Faculty](#)
- [Lab Details](#)
- [Publications](#)
- [Student's List](#)

Program Specific Outcomes (PSO's):

- PSO1:** Ability to utilize their knowledge in Mechanical Engineering Sciences on an applied basis.
- PSO2:** Ability to apply learned principles to the analysis, design, development and implementation to more advanced mechanical systems or processes.

Quick Links

- [Computer Science](#)
- [Electronics & Communication](#)
- [Mechanical Engineering](#)
- [Electrical & Electronics](#)
- [Civil Engineering](#)

Contact us

Office: 08392-237176
Mobile: +91 94487-55268





CIVIL ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

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- PO's
- PSO's
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- Non-Teaching Faculty
- Lab Details
- Publications
- Student's List

PSO 1 - The graduates will have the ability to plan analyze, design, Civil Engineer structures without over exploitation of natural resource.

PSO 2 - Student would able to design various types of foundation, by identifying different types of soil through geo technical investigation.

PSO 3 - Students would be able to identifying & solving environmental & hydraulics related problems.

Quick Links

- Computer Science
- Electronics & Communication
- Mechanical Engineering
- Electrical & Electronics
- Civil Engineering

Contact us

Office: 08392-237176
Mobile: +91 94487-55268





Civil

CIVIL ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

- Program Overview
- HOD's Desk
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- PEO's
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- Student's List

CO's Data → *CO's PDF file uploaded in the Website for each Program*

Quick Links

- ✓ Computer Science
- ✓ Electronics & Communication
- ✓ Mechanical Engineering
- ✓ Electrical & Electronics





COMPUTER SCIENCE & ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

Program Overview | HOD's Desk | Vision & Mission | PEO's | PO's | PSO's | CO's | Teaching Faculty | Non-Teaching faculty(Instructor's)

Lab Details | Publications | Student's List

CO's data → *CO's PDF file uploaded in the Website for each Program*

- ### Quick Links
- ✓ Computer Science
 - ✓ Electronics & Communication
 - ✓ Mechanical Engineering





Program Overview | HOD's Desk | Vision & Mission | PEO's | PO's | PSO | **CO's** | Teaching Faculty | Non-Teaching Faculty
Lab Details | Publications | Student's List
CO's Data → *CO's PDF file uploaded in the Website for each Program*

- ### Quick Links
- Computer Science
 - Electronics & Communication
 - Mechanical Engineering
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 - Civil Engineering

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ELECTRICAL & ELECTRONICS

Course Duration: 4 Years | Semesters: 8 |

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CO's Data *CO's PDF file uploaded in the Website for each Program*

Quick Links

- [Computer Science](#)
- [Electronics & Communication](#)
- [Mechanical Engineering](#)
- [Electrical & Electronics](#)





Mechanical

MECHANICAL ENGINEERING

Course Duration: 4 Years | Semesters: 8 |

Program Overview | HOD's Desk | Vision & Mission | PEO's | PO's | PSO's | **CO's** | Teaching Faculty | Non-Teaching Faculty | Lab Details

Publications | Student's List

CO's Data *CO's PDF file uploaded in the Website for each Program*

- ### Quick Links
- Computer Science
 - Electronics & Communication
 - Mechanical Engineering
 - Electrical & Electronics



Post Graduate

MASTER OF BUSINESS ADMINISTRATION (MBA)

Course Duration: 2 Years | Semesters: 4 |

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- CO's
- Faculty
- Strategic priorities
- Student Club's / Forum's
- Lab Details
- Awards & Recognition
- Events
- FDP's

Program Outcomes (PO's):

1. The Graduates will demonstrate the knowledge, skills and competencies required in a variety of organizational settings as an effective Manager.
2. The Graduates will demonstrate the analytical skills for ethical decision making in a business world of complex business issues and problems.
3. The Graduates will demonstrate the organizational skills for Policy Implementations.
4. The Graduates will demonstrate the ability to function effectively in a diverse and global business environment.
5. The Graduates will demonstrate the ability to use technology, communication, leadership and teamwork as tools of effective management.

Quick Links

- ✓ M.Tech in Computer Network Engg
- ✓ M.Tech in Digital Electronics
- ✓ M.Tech in VLSI & Embedded Systems
- ✓ M.Tech in Design Engineering
- ✓ M.Tech in Power Electronics



Post Graduate

MASTER OF BUSINESS ADMINISTRATION (MBA)

Course Duration: 2 Years | Semesters: 4 |

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- PO's
- PSO's**
- CO's
- Faculty
- Strategic priorities
- Student Club's / Forum's
- Lab Details
- Awards & Recognition
- Events
- FDP's

Program Specific Outcomes (PSOs):

- PSO 1 - To develop and demonstrate Skills and competencies by integrating financial models to resolve unprecedented challenges.
- PSO 2 - To develop marketing skills and competencies, in design effective marketing strategies and operational challenges in competitive market space.
- PSO 3 - Ability to systematically manage the human capital and ensure effective human resource audit to build business.

Quick Links

- M.Tech in Computer Network Engg
- M.Tech in Digital Electronics
- M.Tech in VLSI & Embedded Systems
- M.Tech in Design Engineering
- M.Tech in Power Electronics
- MBA

Contact us





Post Graduate

MASTER OF BUSINESS ADMINISTRATION (MBA)

Course Duration: 2 Years | Semesters: 4 |

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[Student Club's / Forum's](#)

[Lab Details](#)
[Awards & Recognition](#)
[Events](#)
[FDP's](#)

CO's Data ➡ *CO's PDF file uploaded in the Website for each Program*

Quick Links

- [M.Tech in Computer Network Engg](#)
- [M.Tech in Digital Electronics](#)
- [M.Tech in VLSI & Embedded Systems](#)
- [M.Tech in Design Engineering](#)
- [M.Tech in Power Electronics](#)
- [MBA](#)

Contact us





Basavarajeswari Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



(An ISO 9001:2015 Certified Institution)

Department of Physics

PROGRAM OUTCOMES

PO Number	PROGRAM OUTCOME DESCRIPTION	
PO 1	ENGINEERING KNOWLEDGE	APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING FUNDAMENTALS, AND AN ENGINEERING SPECIALIZATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS
PO 2	PROBLEM ANALYSIS	IDENTIFY, FORMULATE, REVIEW RESEARCH LITERATURE, AND ANALYZE COMPLEX ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING FIRST PRINCIPLES OF MATHEMATICS, NATURAL SCIENCES, AND ENGINEERING SCIENCES.
PO 3	DESIGN/ DEVELOPMENT OF SOLUTIONS	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.
PO 4	CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS	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.
PO 5	MODERN TOOL USAGE	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.
PO 6	THE ENGINEER AND SOCIETY	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.
PO 7	ENVIRONMENT AND SUSTAINABILITY	UNDERSTAND THE IMPACT OF THE PROFESSIONAL ENGINEERING SOLUTIONS IN SOCIETAL AND ENVIRONMENTAL CONTEXTS, AND DEMONSTRATE THE KNOWLEDGE OF, AND NEED FOR SUSTAINABLE DEVELOPMENT.
PO 8	ETHICS	APPLY ETHICAL PRINCIPLES AND COMMIT TO PROFESSIONAL ETHICS AND RESPONSIBILITIES AND NORMS OF THE ENGINEERING PRACTICE.
PO 9	INDIVIDUAL AND TEAM WORK	FUNCTION EFFECTIVELY AS AN INDIVIDUAL, AND AS A MEMBER OR LEADER IN DIVERSE TEAMS, AND IN MULTIDISCIPLINARY SETTINGS.
PO 10	COMMUNICATION	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.
PO 11	PROJECT MANAGEMENT AND FINANCE	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.
PO 12	LIFE-LONG LEARNING	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.

Basavarajeswari Group of Institutions



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



(An ISO 9001:2015 Certified Institution)

Department of Mathematics

COURSE OUTCOMES

COURSE: ENGINEERING MATHEMATICS-III (17MAT31)

On completion of this course, students will be able to:

CO301.1	Find Fourier series of Periodic functions.
CO301.2	Evaluate Fourier Transform, solve difference equations using Z-Transform.
CO301.3	Apply statistical and numerical methods to fit the given data into appropriate curves and to solve algebraic, transcendental equations.
CO301.4	Apply various numerical techniques to interpolate, evaluate definite integrals.
CO301.5	Use Curl and Divergence in vector integration, to verify Green's, Stroke's, Divergence theorems and to evaluate Geodesics.

COURSE OUTCOMES

COURSE: ENGINEERING MATHEMATICS-IV

(17MAT41)

On completion of this course, students will be able to:

CO401.1	Apply various Numerical Methods to solve first order differential equations.
CO401.2	Employ Bessel's and Legendre's differential equations to find the series solution.
CO401.3	Apply the Cauchy-Riemann equations to find the analyticity of a function and determine poles and residues.
CO401.4	To solve probabilistic problems of repeated nature and find the probability of Joint probability distribution.
CO401.5	To test the samples and use the knowledge of Markov chains in attempting engineering problems for feasible random events.



Basavarajeswari Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(An ISO 9001:2015 Certified Institution)

Department of Chemistry

ENGINEERING CHEMISTRY LAB
[18CHEL16/26]

Course Outcomes

Upon completion of this course, students will be able to:

CO No.	DESCRIPTION
CO 1	DEMONSTRATE THE KNOWLEDGE OF BASICS OF LABORATORY SKILLS IN CHEMISTRY.
CO 2	IDENTIFY METHODS OF ANALYSING MATERIALS, INSTRUMENTS TO SOLVE DOMESTIC, INDUSTRIAL AND ENGINEERING PROBLEMS.
CO 3	CONDUCT EXPERIMENTS, INTERPRETE THE DATA OF THE EXPERIMENT AND THE RESULTS OF EXPERIMENTS.
CO 4	APPLY INSTRUMENTS FOR DIFFERENT CHEMICAL AND ANALYTICAL APPLICATIONS.
CO 5	PREDICT QUALITY PARAMETERS FOR QUALITY CONTROL AND QUALITY ASSURANCE.

