



**Shiksha Mandal's**  
**Bajaj Institute of Technology, Wardha**  
(Affiliated to DBATU, Lonere, Raigad, Maharashtra)

Academic Session: 2022-23

Doc. No.: BITACAD/Structure/  
Mechanical/Even & Odd Sem/22-  
23

Date: 01/03/2023

**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester III [Second Year]**

**Regular Structure (DBATU)**

| Course Code  | Type of Course | Course Title                   | Weekly Teaching Scheme |          |          | Evaluation Scheme |           |            |            | Credits   |
|--------------|----------------|--------------------------------|------------------------|----------|----------|-------------------|-----------|------------|------------|-----------|
|              |                |                                | L                      | T        | P        | CA                | MSE       | ESE        | Total      |           |
| BTBS301      | BSC7           | Engineering Mathematics-III    | 3                      | 1        | --       | 20                | 20        | 60         | 100        | 4         |
| BTMC302      | PCC1           | Fluid Mechanics                | 3                      | 1        | --       | 20                | 20        | 60         | 100        | 4         |
| BTMC303      | PCC2           | Thermodynamics                 | 3                      | 1        | --       | 20                | 20        | 60         | 100        | 4         |
| BTMES304     | ESC10          | Materials Science & Metallurgy | 3                      | 1        | --       | 20                | 20        | 60         | 100        | 4         |
| BTMCL305     | PCC3           | Machine Drawing & CAD Lab      | --                     | --       | 4        | 60                | --        | 40         | 100        | 2         |
| BTMCL306     | PCC4           | Mechanical Engineering Lab-I   | --                     | --       | 4        | 60                | --        | 40         | 100        | 2         |
| BTES209P     | PROJ-2         | IT-1 Evaluation                | --                     | --       | --       | --                | --        | 100        | 100        | 1         |
| <b>Total</b> |                |                                | <b>12</b>              | <b>4</b> | <b>8</b> | <b>200</b>        | <b>80</b> | <b>420</b> | <b>700</b> | <b>21</b> |

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| BITACAD/Structure/<br>Mechanical/Even & Odd<br>Sem/22-23 | 09/04/21    | 16/04/21(V1)<br>28/02/23 (V2) | MDP         | <b>Dr. N.M. Kanhe</b><br>Principal |



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**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester IV [Second Year]**

**Regular Structure (DBATU)**

| Course Code  | Type of Course | Course Title                                 | Weekly Teaching Scheme |          |          | Evaluation Scheme |            |            |            | Credits                          |
|--------------|----------------|--|------------------------|----------|----------|-------------------|------------|------------|------------|----------------------------------|
|              |                |  | L                      | T        | P        | CA                | MSE        | ESE        | Total      |                                  |
| BTMC401      | PCC5           | Manufacturing Processes-I                    | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4                                |
| BTMC402      | PCC6           | Theory of Machines-I                         | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4                                |
| BTHM403      | HSSMC3         | Basic Human Rights                           | 3                      | --       | --       | 20                | 20         | 60         | 100        | 3                                |
| BTMES404     | ESC11          | Strength of Materials                        | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4                                |
| BTMPE405A    | PEC1           | Elective-I: Numerical Methods in Engineering | 3                      | --       | --       | 20                | 20         | 60         | 100        | 3                                |
| BTMPE405B    |                | Elective-I: Sheet Metal Engineering          |                        |          |          |                   |            |            |            |                                  |
| BTMPE405C    |                | Elective-I: Fluid Machinery                  |                        |          |          |                   |            |            |            |                                  |
| BTMCL406     | PCC7           | Mechanical Engineering Lab-II                | --                     | --       | 4        | 60                | --         | 40         | 100        | 2                                |
| BTMI407      | PROJ-3         | Field Training/ Industrial Training          | --                     | --       | --       | --                | --         | --         | --         | Credits to be evaluated in Sem V |
| <b>Total</b> |                |  | <b>15</b>              | <b>3</b> | <b>4</b> | <b>160</b>        | <b>100</b> | <b>340</b> | <b>600</b> | <b>20</b>                        |

**VAP/Add-on Course/s (A BIT Initiative)**

| Course Code                     | Course Title  | Weekly Teaching Scheme |    | Evaluation Scheme (Marks) |        |            |       |
|---------------------------------|---|------------------------|----|---------------------------|--------|------------|-------|
|                                 |   | L                      | P  | TEST-1                    | TEST-2 | Final Exam | Total |
| MEC4-A<br>(2022-23,<br>2021-22) | <b>VAP</b> on Modelling in PTC Creo (Module-I)        | --                     | 6  | 10                        | 10     | 30         | 50    |
| (2020-21)                       | <b>Addon Course</b> on Product Modelling through Creo | 3                      | -- | 10                        | 10     | 30         | 50    |

