Yashoda Shiskshan Prsarak Mandal's



Yashoda Technical Campus

Approved by AICTE Delhi/ Govt. of Maharashtra/ Accredited by NAAC NH-4, Wadhe, Satara 415011
Email: principalengg_ytc@yes.edu.in Call: O2162-271238/39 Mob. 9172220775



Faculty of Engineering

Department of Basic Sciences & Humanities

Program Outcomes (POs)

Engineering Graduate 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.
- 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. <u>Design/development of solutions</u>: Design solutions for complex engineering problems and design system components or processes that meet the specific needs with appropriate consideration for the public health and safety, and the cultural, social, and environmental considerations.
- 4. <u>Conduct investigations of complex problems</u>: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- 5. <u>Modern tool usage</u>: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6. <u>The engineer and society</u>: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- 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. <u>Individual and team work</u>: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. <u>Communication:</u> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 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. <u>Life-long learning</u>: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Vision:

 To be an excellent department of the institute promoting academic as well as holistic development of students and encouraging their creative potential.

- M1: To develop technical and communicative skills to make the students industry ready.
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Faculty of Engineering

| Subject- Eng | ineering Mathematics-II | Subject Code- BTBS201 | | | | | | | | |
|--------------|--|--|--|--|--|--|--|--|--|--|
| CO | Statement | | | | | | | | | |
| BTBS201_1 | Discuss the need and use of complex variables to find roots, to separate complex quantities and to establish relation between circular and hyperbolic functions. | | | | | | | | | |
| BTBS201_2 | Solve first and higher order differential equations and a in electric and mechanical systems. | apply them as a mathematical modelling | | | | | | | | |
| BTBS201_3 | Determine Fourier series representation of periodic fur | actions over different intervals. | | | | | | | | |
| BTBS201_4 | Demonstrate the concept of vector differentiation and i meaning of gradient, divergence &curl in various engineers. | | | | | | | | | |
| BTBS201_5 | Apply the principles of vector integration to transform to volume integral &vice versa using Green's, Stoke's | | | | | | | | | |

CO-PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTBS201_1 | 3 | 2 | 1 | 1 | | | | | | | 1 | 1 |
| BTBS201-2 | 3 | 2 | 1 | 2 | | | | | | | 1 | 1 |
| BTBS201-3 | 2 | 1 | 1 | 1 | | | | | | | 1 | 1 |
| BTBS201-4 | 2 | 2 | 2 | 2 | | | | | | | 1 | 1 |
| BTBS201-5 | 3 | 1 | 1 | 1 | | | | | | | 1 | 1 |

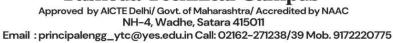
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Faculty of Engineering

| Subject- Eng | ineering Chemistry | Subject Code- BTBS202 | | | | | |
|--------------|--|---------------------------------------|--|--|--|--|--|
| CO | Statement | | | | | | |
| BTBS202_1 | Demonstrate knowledge of chemistry in technical fields. | | | | | | |
| BTBS202_2 | Bring adaptability to new developments in Engineering Chemistry and to acquire the skills required to become a perfect engineer. | | | | | | |
| BTBS202_3 | Develop the importance of water in industrial and dom | estic usage. | | | | | |
| BTBS202_4 | Identify the concepts of Chemistry to lay the ground wengineering fields. | ork for subsequent studies in various | | | | | |
| BTBS202 5 | Examine a fuel and suggest alternative fuels. | | | | | | |

CO-PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTBS202_1 | 2 | | 1 | | | 2 | 2 | | | | | 2 |
| BTBS202-2 | 2 | | | | | 2 | 2 | | | | | 1 |
| BTBS202-3 | 2 | | 1 | | | 2 | 2 | | | | | 2 |
| BTBS202-4 | 2 | | 1 | | | 2 | 2 | | | | | 2 |
| BTBS202-5 | 2 | | 1 | | | 2 | 2 | | | | | 2 |

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Faculty of Engineering

| Subject- Eng | ineering Mechanics | Subject Code- BTES203 |
|--------------|--|-----------------------------------|
| CO | Statement | |
| BTES203_1 | Apply fundamental Laws of Engineering Mechanics | |
| BTES203_2 | Apply Conditions of static equilibrium to analyze give | n force system |
| BTES203_3 | Compute Centre of gravity and Moment of Inertia of p | lane surfaces |
| BTES203_4 | Compute the motion characteristics of a body/particle : Motion | for a Rectilinear and Curvilinear |
| BTES203_5 | Know and discuss relation between force and motion c | haracteristics |

CO-PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTES203_1 | 3 | 3 | | | | | | 2 | | | | 3 |
| BTES203_2 | 3 | 3 | | | | | | 2 | | | | 3 |
| BTES203_3 | 3 | 3 | | | | | | 2 | | | | 3 |
| BTES203_4 | 3 | 3 | | | | | | 2 | | | | 3 |
| BTES203_5 | 3 | 3 | | | | | | 2 | | | | 3 |

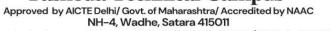
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Faculty of Engineering

| Subject- Con | nputer Programming in C | Subject Code- BTES204 | | | | | | | |
|--------------|--|---|--|--|--|--|--|--|--|
| CO | Statement | | | | | | | | |
| BTES204_1 | Gain a broad perspective about the uses of computers in engineering industry and C Programming. | | | | | | | | |
| BTES204_2 | Develop the basic concept of algorithm, algorithmic th | inking and flowchart. | | | | | | | |
| BTES204_3 | Apply the use of C programming language to impleme the basic concepts and terminology of programming in | nt various algorithms and develops general. | | | | | | | |
| BTES204_4 | Use the more advanced features of the C language. | | | | | | | | |
| BTES204_5 | Identify tasks in which the numerical techniques learn write programs and hence use computers effectively to | ** | | | | | | | |