**MAINTAIN
DISCIPLINE**



Safety in the Laboratory

MERCK

Poster titled "Safety in the Laboratory" featuring sections for:

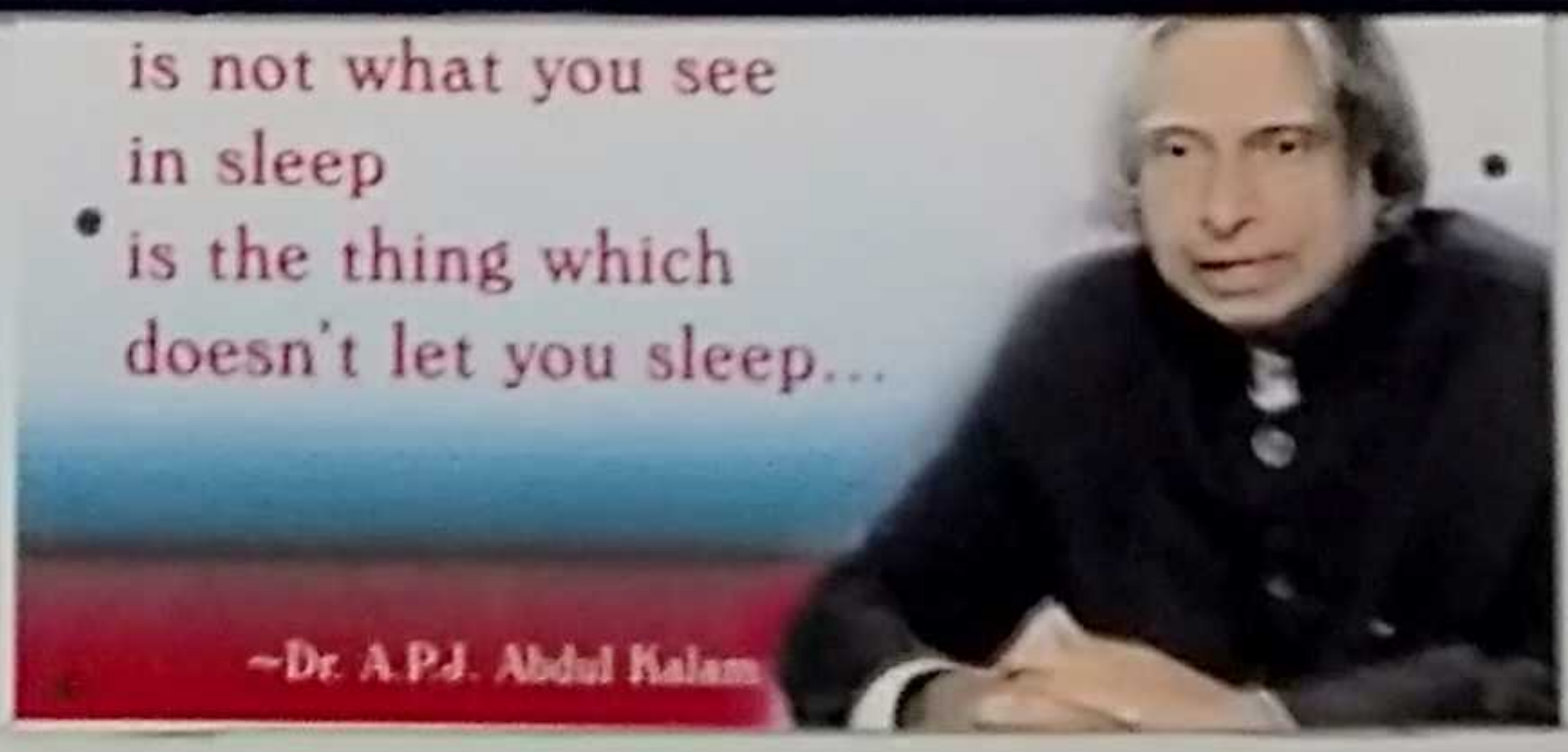
- General Precautions
- Safety Rules
- Risk and Safety Phrases
- In Emergencies
- Hazard Symbols



ENGINEERING CHEMISTRY
 [18CHE12/22]
Course Outcomes

Upon completion of this course, students will be able to:

CO No.	DESCRIPTION
CO 1	DEMONSTRATE THE USE OF FREE ENERGY IN EQUILLIBRIA, RATIONALIZE BULK PROPERTIES AND PROCESSES USING THERMODYNAMIC CONSIDERATIONS, ELECTROCHEMICAL ENERGY SYSTEMS.
CO 2	IDENTIFY THE CAUSES & EFFECTS OF CORROSION OF METALS AND CONTROL OF CORROSION. MODIFY THE SURFACE PROPERTIES OF METALS TO DEVELOP RESISTANCE TO CORROSION, WEAR, TEAR, IMPACT ETC. BY ELECTROPLATING AND EECTROLESS PLATING.
CO 3	EXPLAIN PRODUCTION AND CONSUMPTION OF ENERGY FOR INDUSTRIALISATION OF COUNTRY AND LIVING STANDARDS OF PEOPLE. CONSTRUCT ELECTROCHEMICAL AND CONCENTRATION CELLS, CLASSICAL, MODERN BATTERIES AND FUEL CELLS. UTILISE OF SOLAR ENERGY FOR DIFFERENT USEFUL FORMS OF ENERGY.
CO 4	UNDERSTAND ENVIRONMENTAL POLLUTION AND APPLY WASTE MANAGEMENT AND WATER CHEMISTRY.
CO 5	APPLY DIFFERENT TECHNIQUES OF INSTRUMENTAL METHODS OF ANALYSIS. FUNDAMNETAL PRINCIPLES OF NANOMATERIALS.

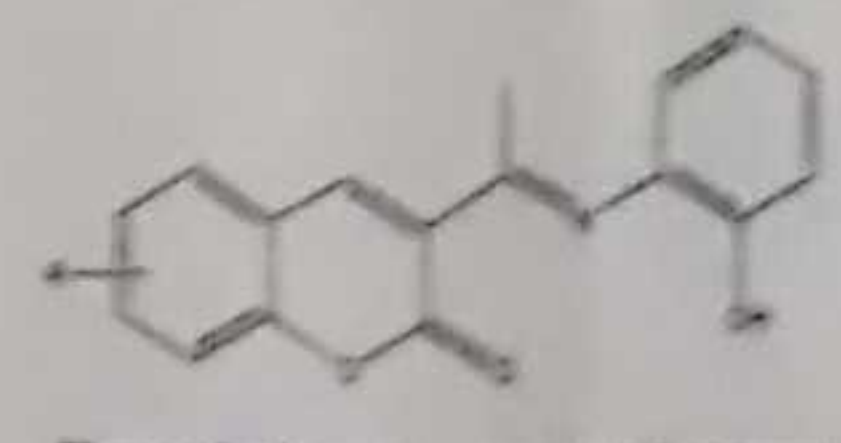


Synthesis of Some Schiff Bases of Coumarines and Their Complex Formation in Aqueous-Alcohol Medium

Vandhya * R¹, Suresha Babu Hirvath² Uma Desai¹ and Suresh
¹ Department of Chemistry, Ballari Institute of Technology & Management, Ballari - 587 104, Karnataka, India
² Rao Bhadr Y Mahabaleswara Engineering College, Ballari - 585 104, Karnataka, India
 *Corresponding Author: E-mail: drvandhya@nitm.ac.in

ABSTRACT: Schiff bases of acetyl coumarines with 2-aminophenol were synthesized and characterized by spectral and analytical studies. The acid-base properties of these and their ability to form complexes with copper(II), cobalt(II) and nickel(II) in aqueous-alcohol (50:50% V/V) medium were quantitatively determined. Potentiometric measurements were carried out at constant ionic strengths allowed us to define the acid-base properties of Schiff bases. The formation constants of complex species with copper(II), cobalt(II) and nickel(II) was investigated potentiometrically in sodium perchlorate at 1M at T = 25±0.1°C. The effects of substitution on association and stability of the complexes have also been studied.

Experimental Methods, Results and Discussion:



Compound	R	M.P. °C	Color
1a	H	200	Orange
1b	Cl	130	Reddish Brown
1c	CH ₃	190	Orange