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**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester V [Third Year]**

**Regular Structure (DBATU)**

| Course Code  | Type of Course | Course Title                                   | Weekly Teaching Scheme |          |          | Evaluation Scheme |            |            |            | Credits   |
|--------------|----------------|--|------------------------|----------|----------|-------------------|------------|------------|------------|-----------|
|              |                |  | L                      | T        | P        | CA                | MSE        | ESE        | Total      |           |
| BTMC501      | PCC8           | Heat Transfer                                  | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4         |
| BTMC502      | PCC9           | Machine Design-I                               | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4         |
| BTMC503      | PCC10          | Theory of Machines-II                          | 3                      | 1        | --       | 20                | 20         | 60         | 100        | 4         |
| BTMPE504A    | PEC2           | Elective-II: Refrigeration & Airconditioning   | 3                      | --       | --       | 20                | 20         | 60         | 100        | 3         |
| BTMPE504B    |                | Elective-II: Steam & Gas Turbines              |                        |          |          |                   |            |            |            |           |
| BTMPE504C    |                | Elective-II: Engineering Tribology             |                        |          |          |                   |            |            |            |           |
| BTAPE504A    |                | Elective-II: Fundamentals of Automobile Design |                        |          |          |                   |            |            |            |           |
| BTAPE504D    |                | Elective-II: Automobile Engineering            |                        |          |          |                   |            |            |            |           |
| BTMOE505A    | OEC1           | Open Elective-I: Solar Energy                  | 3                      | --       | --       | 20                | 20         | 60         | 100        | 3         |
| BTMOE505B    |                | Open Elective-I: Renewable Energy Sources      |                        |          |          |                   |            |            |            |           |
| BTMOE505C    |                | Open Elective-I: Human Resource Management     |                        |          |          |                   |            |            |            |           |
| BTMOE505D    |                | Open Elective-I: Product Design Engineering    |                        |          |          |                   |            |            |            |           |
| BTMC506      | PCC11          | Applied Thermodynamics                         | 3                      | --       | --       | 20                | 20         | 60         | 100        | 3         |
| BTMCL507     | PCC12          | Mechanical Engineering Lab-III                 | --                     | --       | 6        | 60                | --         | 40         | 100        | 3         |
| BTMI408      | PROJ-3         | IT-2 Evaluation                                | --                     | --       | --       | --                | --         | 100        | 100        | 1         |
| <b>Total</b> |                |  | <b>18</b>              | <b>3</b> | <b>6</b> | <b>180</b>        | <b>120</b> | <b>500</b> | <b>800</b> | <b>25</b> |

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**VAP/Add-on Course/s (A BIT Initiative)**

| Course Code           | Course Title                                    | Weekly Teaching Scheme |    | Evaluation Scheme (Marks) |        |            |       |
|-----------------------|---|------------------------|----|---------------------------|--------|------------|-------|
|                       |   | L                      | P  | TEST-1                    | TEST-2 | Final Exam | Total |
| MEC5-A<br>(2022-23)   | <b>VAP</b> on Modelling in PTC Creo (Module-II) | --                     | 6  | 10                        | 10     | 30         | 50    |
| (2021-22)             | <b>Add-on Course</b> on CAE: Basic              | 3                      | -- | 10                        | 10     | 30         | 50    |
| (2020-21,<br>2019-20) | <b>VAP</b> on Aptitude                          | 3                      | -- | 10                        | 10     | 30         | 50    |

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**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester VI [Third Year]**