CO-PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTES204_1 | 3 | 3 | 3 | 3 | 2 | 1 | | | | | 1 | |
| BTES204_2 | 3 | 3 | 3 | | | | | | | | | |
| BTES204_3 | 3 | 3 | 2 | | | | | | | | | |
| BTES204_4 | 3 | 3 | 3 | 1 | | | | | | | | |
| BTES204_5 | 3 | 2 | 3 | | | | | | | | | |

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| Subject- Basi | ic Electrical and Electronics Engineering | Subject Code- BTES206 | | | | | | | | | |
|---------------|---|--|--|--|--|--|--|--|--|--|--|
| CO | Statement | | | | | | | | | | |
| BTES206_1 | Discuss the various types of electrical components wit its utilization. | h uses, different energy resources and | | | | | | | | | |
| BTES206_2 | Discuss the various measuring, storage devises and pro- | otection systems used. | | | | | | | | | |
| BTES206 3 | Understand the basics of Semiconductor Diode, device | es its Characteristics & Applications | | | | | | | | | |

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| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTES206_1 | 2 | 2 | 1 | 1 | 1 | | 1 | | | | | |
| BTES206_2 | 2 | 2 | 1 | 1 | 1 | | 1 | | | | | |
| BTES206_3 | 1 | 1 | 1 | | | | | | | | | |

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Faculty of Engineering

| Subject- Engin | neering Chemistry Lab | Subject Code- BTBS207L |
|----------------|---|---------------------------------|
| CO | Statement | |
| BTBS207L_1 | To Apply basic techniques used in chemistry laborate analyses/purification. | ory for small/large scale water |
| BTBS207L_2 | To Estimate the ions/metal ions present in domestic | /industry waste water. |
| BTBS207L_3 | To Utilize the fundamental laboratory techniques for | r analyses such as titrations. |
| BTBS207L_4 | To Analyze and gain experimental skills. | |

CO-PO Mapping

| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO 11 | PO 12 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|----------|
| BTBS207L_1 | | 2 | | | | 2 | 2 | | | | | 2 |
| BTBS207L_2 | | 2 | | | | 2 | 2 | | | | | 2 |
| BTBS207L_3 | | 1 | | | | 2 | 2 | | | | | 2 |
| BTBS207L_4 | | 1 | | | | 2 | 1 | | | | | 2 |

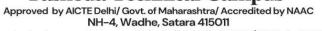
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Faculty of Engineering

| Subject- Engin | eering Mechanics Lab | Subject Code- BTES208L | | | | | | |
|----------------|---|------------------------|--|--|--|--|--|--|
| CO | Statement | | | | | | | |
| BTES208L_1 | Study and Apply basic laws of Engineering Mechanics to given force system. | | | | | | | |
| BTES208L_2 | Study and Apply analytical and graphical conditions of equilibrium to given force | | | | | | | |
| | system. | | | | | | | |
| BTES208L_3 | Study and apply concept of friction. | | | | | | | |
| BTES208L 4 | Study and find basic parameters of simple lifting machines. | | | | | | | |

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|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|----------|----------|
| BTES208L_1 | 3 | 2 | | | | | | 2 | 2 | | | 3 |
| BTES208L_2 | 3 | 2 | | | | | | 2 | 2 | | | 3 |
| BTES208L_3 | 3 | 2 | | | | | | 2 | 2 | | | 3 |
| BTES208L_4 | 3 | 2 | | | | | | 2 | 2 | | | 3 |

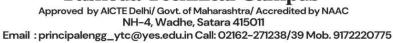
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Faculty of Engineering

| Subject- Wor | kshop Practices | Subject Code- BTES205 | | | | | | | |
|--------------|--|-----------------------|--|--|--|--|--|--|--|
| CO | Statement | | | | | | | | |
| BTES205_1 | To understand and perform various operations on carpentry job | | | | | | | | |
| BTES205_2 | To perform welding job operation | | | | | | | | |
| BTES205_3 | Introduction and assembly of plumbing with help of its components | | | | | | | | |
| BTES205_4 | To understand and assembly of fitting job | | | | | | | | |
| BTES205_5 | To understand and perform various operations on she | et metal job | | | | | | | |
| BTES205 6 | Introduction to lathe machine and to perform simple operations on it | | | | | | | | |

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|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTES205_1 | 2 | 2 | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |
| BTES205_2 | 2 | 2 | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |
| BTES205_3 | 2 | 2 | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |
| BTES205_4 | 2 | 2 | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |
| BTES205_5 | 2 | 2 | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |
| BTES205_6 | 2 | | 2 | 1 | 3 | 2 | | | 2 | 2 | | 2 |

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| Subject- Semina | ır | Subject Code- BTES210S | | | | | |
|-----------------|--|------------------------|--|--|--|--|--|
| CO | Statement | | | | | | |
| BTES210S_1 | Identify and Analyse recent topics of any domain | | | | | | |
| BTES210S_2 | Enhance technical writing skills | | | | | | |
| BTES210S_3 | Identify an engineering problem, analyze it and propose a work plan to solve it. | | | | | | |
| BTES210S_4 | Communicate with professional technical presentation skills and Apply modern | | | | | | |
| _ | documentation tools to write the report | | | | | | |

CO-PO Mapping

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|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|-------|
| BTES210S_1 | | | | | | | | | | 1 | | |
| BTES210S_2 | | | | | | | | | | 2 | | 2 |
| BTES210S_3 | 2 | | | | | | 2 | 2 | | | | |
| BTES210S_4 | | | | | | | | | | 3 | | 2 |

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