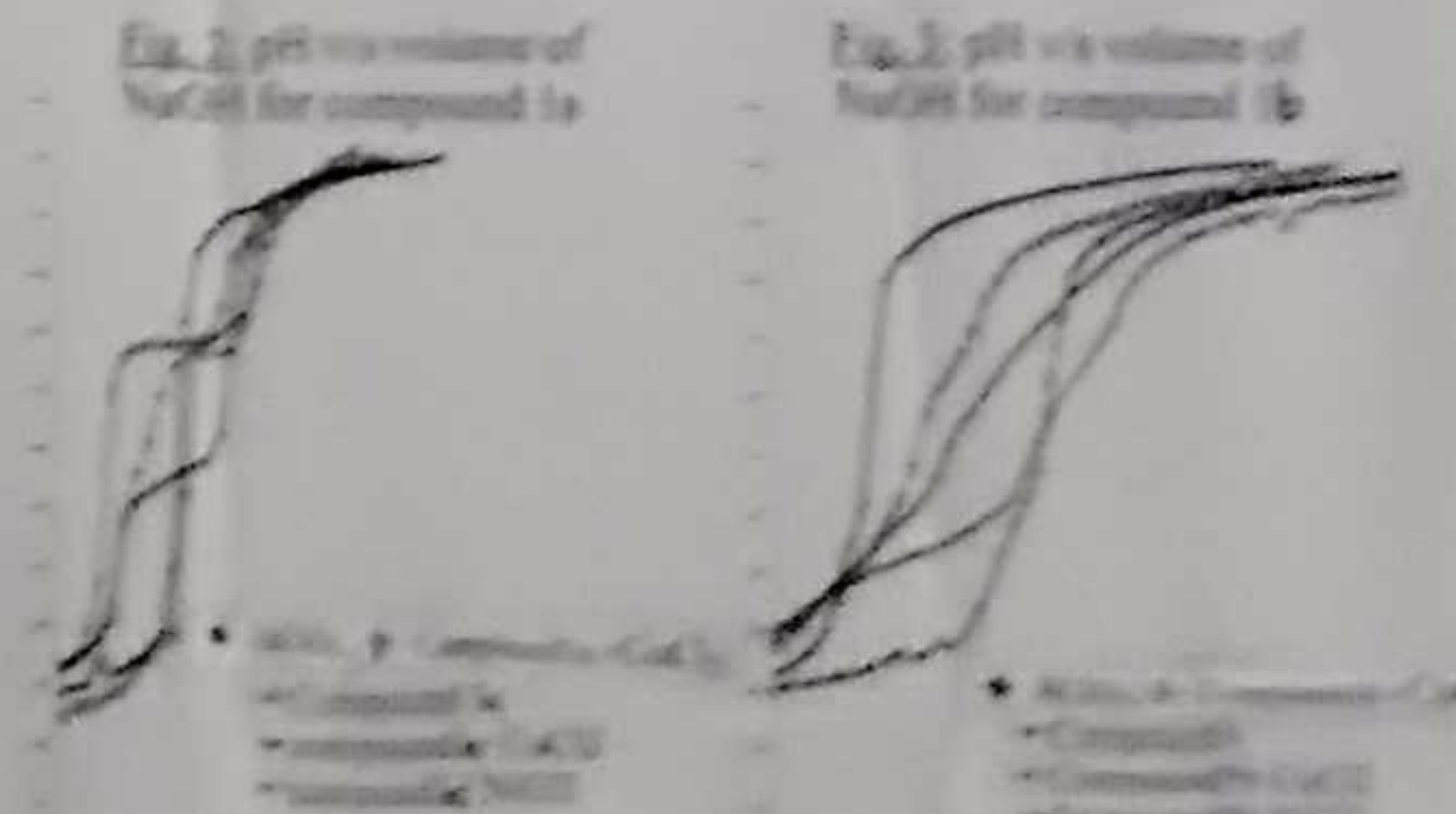


Fig. 4: pH vs. concentration

Department of P.T. Studies

ABSTRACT: TiO₂-Na₂O... The electrochemical measurements... The efficiency has been studied... The compounds in water... redox potential is... service life in the...
Experimental Method





Basavarajewar Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



(An ISO 9001:2015 Certified Institution)

Department of Chemistry

PROGRAM OUTCOMES

PO Number	PROGRAM OUTCOME DESCRIPTION	
PO 1	ENGINEERING KNOWLEDGE	APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING FUNDAMENTALS, AND AN ENGINEERING SPECIALIZATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS
PO 2	PROBLEM ANALYSIS	IDENTIFY, FORMULATE, REVIEW RESEARCH LITERATURE, AND ANALYZE COMPLEX ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING FIRST PRINCIPLES OF MATHEMATICS, NATURAL SCIENCES, AND ENGINEERING SCIENCES
PO 3	DESIGN/ DEVELOPMENT OF SOLUTIONS	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
PO 4	CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS	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
PO 5	MODERN TOOL USAGE	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
PO 6	THE ENGINEER AND SOCIETY	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
PO 7	ENVIRONMENT AND SUSTAINABILITY	UNDERSTAND THE IMPACT OF THE PROFESSIONAL ENGINEERING SOLUTIONS IN SOCIETAL AND ENVIRONMENTAL CONTEXTS, AND DEMONSTRATE THE KNOWLEDGE OF, AND NEED FOR SUSTAINABLE DEVELOPMENT
PO 8	ETHICS	APPLY ETHICAL PRINCIPLES AND COMMIT TO PROFESSIONAL ETHICS AND RESPONSIBILITIES AND NORMS OF THE ENGINEERING PRACTICE
PO 9	INDIVIDUAL AND TEAM WORK	FUNCTION EFFECTIVELY AS AN INDIVIDUAL, AND AS A MEMBER OR LEADER IN DIVERSE TEAMS, AND IN MULTIDISCIPLINARY SETTINGS
PO 10	COMMUNICATION	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
PO 11	PROJECT MANAGEMENT AND FINANCE	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
PO 12	LIFE-LONG LEARNING	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



PROGRAM OUTCOMES

PO Number	PROGRAM OUTCOME DESCRIPTION	
PO 1	INTACTING KNOWLEDGE	APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING, FUNDAMENTALS, AND AN ENGINEERING REGULATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS.
PO 2	WORLD ANALYSIS	IDENTIFY FORMULAE & RELEVANT RESEARCH, IDENTIFY AND ANALYZE COMPLEX ENGINEERING PROBLEMS, DRAWING SUBSTANTIATED CONCLUSIONS USING BEST PRACTICES OF MATHEMATICS, NATURAL SCIENCES AND ENGINEERING SCIENCE.
PO 3	DESIGN DEVELOPMENT OF SOLUTIONS	DESIGN SOLUTIONS FOR COMPLEX ENGINEERING PROBLEMS AND USE AN EFFECTIVE COMMUNICATION STRATEGIES THAT MEET THE SPECIFIC NEEDS WITH APPROPRIATE CONSIDERATION FOR THE PUBLIC HEALTH AND SAFETY, AND THE CULTURAL, SOCIAL AND ENVIRONMENTAL CONSIDERATIONS.
PO 4	CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS	USE RESEARCH-BASED KNOWLEDGE AND RESEARCH METHODS, INCLUDING DESIGN OF EXPERIMENT, ANALYSIS AND INTERPRETATION OF DATA, AND SYNTHESIS OF THE INFORMATION TO PROVIDE VALID CONCLUSIONS.
PO 5	MODERN TOOL USAGE	CREATE, SELECT AND APPLY APPROPRIATE TECHNIQUE, RESOURCES, AND MODERN ENGINEERING AND IT TOOLS INCLUDING PRODUCTION AND PROTECTING TO COMPLEX ENGINEERING ACTIVITIES WITH AN UNDERSTANDING OF THE LIMITATIONS.
PO 6	THE ENGINEER AND SOCIETY	APPLY REASONING IN ORDERING BY THE CONTEXTUAL KNOWLEDGE TO ASSES SOCIAL, HEALTH, SAFETY, LEGAL AND CULTURAL ISSUES AND THE CONSEQUENT RESPONSIBILITIES RELEVANT TO THE PROFESSIONAL ENGINEERING PRACTICE.
PO 7	ENVIRONMENT AND SUSTAINABILITY	UNDERSTAND THE IMPACT OF THE PROFESSIONAL ENGINEERING SOLUTIONS IN SOCIAL AND ENVIRONMENTAL CONTEXTS, AND DEMONSTRATE THE KNOWLEDGE OF, AND NEED FOR, SUSTAINABLE DEVELOPMENT.
PO 8	ETHICS	APPLY ETHICAL PRINCIPLES AND APPLY THEM TO PROFESSIONAL ETHICS AND RESPONSIBILITIES AND NORMS OF THE ENGINEERING PRACTICE.
PO 9	INDIVIDUAL AND TEAMWORK	FUNCTION EFFECTIVELY AS AN INDIVIDUAL AND AS A MEMBER OR LEADER IN DIVERSE TEAMS AND IN MULTIDISCIPLINARY SETTINGS.
PO 10	COMMUNICATION	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 PRACTICE PRESENTATIONS, AND GIVE AND RECEIVE CLEAR INSTRUCTIONS.
PO 11	PEOPLE MANAGEMENT AND FINANCE	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 PEOPLE AND IN MULTIDISCIPLINARY ENVIRONMENTS.
PO 12	LIFE-LONG LEARNING	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.

Department of Electronics & Communication Engineering



Vision of the Dept.

To be a Centre of Excellence for Learning and Development of Skills.

Mission of the Dept.

- M 1: To Equip the Graduates with Strong Foundation to Meet the Growing Challenges.
- M 2: To Inculcate Design and Development Skills Relevant to the Industry and Research.
- M 3: To Impart Innovative Technologies and Professional Values through Teamwork.

Program Educational Objectives (PEOs)

- PEO 1: To Acquire strong knowledge in Basic Science, Mathematics and ability to Apply this knowledge in the relevant fields of E&CE.
- PEO 2: To Develop Technical Competence and Uplift Research ability to Solve real time Problems.
- PEO 3: To Obtain Professional Excellency through Lifelong Learning and Produce Graduates with Professional Values.

Program Specific Outcomes (PSOs)

- PSO 1: To Understand the Principles, Processes, Techniques and Design aspects of Electronic Devices, Circuits and Communication Systems.
- PSO 2: To Apply, Analyze and Design Electronic Circuits, Communication Systems, Embedded Systems by using higher Engineering Mathematical Foundations, Computational Principles and Network Modeling Skills.
- PSO 3: To Develop Electronic Hardware and Software Systems for Universal requirements using Sensors, Embedded Controllers, Signal Processors, Analog and Digital Integrated Chips.

Program Outcomes (POs)

- PO 1: **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization in the solution of complex engineering problems.
- PO 2: **Problem Analysis:** Identify, formulate, research relevant literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO 3: **Design / Development of Solutions:** 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.
- PO 4: **Conduct Investigation of Complex Problems:** 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.
- PO 5: **Modern Tool Usage:** 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.
- PO 6: **The Engineer and Society:** 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.
- PO 7: **Environment and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.
- PO 8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO 9: **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO 10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to communicate and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO 11: **Project Management and Finance:** 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.
- PO 12: **Lifelong Learning:** 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.