**Regular Structure (DBATU)**

| Course Code | Type of Course | Course Title   | Weekly Teaching Scheme |    |    | Evaluation Scheme |     |     |       | Credits |
|-------------|----------------|--|------------------------|----|----|-------------------|-----|-----|-------|---------|
|             |                |  | L                      | T  | P  | CA                | MSE | ESE | Total |         |
| BTMC601     | PCC12          | Manufacturing Processes-II                                     | 3                      | 1  | -- | 20                | 20  | 60  | 100   | 4       |
| BTMC602     | PCC13          | Machine Design-II  | 3                      | 1  | -- | 20                | 20  | 60  | 100   | 4       |
| BTMPE603A   | PEC3           | Elective-III: IC Engines                                       | 3                      | -- | -- | 20                | 20  | 60  | 100   | 3       |
| BTMPE603B   |                | Elective-III: Mechanical Vibrations                            |                        |    |    |                   |     |     |       |         |
| BTMPE603C   |                | Elective-III: Machine Tool Design                              |                        |    |    |                   |     |     |       |         |
| BTMPE603D   |                | Elective-III: Engineering Metrology & Quality Control          |                        |    |    |                   |     |     |       |         |
| BTAPE603C   |                | Elective-III: Advance Automobile Design                        |                        |    |    |                   |     |     |       |         |
| BTAPE603E   |                | Elective-III: E-Vehicles                                       |                        |    |    |                   |     |     |       |         |
| BTMPE604A   | PEC4           | Elective-IV: Process Equipment Design                          | 3                      | -- | -- | 20                | 20  | 60  | 100   | 3       |
| BTMPE604B   |                | Elective-IV: Product Life Cycle Management                     |                        |    |    |                   |     |     |       |         |
| BTMPE604C   |                | Elective-IV: Finite Element Method                             |                        |    |    |                   |     |     |       |         |
| BTMPE604D   |                | Elective-IV: Robotics  |                        |    |    |                   |     |     |       |         |
| BTAPE604B   |                | Elective-IV: Computational Fluid Dynamics                      |                        |    |    |                   |     |     |       |         |
| BTMOE605A   | OEC2           | Open Elective-II: Quantitative Techniques & Project Management | 3                      | -- | -- | 20                | 20  | 60  | 100   | 3       |
| BTMOE605B   |                | Open Elective-II: Nanotechnology                               |                        |    |    |                   |     |     |       |         |
| BTMOE605C   |                | Open Elective-II: Energy                                       |                        |    |    |                   |     |     |       |         |

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|                |        |   |           |          |           |            |            |            |            |                                    |  |
|----------------|--------|---|-----------|----------|-----------|------------|------------|------------|------------|------------------------------------|--|
|                |        | Conservation & Management   |           |          |           |            |            |            |            |                                    |  |
| BTMOE605D      |        | Open Elective-II: Wind Energy                                     |           |          |           |            |            |            |            |                                    |  |
| BTMOE605E      |        | Open Elective-II: Introduction to Probability Theory & Statistics |           |          |           |            |            |            |            |                                    |  |
| BTMCL606       | PCC14  | Mechanical Engineering Lab-IV                                     | --        | --       | 6         | 60         | --         | 40         | 100        | 3                                  |  |
| BTMS607        | PROJ-4 | B.Tech. Seminar   | --        | --       | 2         | 60         | --         | 40         | 100        | 1                                  |  |
| BTMP608        | PROJ-5 | Mini Project (TPCS)   | --        | --       | 2         | 60         | --         | 40         | 100        | 1                                  |  |
| BTMI609 (IT-3) | PROJ-6 | Field Training/ Industrial Training                               | --        | --       | --        | --         | --         | --         | --         | Credits to be evaluated in Sem VII |  |
| <b>Total</b>   |        |   | <b>15</b> | <b>2</b> | <b>10</b> | <b>280</b> | <b>100</b> | <b>420</b> | <b>800</b> | <b>22</b>                          |  |

**VAP/Add-on Course/s (A BIT Initiative)**

| Course Code                   | Course Title  | Weekly Teaching Scheme |    | Evaluation Scheme (Marks) |        |            |       |
|-------------------------------|---|------------------------|----|---------------------------|--------|------------|-------|
|                               |   | L                      | P  | TEST-1                    | TEST-2 | Final Exam | Total |
| MEC6-A<br>(2022-23 & 2021-22) | <b>Add-on Course</b> on Mathematical Analysis in Thermal Engineering Using MATLAB and ANSYS (MATMA) | 3                      | -- | 10                        | 10     | 30         | 50    |
| (2020-21, 2019-20)            | <b>VAP</b> on Aptitude  | 3                      | -- | 10                        | 10     | 30         | 50    |

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**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester VII [Final Year]**