Head Of Department
DEPT. OF ELECTRONICS & COMMUNICATION ENGG.

Dr. U. ERANNA
B.Tech., M.E., Ph.D.
Professor & Head





Department of Electronics & Communication Engineering

Program Educational Objectives (PEOs)

- PEO 1 :** To Acquire strong knowledge in Basic Science, Mathematics and ability to Apply this knowledge in the relevant fields of E&CE.
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Program Specific Outcomes (PSOs)

- PSO 1 :** To Understand the Principles, Processes, Techniques and Design aspects of Electronic Devices, Circuits and Communication Systems.
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- PSO 3 :** To Develop Electronic Hardware and Software Systems for Universal requirements using Sensors, Embedded Controllers, Signal Processors, Analog and Digital Integrated Chips.



Department of Electronics & Communication Engineering

Program Outcomes (POs)

- PO 1: Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO 2: Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
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- PO 12: Life-long Learning:** 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.

II YEAR ECE - A

BLOCK-07

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
 విజ్ఞానం, సాంకేతికత మరియు నైపుణ్యాల ద్వారా విజయం

Vision of the Institution
 To contribute towards the progress of industry and society through excellence in education & management education and research.

Mission of the Institution
 To offer state-of-the-art undergraduate, postgraduate and doctoral programmes.
 To empower the students with Technical, Managerial Skills and professional ethics.
 To collaborate with academia and industries for skill development.

Accredited by AICTE
 Designated as a State Level Learning Institute under the Ministry of Higher Education, Government of Karnataka.

Accredited by ISO 9001:2015
 Accredited by ISO 9001:2015, ISO 14001:2015 and ISO 27001:2013.

Accredited by ISO 27001:2013
 Accredited by ISO 27001:2013, ISO 9001:2015 and ISO 14001:2015.

Accredited by ISO 14001:2015
 Accredited by ISO 14001:2015, ISO 9001:2015 and ISO 27001:2013.

Samsung Triple Camera
Shot with my Galaxy A50

IV YEAR ECE - C

MTF10

SEMINAR HALL-06

ROOM NO. 20
BLOCK NO. 01 & 02

Department of Electronics & Communication Engineering

Program Educational Objectives (PEOs)

- PEO 1 : To Acquire strong knowledge in Basic Science, Mathematics and ability to Apply this knowledge in the relevant fields of E&CE.
- PEO 2 : To Develop Technical Competence and Uplift Research ability to Solve real time Problems.
- PEO 3 : To Obtain Professional Excellency through Lifelong Learning and Produce Graduates with Professional Values.

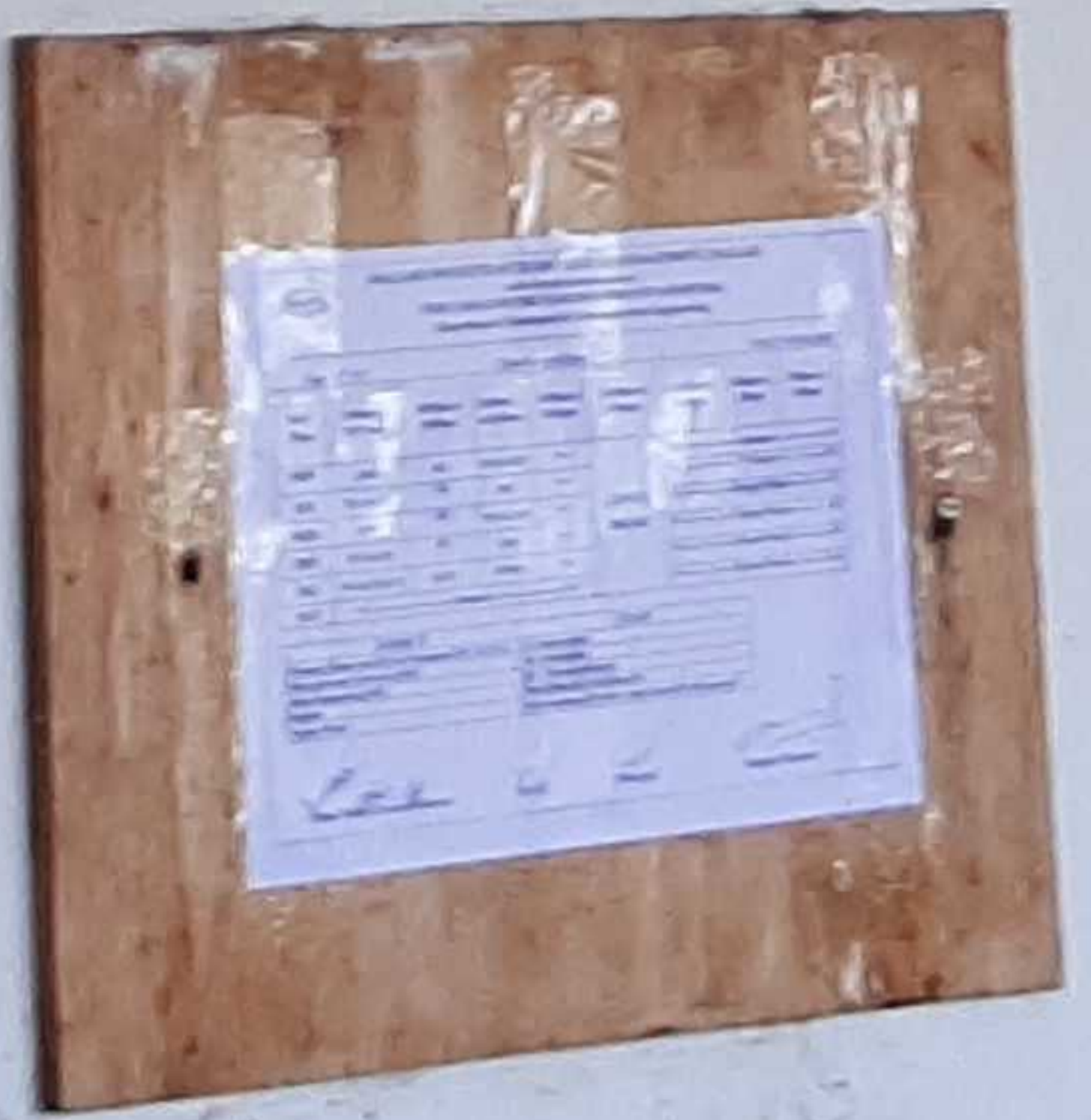
Program Specific Outcomes (PSOs)

- PSO 1 : To Understand the Principles, Processes, Techniques and Design aspects of Electronic Devices, Circuits and Communication Systems.
- PSO 2 : To Apply, Analyze and Design Electronic Circuits, Communication Systems, Embedded Systems by using Higher Engineering Mathematical Foundations, Computational Principles and Network Modeling Skills.
- PSO 3 : To Develop Electronic Hardware and Software Systems for Universal requirements using Sensors, Embedded Controllers, Signal Processors, Analog and Digital Integrated Chips.

Department of Electronics & Communication Engineering

Program Outcomes (POs)

- PO-1: Apply knowledge and skills to design, develop and test a system or component to meet specific requirements.
- PO-2: Identify, formulate, research problems and propose solutions to complex engineering problems.
- PO-3: Design, development of software, hardware and systems to meet specific requirements.
- PO-4: Conduct investigations of complex problems, design and conduct experiments, analyze and interpret data.
- PO-5: Modern Tool Usage: Use of modern tools like CAD, CAE, simulation, and other software for engineering design and analysis.
- PO-6: The Engineer and Society: Understand the societal impact of engineering practice and use of technology.
- PO-7: Environment and Sustainability: Understand the impact of engineering solutions in the context of the environment and sustainability.
- PO-8: Ethics: Apply ethical principles and engineering codes of ethics to engineering practice.
- PO-9: Individual and Team Work: Work effectively as an individual and as a member or leader in a team.
- PO-10: Communication: Communicate effectively in complex engineering contexts with the appropriate use of language, oral, written, graphical, computer graphics, and other means.
- PO-11: Project Management and Finance: Demonstrate knowledge and understanding of project management and financial aspects of engineering practice.
- PO-12: Lifelong Learning: Engage in continuous learning and development to stay current in a rapidly changing technology.



 **Samsung Triple Camera**
Shot with my Galaxy A50



Basavarajeswarl Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (An ISO 9001:2015 Certified Institution)
Department of Electronics & Communication Engineering



INSTITUTION VISION:

To contribute valuable graduates for industry and society through excellence in technical & management education and research.

INSTITUTION MISSION:

- To offer state-of-the-art undergraduate, postgraduate and doctoral programmes.
- To empower the students with Technical, Managerial Skills and professional ethics.
- To collaborate with academia and industries for skill development.

DEPARTMENT VISION:

To be a center of excellence for learning and development of skills.

DEPARTMENT MISSION:

- To equip the graduates with strong foundation to meet the growing challenges.
- To inculcate design & development skills relevant to the industry and research.
- To impart innovative technologies and professional values through teamwork.

Programme Educational Objectives (PEO's):

- PEO 1:** To acquire strong knowledge in Basic Science, Mathematics and ability to apply this knowledge in the relevant fields of E&CE.
- PEO2:** To develop technical competence and uplift research ability to solve real time problems.
- PEO 3:** To obtain professional Excellency through lifelong learning and produce graduates with professional values.

Programme outcomes (POs):
Engineering Graduates will be able to:

- Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design / Development of Solutions:** 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.
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- Project Management and Finance:** 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.
- Lifelong Learning:** 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.

Programme Specific Outcome (PSO's):

- PSO1:** To understand the principles, processes, techniques and design aspects of electronic devices, circuits and communication systems.
- PSO2:** To apply, analyze and design electronic circuits, communication systems, embedded systems by using higher engineering mathematical foundations, computational principles and network modeling skills.
- PSO3:** To develop electronic hardware and software systems for universal requirements using sensors, embedded controllers, signal processors, analog and digital integrated chips.

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 Department of Electronics & Communication Engineering

ADVANCED COMMUNICATION LAB
 P.O. of Electronics & Communication Engineering

LINEAR ICS AND COMMUNICATION LAB
 P.O. of Electronics & Communication Engineering

DO'S & DON'TS IN THE LABORATORY

Do's

- Always check to see that the power switch is OFF before plugging into the outlet.
- Turn instrument or equipment OFF before unplugging from the outlet.
- When unplugging a power cord, pull on the plug, not on the cable.
- When disassembling a circuit, first remove the source of power.
- If there are any damages to equipment hazards, and potential hazards report to the laboratory technician.
- After the lab session, switch off every supply, disconnect and disassemble the equipment setup.
- Turn off the equipment after use.
- Take a note of all the exits in the room, and also take note of the location of the extinguishers in the room for the sake of fire safety.
- Prepare a clear set-up for every experiment. Use colored wires of suitable lengths to conduct experiments.
- Ensure that the temperature in the room stays cool, since there are a lot of machines inside a lab, and these can overheat easily. This is one of the many ways of ensuring computer safety.
- Don't use any equipment adversely. Ensure that the machines are cleaned on a regular basis.

Don'ts

- Do not make alterations to the equipment when the power supply is ON.
- Do not attempt to open any equipment, and do not touch the backside of equipments when they are switched on.
- To maintain safety of the equipment, do not spill water or any other liquid on the equipment.
- Do not touch any exposed wires or records.
- Do not bring any food or drink near the equipment.
- Do not access external devices without scanning them for computer viruses.
- Do not touch any of the circuit boards and power sockets when something is connected to them and switched on.

Handwritten notes and diagrams on a board, including circuit diagrams and text.

Four whiteboards in a row, with a small diagram on the first one. A white container with 'E&CE', 'A+C+LIC', and 'CIW/Box' written on it is in the foreground.

Shot with my Samsung Triple Camera Galaxy A50

BITM BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (An ISO 9001:2015 Certified Institution)
 Department of Electronics & Communication Engineering

INSTITUTION VISION
 To contribute valuable graduates for industry and society through excellence in technical & management education and research.

INSTITUTION MISSION

- To offer state-of-the-art undergraduate, postgraduate and doctoral programmes.
- To empower the students with Technical, Managerial Skills and professional ethics.
- To collaborate with academia and industries for skill development.

Programme Educational Objectives (PEO's)

PEO 1: To acquire strong knowledge in Basic Science, Mathematics and ability to apply this knowledge in the relevant fields of E&CE.

PEO 2: To develop technical competence and uplift research ability to solve real time problems.

PEO 3: To obtain professional Excellency through lifelong learning and produce graduates with professional values.

DEPARTMENT VISION
 To be a center of excellence for learning and development of skills.

DEPARTMENT MISSION

- To equip the graduates with strong foundation to meet the growing challenges.
- To inculcate design & development skills relevant to the industry and research.
- To impart innovative technologies and professional values through teamwork.

Department of Electronics & Communication Engineering

WELCOME (2016)

The Department of Electronics & Communication Engineering at Ballari Institute of Technology & Management is pleased to welcome you to our department. We are committed to providing you with a high-quality education and training that will prepare you for a successful career in the industry.

Programme Specific Outcomes (PSOs)

PSO 1: Graduates will be able to apply their knowledge of basic science and mathematics to solve real-time problems.

PSO 2: Graduates will be able to design and develop electronic systems and components.

PSO 3: Graduates will be able to work in a team to complete a project or assignment.

SAFETY AND POINTS TO REMEMBER IN THE LABORATORY

1. The power switch is OFF before plugging into the outlet. Turn OFF before unplugging from the outlet.

2. Do not touch the backside of the power supply.

3. Do not touch the live wires of the power supply.

4. Do not touch the live wires of the power supply.

5. Do not touch the live wires of the power supply.

6. Do not touch the live wires of the power supply.


7. Do not touch the live wires of the power supply.

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10. Do not touch the live wires of the power supply.

 **Samsung Triple Camera**
 Shot with my Galaxy A50


BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT, BALLARI
 VISION OF THE INSTITUTION:
 To Contribute Valuable Graduates for Industry and Society through Excellence in Technical & Management Education and Research.
 MISSION OF THE INSTITUTION:
 • To Offer State-of-the-Art Undergraduate, Postgraduate and Doctoral Programmes.
 • To Empower the Students with Technical, Managerial Skills and Professional Ethics.
 • To Collaborate with Academia and Industries for Skill Development.
 ಸಂಸ್ಥೆಯ ದೃಷ್ಟಿ:
 ತಾಂತ್ರಿಕ ಮತ್ತು ನಿರ್ವಹಣಾ ರಂಗದಲ್ಲಿ ಅತ್ಯುತ್ತಮ ಶಿಕ್ಷಣ ನೀಡಿ ಉದ್ಯಮ ರಂಗಕ್ಕೆ ಹಾಗೂ ಸಮಾಜಕ್ಕೆ ಮೌಲ್ಯಯುತ ಪರಿವೀರರನ್ನು ನೀಡುವುದು.
 ದೂರ ದೃಷ್ಟಿ:
 • ಉತ್ತಮ ರೀತಿಯ ಪ್ಲಾಸ್ಟಿಕ್, ಪ್ಲಾಸ್ಟಿಕ್‌ಗಳ ಹಾಗೂ ಹಾಕೋರಲ್ ಅಧ್ಯಯನ ಯೋಜನೆಗಳು.
 • ಶಿಕ್ಷಕರಿಗಾಗಿ ತಾಂತ್ರಿಕ ಶಿಕ್ಷಣ, ನಿರ್ವಹಣಾ ಕೌಶಲ ಹಾಗೂ ವೃತ್ತಿಪರತೆಗಳಲ್ಲಿ ಐಕ್ಯಗೊಳಿಸುವುದು.
 • ಉದ್ಯಮ ಮತ್ತು ಉದ್ಯಮಗಳ ಪರಿಷ್ಕರಣೆಗೆ ಸ್ಪಷ್ಟವಾದ ಕೌಶಲ್ಯ ಹೆಚ್ಚಿಸುವುದು.

SECOND FLOOR

VGST & COMMUNICATION LAB →
ANALOG LAB & DIGITAL LAB →
VLSI / COMPUTER NETWORKS LAB ←
HDL / ARM & DSP / MP LAB ←


Department of Electronics & Communication Engineering
VISION
 To be a Centre of Excellence for Learning and Development of Skills.
MISSION
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M 2 : To Inculcate Design and Development Skills Relevant to the Industry and Research.
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 Shot with my Galaxy A50



Basavarajeswari Group of Institutions
BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (An ISO 9001:2015 Certified Institution)
Department of Electronics & Communication Engineering

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- To empower the students with Technical, Managerial Skills and professional ethics.
- To collaborate with academia and industries for skill development.

DEPARTMENT VISION:

To be a center of excellence for learning and development of skills.

DEPARTMENT MISSION:

- To equip the graduates with strong foundation to meet the growing challenges.
- To inculcate design & development skills relevant to the industry and research.
- To impart innovative technologies and professional values through teamwork.

Programme Educational Objectives (PEO's):

- PEO 1: To acquire strong knowledge in Basic Science, Mathematics and ability to apply this knowledge in the relevant fields of E&CE.
- PEO 2: To develop technical competence and uplift research ability to solve real time problems.
- PEO 3: To obtain professional Excellency through lifelong learning and produce graduates with professional values.

Programme outcomes (POs):
 Engineering Graduates will be able to:

- Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization in the solution of complex engineering problems.
- Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design / Development of Solutions:** 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 consideration.
- Conduct Investigations of Complex Problems:** 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.
- Modern Tool Usage:** 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.
- The Engineer and Society:** 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.

- Communication and Sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
- Team:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- Leadership and Team Work:** Function effectively as an individual and as a member of a leader in diverse teams and in multidisciplinary settings.
- Communication:** 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.
- Project Management and Finance:** Assessments knowledge and understanding of the engineering and management principles and apply them to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- Lifelong Learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broader context of technological change.

Programme Specific Outcomes (PSOs):

- PSO 1: To understand the principles, processes, techniques and design methods of electronic devices and communication system.
- PSO 2: To apply, analyze and design electronic devices, communication systems, embedded systems by using higher engineering mathematical foundation, communication principles and network modeling skills.
- PSO 3: To develop electronic hardware and software systems by utilizing requirements analysis, embedded controllers, signal processing, coding and digital logic design tool.

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Business School Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



ISO 9001:2015 Certified Institution

Department of Chemistry

ENGINEERING CHEMISTRY LAB
(18CHEL16/26)

Course Outcomes

Upon completion of this course, students will be able to:

CO No.	DESCRIPTION
CO 1	DEMONSTRATE THE KNOWLEDGE OF BASICS OF LABORATORY SKILLS IN CHEMISTRY.
CO 2	IDENTIFY METHODS OF ANALYSING MATERIALS, INSTRUMENTS TO SOLVE DOMESTIC, INDUSTRIAL AND ENGINEERING PROBLEMS.
CO 3	CONDUCT EXPERIMENTS, INTERPRETE THE DATA OF THE EXPERIMENT AND THE RESULTS OF EXPERIMENTS.
CO 4	APPLY INSTRUMENTS FOR DIFFERENT CHEMICAL AND ANALYTICAL APPLICATIONS.
CO 5	PREDICT QUALITY PARAMETERS FOR QUALITY CONTROL AND QUALITY ASSURANCE.