**Regular Structure (DBATU)**

| Course Code  | Type of Course | Course Title  | Weekly Teaching Scheme |          |           | Evaluation Scheme |           |            |            | Credits       |
|--------------|----------------|---|------------------------|----------|-----------|-------------------|-----------|------------|------------|---------------|
|              |                |   | L                      | T        | P         | CA                | MSE       | ESE        | Total      |               |
| BTMEC701     | PCC29          | Mechatronics  | 2                      | 1        | --        | 20                | 20        | 60         | 100        | 3             |
| BTMEC702     | PCC30          | CAD/CAM   | 2                      | 1        | --        | 20                | 20        | 60         | 100        | 3             |
| BTMEC703     | PCC31          | Manufacturing Processes-III                         | 2                      | 1        | --        | 20                | 20        | 60         | 100        | 3             |
| BTMEC704A    | PEC2           | Elective I: Fluid Machinery                         | 2                      | 1        | --        | 20                | 20        | 60         | 100        | 3             |
| BTMEC704B    |                | Elective-I: Industrial Engineering & Management     |                        |          |           |                   |           |            |            |               |
| BTMEC704C    |                | Elective-I: Finite Element Method                   |                        |          |           |                   |           |            |            |               |
| BTMEC704D    |                | Elective-I: Surface Engineering                     |                        |          |           |                   |           |            |            |               |
| BTMEC704E    |                | Elective-I: Refrigeration & Air conditioning        |                        |          |           |                   |           |            |            |               |
| BTAMC704C    |                | Elective-I: Automobile Design                       |                        |          |           |                   |           |            |            |               |
| BTMEC705A    | OEC5           | Open Elective-I: Engineering Economics              | 3                      | --       | --        | --                | --        | --         | --         | Audit (AU/NP) |
| BTMEC705B    |                | Open Elective-I: Intellectual Property Rights       |                        |          |           |                   |           |            |            |               |
| BTMEC705C    |                | Open Elective-I: Wind Energy                        |                        |          |           |                   |           |            |            |               |
| BTMEC705D    |                | Open Elective-I: Knowledge Management               |                        |          |           |                   |           |            |            |               |
| BTMEL706     | PCC32          | Manufacturing Processes Lab-II                      | --                     | --       | 2         | 30                | --        | 20         | 50         | 1             |
| BTMEL707     | PCC33          | Mechatronics Lab                                    | --                     | --       | 2         | 30                | --        | 20         | 50         | 1             |
| BTMEL708     | PCC34          | CAD/CAM Lab   | --                     | --       | 2         | 30                | --        | 20         | 50         | 1             |
| BTMES709     | PROJ-4         | Seminar   | --                     | --       | 2         | 30                | --        | 20         | 50         | 1             |
| BTMEF710     | PROJ-5         | Field Training/ Internship/ Industrial Training III | --                     | --       | --        | --                | --        | 50         | 50         | 1             |
| BTMEP711     | PROJ-6         | Project Stage-I                                     | --                     | --       | 6         | 30                | --        | 20         | 50         | 3             |
| <b>Total</b> |                |   | <b>11</b>              | <b>4</b> | <b>14</b> | <b>230</b>        | <b>80</b> | <b>390</b> | <b>700</b> | <b>20</b>     |

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**VAP/Add-on Course/s (A BIT Initiative)**

| Course Code         | Course Title   | Weekly Teaching Scheme |    | Evaluation Scheme (Marks) |        |            |       |
|---------------------|--|------------------------|----|---------------------------|--------|------------|-------|
|                     |  | L                      | P  | TEST-1                    | TEST-2 | Final Exam | Total |
| MEC7-A<br>(2022-23) | <b>Add-on Course</b> on<br>Piping Engineering            | 3                      | -- | 10                        | 10     | 30         | 50    |
| (2021-22)           | <b>Add-on Course</b> on<br>Production Cost<br>Estimation | 3                      | -- | 10                        | 10     | 30         | 50    |

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**Department of Mechanical Engineering**

**B. Tech. Mechanical Engineering**

**Course Structure for Semester VIII [Final Year]**

**Regular Structure (DBATU)**

| Course Code  | Type of Course                              | Course Title  | Weekly Teaching Scheme |    |           | Evaluation Scheme |           |            |            | Credits   |
|--------------|---|---|------------------------|----|-----------|-------------------|-----------|------------|------------|-----------|
|              |   |   | L                      | T  | P         | CA                | MSE       | ESE        | Total      |           |
| BTMEC801A    | Self-Study NPTEL Courses (Any Two Subjects) | Fundamentals of Automotive Systems                                    |                        |    |           |                   |           |            |            | 3         |
| BTMEC801B    |   | Mechanics of Fiber Reinforced Polymer Composite Structures            |                        |    |           | 20                | 20        | 60         | 100        |           |
| BTMEC801C    |   | Explosions & Safety   |                        |    |           |                   |           |            |            |           |
| BTMEC801D    |   | Material Characterization   | --                     | -- | --        |                   |           |            |            |           |
| BTMEC801E    |   | Dealing with Materials Data: Collection, Analysis, and Interpretation |                        |    |           | 20                | 20        | 60         | 100        |           |
| BTMEC801F    |   | Non-Conventional Energy Resources                                     |                        |    |           |                   |           |            |            |           |
| BTMEP803     | PROJECT-7                                   | Project Stage-II or Internship & Project                              | --                     | -- | 30        | 50                | --        | 100        | 150        | 15        |
| <b>Total</b> |   |   | --                     | -- | <b>30</b> | <b>90</b>         | <b>40</b> | <b>220</b> | <b>350</b> | <b>21</b> |

**Academic Coordinator**

**Head of the Department**

**HEAD**

Department of Mechanical Engineering  
Bajaj Institute of Technology, WARDHA

**Dr. N.M. Kanhe**

PRINCIPAL,  
Bajaj Institute of Technology,  
PIPBI, Wardha.

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