Department of Chemistry
ENGINEERING CHEMISTRY

(18CHE12/22)

Course Outcomes

Upon completion of this course, students will be able to:

CO No.	DESCRIPTION
CO 1	DEMONSTRATE THE USE OF FREE ENERGY IN EQUILIBRIA, RATIONALIZE BULK PROPERTIES AND PROCESSES USING THERMODYNAMIC CONSIDERATIONS, ELECTROCHEMICAL ENERGY SYSTEMS.
CO 2	IDENTIFY THE CAUSES & EFFECTS OF CORROSION OF METALS AND CONTROL OF CORROSION. MODIFY THE SURFACE PROPERTIES OF METALS TO DEVELOP RESISTANCE TO CORROSION, WEAR, TEAR, IMPACT ETC. BY ELECTROPLATING AND ELECTROLESS PLATING.
CO 3	EXPLAIN PRODUCTION AND CONSUMPTION OF ENERGY FOR INDUSTRIALISATION OF COUNTRY AND LIVING STANDARDS OF PEOPLE. CONSTRUCT ELECTROCHEMICAL AND CONCENTRATION CELLS, CLASSICAL, MODERN BATTERIES AND FUEL CELLS. UTILISE OF SOLAR ENERGY FOR DIFFERENT USEFUL FORMS OF ENERGY.
CO 4	UNDERSTAND ENVIRONMENTAL POLLUTION AND APPLY WASTE MANAGEMENT AND WATER CHEMISTRY.
CO 5	APPLY DIFFERENT TECHNIQUES OF INSTRUMENTAL METHODS OF ANALYSIS. FUNDAMENTAL PRINCIPLES OF NANOMATERIALS.


DALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 (An ISO 9001:2015 Certified Institution)
 Department of Mathematics

PROGRAM OUTCOMES

PO Number	PROGRAM OUTCOME DESCRIPTION
PO 1	Apply the fundamental principles of calculus, differential equations, vector calculus, and matrix algebra to solve problems in the fields of engineering and science.
PO 2	Apply the principles of probability, statistics, and combinatorics to solve problems in the fields of engineering and science.
PO 3	Apply the principles of linear algebra, vector calculus, and differential equations to solve problems in the fields of engineering and science.
PO 4	Apply the principles of differential equations and vector calculus to solve problems in the fields of engineering and science.
PO 5	Apply the principles of probability, statistics, and combinatorics to solve problems in the fields of engineering and science.
PO 6	Apply the principles of linear algebra, vector calculus, and differential equations to solve problems in the fields of engineering and science.
PO 7	Apply the principles of differential equations and vector calculus to solve problems in the fields of engineering and science.
PO 8	Apply the principles of probability, statistics, and combinatorics to solve problems in the fields of engineering and science.
PO 9	Apply the principles of linear algebra, vector calculus, and differential equations to solve problems in the fields of engineering and science.
PO 10	Apply the principles of differential equations and vector calculus to solve problems in the fields of engineering and science.
PO 11	Apply the principles of probability, statistics, and combinatorics to solve problems in the fields of engineering and science.
PO 12	Apply the principles of linear algebra, vector calculus, and differential equations to solve problems in the fields of engineering and science.
PO 13	Apply the principles of differential equations and vector calculus to solve problems in the fields of engineering and science.
PO 14	Apply the principles of probability, statistics, and combinatorics to solve problems in the fields of engineering and science.
PO 15	Apply the principles of linear algebra, vector calculus, and differential equations to solve problems in the fields of engineering and science.

DALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
 Vision
 To contribute valuable programs for industry and society through excellence in technical & management education and research.

Mission
 To offer state-of-the-art, state-of-the-art, undergraduate and doctoral programs, to empower the students with technical, managerial skills and professional ethics, to collaborate with academia and industries for skill development.

Department of Mathematics
 Vision
 To provide quality education to the students and to develop the students with technical, managerial skills and professional ethics, to collaborate with academia and industries for skill development.

Mission
 To provide quality education to the students and to develop the students with technical, managerial skills and professional ethics, to collaborate with academia and industries for skill development.

Temperature: 37.32°C

Accuracy: 20.859

time: 2020-04-27 10:46:12

longitude: 76.8501223

latitude: 15.1671906

null,Ballari,Karnataka

TECHNOLOGY & MANAGEMENT
Department of Mathematics
COURSE OUTCOMES
COURSE: ENGINEERING MATHEMATICS-III (17MAT31)
 On completion of this course, students will be able to:

CO301.1	Find Fourier series of Periodic functions.
CO301.2	Evaluate Fourier Transform, solve difference equations using Z-Transform.
CO301.3	Apply statistical and numerical methods to fit the given data into appropriate curves and to solve algebraic, transcendental equations.
CO301.4	Apply various numerical techniques to interpolate, evaluate definite integrals.
CO301.5	Use Curl and Divergence in vector integration, to verify Green's, Stroke's, Divergence theorems and to evaluate Geodesics.

COURSE OUTCOMES
COURSE: ENGINEERING MATHEMATICS-IV (17MAT41)
 On completion of this course, students will be able to:

CO401.1	Apply various Numerical Methods to solve first order differential equations.
CO401.2	Employ Bessel's and Legendre's differential equations to find the series solution.
CO401.3	Apply the Cauchy-Riemann equations to find the analyticity of a function and determine poles and residues.
CO401.4	To solve probabilistic problems of repeated nature, the probability of joint probability distribution.
CO401.5	To test the samples and use the knowledge of Markov chains in attempting engineering problems for feasible random events.

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BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT
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Department of Mathematics

COURSE OUTCOMES
COURSE: ENGINEERING MATHEMATICS-III (17MAT31)
 On completion of this course, students will be able to:

CO301.1	Find Fourier series of Periodic functions.
CO301.2	Evaluate Fourier Transform, solve difference equations using Z-Transform.
CO301.3	Apply statistical and numerical methods to fit the given data into appropriate curves and to solve algebraic, transcendental equations.
CO301.4	Apply various numerical techniques to interpolate, evaluate definite integrals.
CO301.5	Use Curl and Divergence in vector integration, to verify Green's, Stroke's, Divergence theorems and to evaluate Geodesics.

COURSE OUTCOMES
COURSE: ENGINEERING MATHEMATICS-IV (17MAT41)
 On completion of this course, students will be able to:

CO401.1	Apply various Numerical Methods to solve first order differential equations.
CO401.2	Employ Bessel's and Legendre's differential equations to find the series solution.
CO401.3	Apply the Cauchy-Riemann equations to find the analyticity of a function and determine poles and residues.
CO401.4	To solve probabilistic problems of repeated nature, the probability of joint probability distribution.
CO401.5	To test the samples and use the knowledge of Markov chains in attempting engineering problems for feasible random events.

Temperature: 37.32°C


Accuracy: 18.714

Time: 2020-04-27 10:46:49

longitude: 76.8501184

latitude: 15.1671983

null,Ballari,Karnataka


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Department of Mathematics

COURSE OUTCOMES


COURSE: CALCULUS AND LINEAR ALGEBRA (18MAT11)
(On completion of this course, students will be able to)

CO101.1	Apply the knowledge of calculus to solve problems related to polar curves and its applications to determine the bending of a curve
CO101.2	Learn the notion of partial differentiation to calculate the rate of change of multivariate functions and solve problems related to composite functions and Jacobians
CO101.3	Apply the concept of change the order of integration and variables to evaluate multiple integrals and their usage in computing the area and the volumes.
CO101.4	Solve first order linear/nonlinear differential equations analytically using standard methods.
CO101.5	Make use of matrix theory for solving system of linear equations and compute eigen values and eigen vectors required for matrix diagonalization process.

COURSE OUTCOMES

COURSE: ADVANCED CALCULUS AND VECTORIAL METHODS (18MAT21)
(On completion of this course, students will be able to)

CO201.1	Illustrate the applications of multivariate calculus to understand the solenoidal and irrotational vectors and exhibit the inter dependence of line, surface and volume integrals.
CO201.2	Demonstrate various physical models through higher order differential equations and solve such linear ordinary differential equations.
CO201.3	Construct a variety of partial differential equations and solution by exact methods/method of separation of variables.
CO201.4	Explain the applications of infinity series and obtain series solution of ordinary differential equations.
CO201.5	Apply the knowledge of numerical methods in the modeling of various physical and engineering phenomena.


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Department of Mathematics

COURSE OUTCOMES

COURSE: ENGINEERING MATHEMATICS (18MAT01)
(On completion of this course, students will be able to)

CO301.1	Find Fourier series
CO301.2	Evaluate Fourier series using Z-Transform
CO301.3	Apply statistical data into approximation of transcendental equations
CO301.4	Apply various methods to evaluate definite integrals
CO301.5	Use Curl and Div, Green's, Stoke's and Geodesics.

COURSE OUTCOMES

COURSE: ADVANCED CALCULUS AND VECTORIAL METHODS (18MAT21)
(On completion of this course, students will be able to)

CO401.1	Apply various methods to solve differential equations
CO401.2	Employ Bessel's functions to find the series solutions
CO401.3	Apply the Cauchy's theorem to a function and determine its value
CO401.4	To solve probability problems (the probability of) events
CO401.5	To test the sample mean and variance of random events.

Temperature: 37.32°C
 Accuracy: 17.908
 Time: 2020-04-27 10:47:17
 Longitude: 76.8501199
 Latitude: 15.1672036
 null,Ballari,Karnataka

Varájeswari Group of Institutions

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(An ISO 9001:2015 Certified Institution)

Department of Physics



ENGINEERING PHYSICS

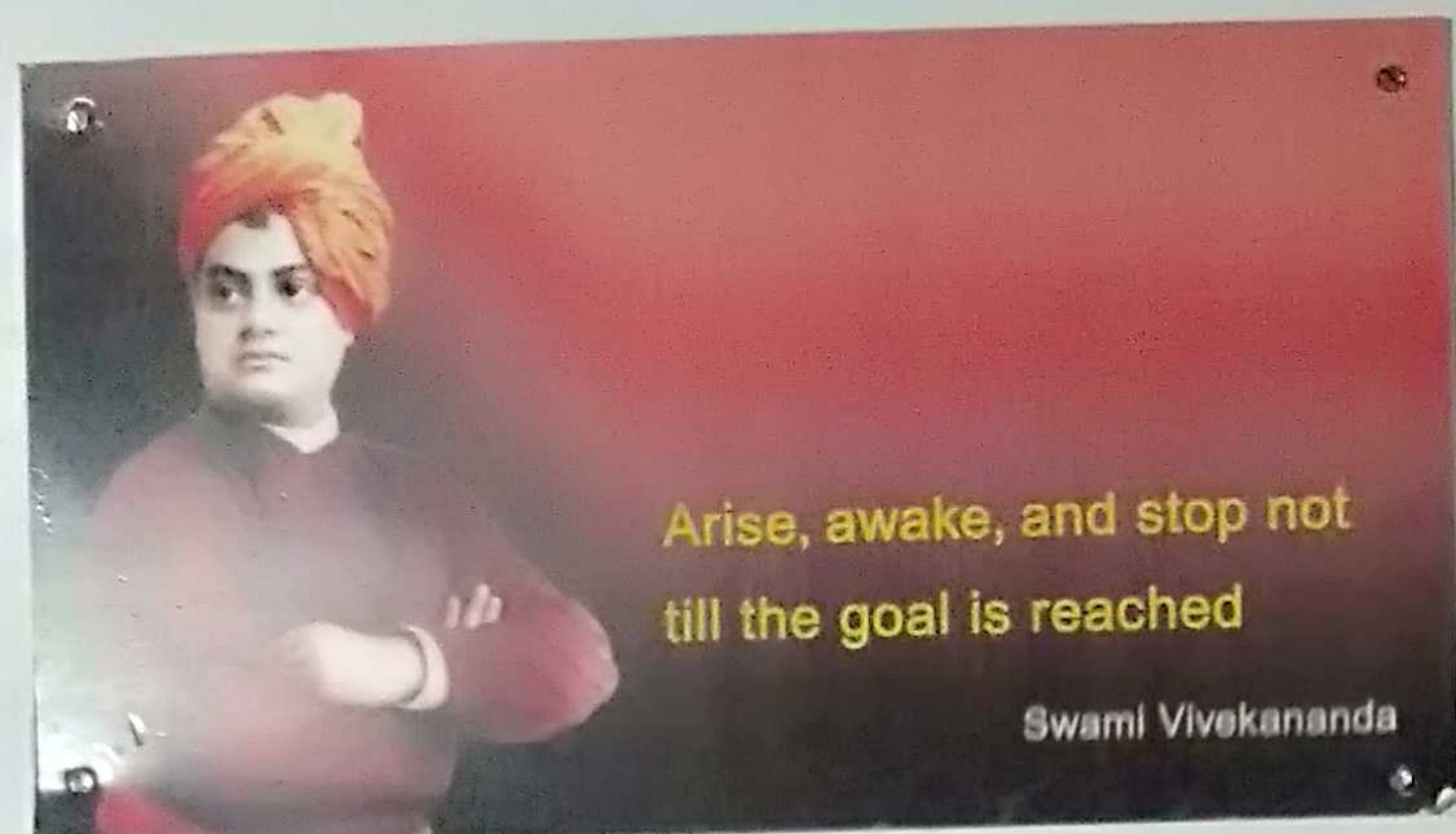
(18PHY12/22)

Course Outcomes

ON COMPLETION OF THIS COURSE, STUDENTS WILL BE ABLE TO:

DESCRIPTION

- | | DESCRIPTION |
|---|---|
| | UNDERSTAND VARIOUS TYPES OF OSCILLATIONS AND THEIR IMPLICATION, THE ROLE OF SHOCK WAVES IN VARIOUS FIELDS. |
| | RECOGNIZE THE ELASTIC PROPERTIES OF MATERIALS FOR ENGINEERING APPLICATION. |
| | REALIZE THE INTER RELATIONS BETWEEN TIME VARYING ELECTRIC FIELD AND MAGNETIC FIELD, THE TRANSVERSE NATURE OF ELECTROMAGNETIC WAVES AND THEIR ROLE IN OPTICAL FIBER COMMUNICATION. |
| | COMPUTE EIGEN VALUES, EIGEN FUNCTIONS, MOMENTUM OF ATOMIC AND SUB ATOMIC PARTICLES USING TIME 1-D SCHRÖDINGER'S WAVE EQUATION. APPREHEND THEORETICAL BACKGROUND OF LASER, CONSTRUCTION AND WORKING OF DIFFERENT TYPES OF LASER AND ITS APPLICATION. |
| 5 | UNDERSTAND VARIOUS ELECTRICAL AND THERMAL PROPERTIES OF MATERIALS LIKE CONDUCTORS, SEMICONDUCTORS AND DIELECTRICS USING DIFFERENT THEORETICAL MODELS. |



Basavarajeswari Group of Institutions



BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT



(An ISO 9001:2015 Certified Institution)

Department of Physics

ENGINEERING PHYSICS LAB

(18PHYL16/26)

Course Outcomes

UPON COMPLETION OF THIS COURSE, STUDENTS WILL BE ABLE TO:

CO NO	DESCRIPTION
CO1	APPREHEND THE CONCEPTS OF INTERFERENCE OF LIGHT, DIFFRACTION OF LIGHT, FERMI ENERGY AND MAGNETIC EFFECT OF CURRENT.
CO2	UNDERSTAND PRINCIPLE OF OPERATION OF OPTICAL FIBER AND SEMICONDUCTOR DEVICE SUCH AS PHOTO DIODE AND TRANSISTOR USING SIMPLE CIRCUIT.
CO3	DETERMINE ELASTIC MODULI AND MOMENT OF INERTIA OF GIVEN MATERIAL WITH THE HELP OF SUGGESTED PROCEDURES.
CO4	RECOGNIZE THE RESONANCE CONCEPT AND ITS PRACTICAL APPLICATIONS.
CO5	UNDERSTAND THE IMPORTANCE OF MEASUREMENT PROCEDURES, HONEST RECORDING AND REPRESENTING THE DATA, REPRODUCTION OF FINAL RESULTS.

Department Profile

Year of Establishment of the College	1997 Void File No. 770-53-224 (E) / ET / 96
Year of Establishment of the Department	1997
Starting intake	45
Increased In Intake from:	
<input type="checkbox"/> 45 to 60	1999
<input type="checkbox"/> 60 to 120	2011
<input type="checkbox"/> 120 to 180	2014
First Accreditation	Accredited for 3 Years from 16.09.2011 to 15.09
Approved By	A .I. C.T. E. New Delhi
Affiliated to	Visvesvaraya Technological University, Belgavi - Karnataka





Outcome Based Education

has become the permanent signatory member of t
on 13 June 2014.

as started implementing OBE in higher technical educat
dergraduate programmes.

ational Board of Accreditation for promoting inte

ards for technical education as started accre

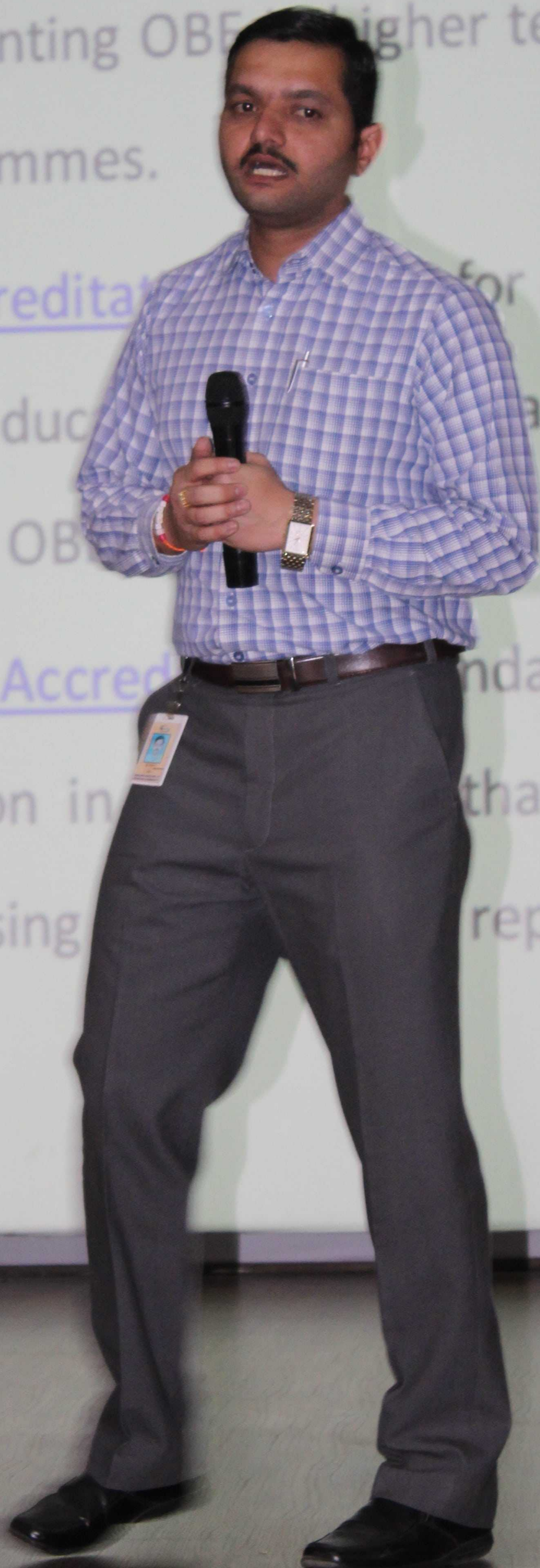
mmes running with OBE

ational Board of Accreditation mandates establishing

nes-based education in that offer Engine

mes analysis and using reports to find ga

uous improvement.





What is Outcome Based Education [OBE]

How is it measured?

The OBE model measures the progress of the graduate in three parameters, which are

- ❖ Program Educational Objectives (PEO)
- ❖ Program Outcomes (PO)
- ❖ Course Outcomes (CO)

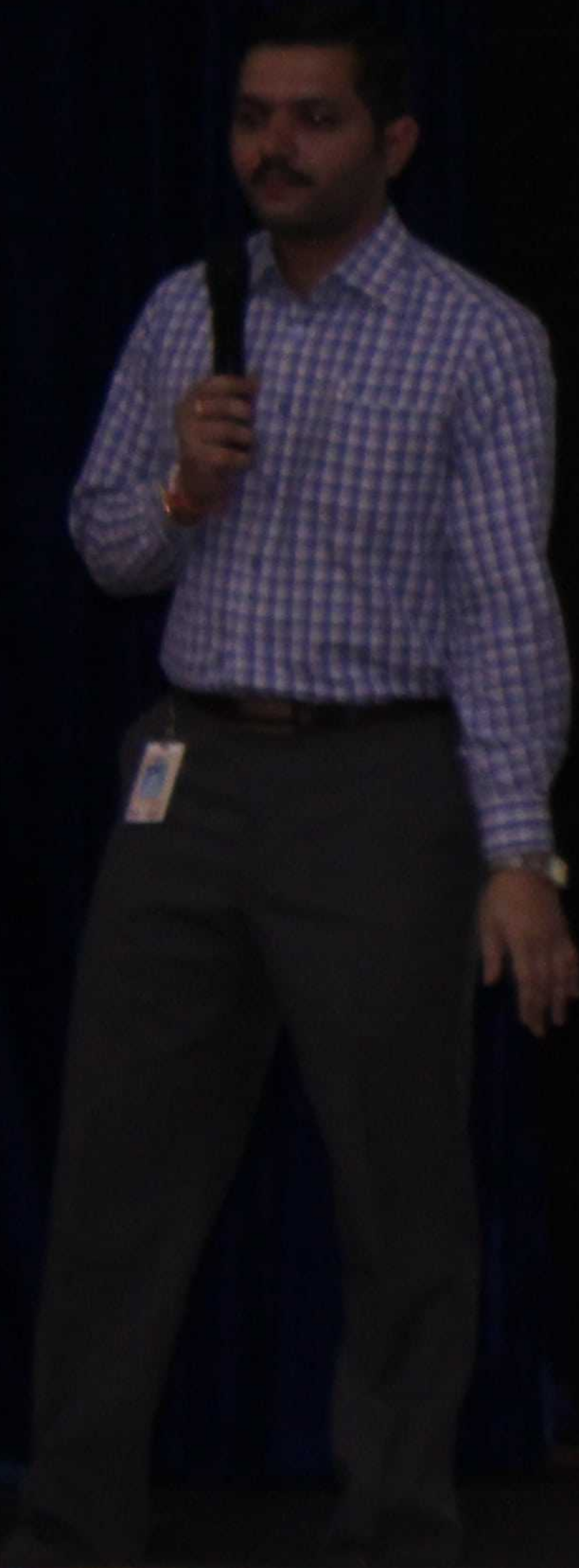
PEOs are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve.

PEO's are measured 4-5 years after graduation.

Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation.

They must reflect the **12 Graduate attributes** as described by NBA for undergraduate engineering programs.

Course outcomes are the measurable parameters which evaluates each students performance for each course that the student undertakes in every semester.



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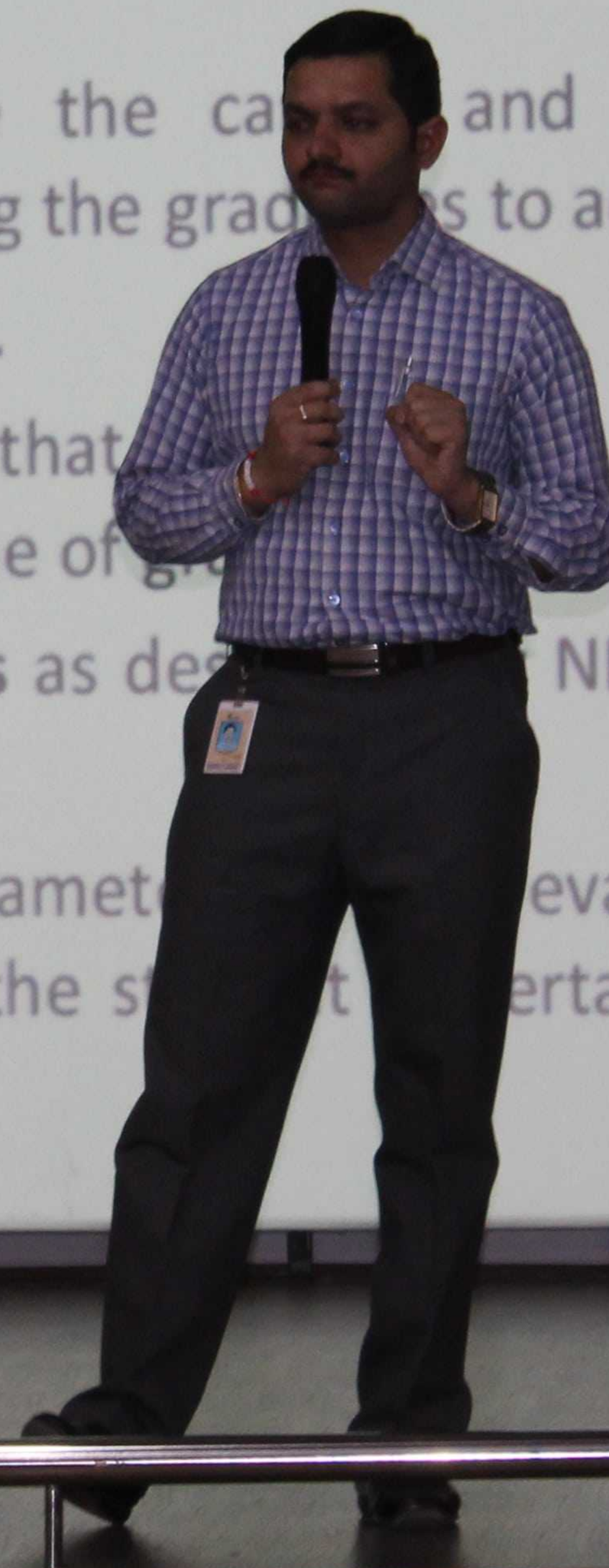
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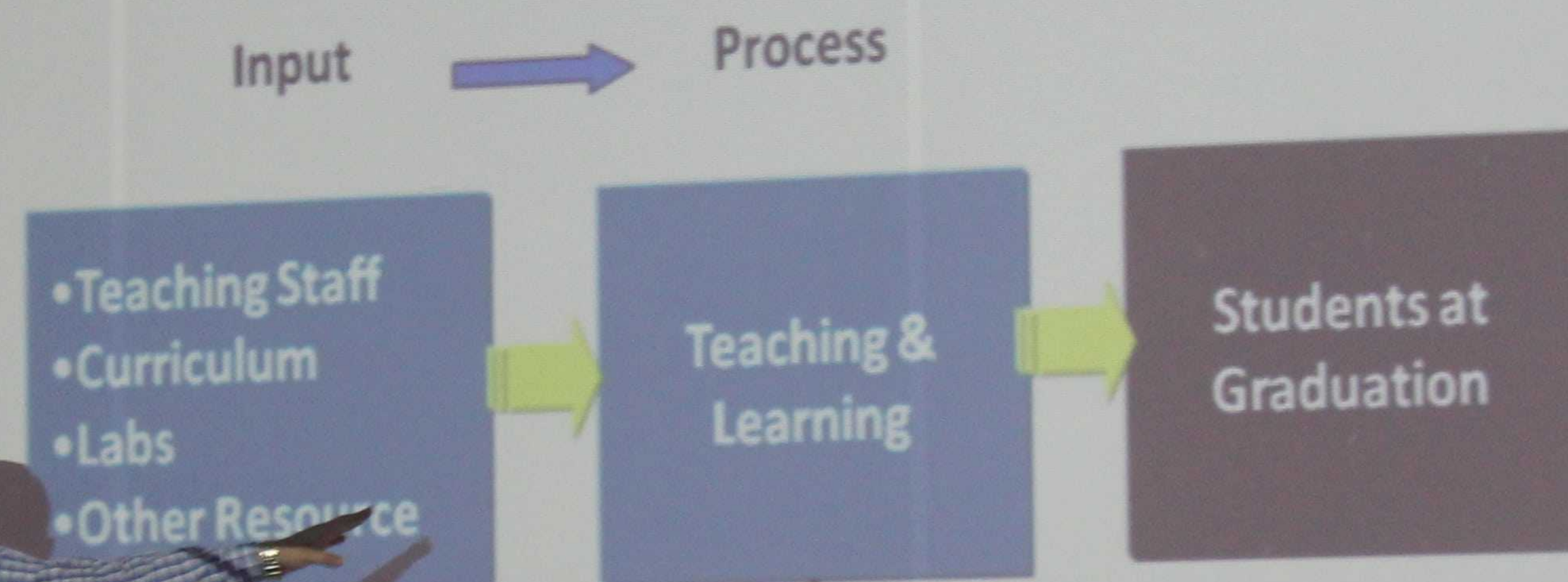
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OBE Versus Traditional Education Process

Traditional education process focuses on the inputs.



- Assessment mainly via exam, test, assignments.
- Quality control from teaching evaluation.

Outcome-Based Education Versus Traditional Education Process

- OBE shifts from measuring input and process to **include measuring the output (outcome)**

