



**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY**

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**M.TECH, M.E., M.DES, M.ARCH. FIRST SEMESTER (C.B.C.S.) EXAMINATION OF Winter 2016**

# PROGRAMME (WRITTEN) # M.Tech, M.E, M.Des, M.Arch FIREST SEMESTER(C.B.C.S.), Wenter 2016  
(769 to 790.)

**Time : 02.00 P.M. To 05.00 P.M.**

| Sr. No. | Name of Branch  | Day  | Tuesday  | Thursday                                     | Saturday  | Tuesday           | Thursday                  |
|---------|---|------|--|--|---|-------------------|---------------------------|
|         |   | Date | 20-12-2016   | 22-12-2016                                   | 24-12-2016  | 27-12-2016        | 29-12-2016                |
| 1       | <b>Structure Engineering</b>                              |      | Theory of Elasticity & Elastics Stability                        | Matrix Analysis Of Structural                | Structural Dynamics   | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 2       | <b>Computer Aided Design Manufacture &amp; Automation</b> |      | Computer Integrated Manufacturing                                | Computer Graphics For CADMA                  | CNC & Robotics  | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 3       | <b>Computer Science &amp; Engineering</b>                 |      | Data Science   | Advanced in Operating System Design          | High Performance Computer Architecture                                    | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 4       | <b>CAD/CAM</b>  |      | Computer Integrated Manufacturing                                | Computer Graphics For CAD/CAM                | CNC & Robotics  | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 5       | <b>M.E.[ Embedded System &amp; Comp.]</b>                 |      | Microcontroller for Embedded System Design                       | Embedded System Concept                      | High Performance Computer Architecture                                    | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 6       | <b>Environmental Engineering</b>                          |      | Environmental Chemistry & Microbiology.                          | Municipal & Industrial Water Treatment.      | Municipal Waste Water Treatment & Disposal.                               | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 7       | <b>Chemical Tech. (Food Tech.)</b>                        |      | Chemistry & Biochemistry Of Food Components.                     | Food Product Development & Packaging.        | Bioprocess Engineering.   | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 8       | <b>Chemical Tech. (Petro. Tech.)</b>                      |      | Catalyst Science & Technology.                                   | Petroleum Refinery Engineering.              | Petrochemical Process Design.   | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 9       | <b>Chemical Tech. (Oil. Tech.)</b>                        |      | Advanced Oil Chemistry & Oleo chemicals.                         | Advanced Quality Control Techniques.         | Technology Of Expression, Extraction & Refining Of Oil Bearing Materials. | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 10      | <b>Chemical Tech. (Paint Tech.)</b>                       |      | Chemistry Of Film Forming Materials & Polymerization Techniques. | Technology Of Pigment Extenders & Additives. | Principle & Formulations Of Surface Coatings.                             | <b>Elective-I</b> | <b>Elective-II (Open)</b> |
| 11      | <b>VLSI</b>   |      | VLSI Sub-system Design   | Advanced Digital Signal Processing           | VLSI Circuits   | <b>Elective-I</b> | <b>Elective-II (Open)</b> |

|    |  |   |   |  |                    |                           |
|----|--|---|---|--|--------------------|---------------------------|
| 12 | <b>Mech. Engg. &amp; Design</b>            | Advanced Mechanisms                           | Dynamics of Machinery                           | Mechanical Vibrations                            | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 13 | <b>Electronics Engg. Communication</b>     | Advanced Optical Communication                | Coding Theory & Techniques                      | Advanced Digital Communication                   | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 14 | <b>Software System</b>                     | Advanced Data Structures & Algorithm          | Advanced System Software Design                 | Software Architecture                            | <b>Elective- I</b> | <b>Elective-II (Open)</b> |
| 15 | <b>Integrated Power System</b>             | Advanced Power Electronics                    | Power System Modeling                           | Power System Deregulation & Automation           | <b>Elective- I</b> | <b>Elective-II (Open)</b> |
| 16 | <b>Heat Power Engineering</b>              | Advanced Heat & Mass Transfer                 | Advanced Thermodynamics & Combustion Technology | Internal Combustion Engines                      | <b>Elective- I</b> | <b>Elective-II (Open)</b> |
| 17 | <b>Chemical Engineering</b>                | Modeling& Simulation In Chemical Engineering. | Advanced Transport Phenomena.                   | Advanced Reactor Design.                         | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 18 | <b>Industrial Engineering</b>              | Operation Research                            | Personnel Management And Industrial Relations   | Planning And Controlling Of Manufacturing System | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 19 | <b>M.E. [Wireless Comm. &amp; Comp.]</b>   | Ad-Hoc Wireless Network.                      | Tcp / Ip & Internet                             | DSP Processors & Architectures                   | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 20 | <b>Power Elect. &amp; Power System</b>     | Advanced Power Electronics                    | Power System Modeling                           | Advanced Control Theory                          | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 21 | <b>Electronics Engineering</b>             | Advanced Digital Signal Processing            | High Speed Semiconductor Devices & Circuits.    | Advanced Embedded System Design.                 | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 22 | <b>Industrial Drives &amp; Control</b>     | Advanced Power Electronics                    | DC Drives                                       | Advanced Control Theory                          | <b>Elective-I</b>  | <b>Elective-II (Open)</b> |
| 23 | <b>M.Des[Industrial Design]</b>            | History of Design                             | Material & Processes                            | Craft, Creativity & Postmodernism                | *****              | <b>Elective-II (Open)</b> |
| 24 | <b>M. Arch. (In Arch. Education)</b>       | Introduction to Learning Methods -I           | Basics of Architecture Education                | Society & Architecture                           | *****              | <b>Elective-II (Open)</b> |
| 25 | <b>M. Arch. (Environment Architecture)</b> | Society & Environmental Economics.            | Traditional Knowledge Systems                   | Sustainable Building Technology & Management.    | *****              | <b>Elective-II (Open)</b> |

#### GENERAL INSTRUCTIONS FOR SEATING ARRANGEMENT

The name of the College Centre is already printed on the Admission Card of each Candidate. However, it is notified for general information of the Candidates that: -

The seating arrangement for the Centre will be notified separately seven days prior to the Commencement of the written examination at the respective College / Centre, The Candidates concerned will also be able to get the necessary information from that chart of seating arrangement sent to the concerned College by University.

NAGPUR:

Dated: 13-11- 2016.

Controller of Examinations  
Rashtrasant Tukadoji Maharaj Nagpur University

*P. T. O. (List of Electives)*

## List of Electives. M.TECH. & M.E. I Sem.(C.B.C.S)

| Sr. No | Name of Branch  | Elective-I   | Elective-II (Open)   |
|--------|---|--|--|
| 1      | <b>Structure Engineering</b>                              | <ul style="list-style-type: none"> <li>1 Advanced Steel Design.</li> <li>2 Designs Of Earthquake Resistant Structures.</li> <li>3 Designs Of Environmental Structures</li> </ul>   | <ul style="list-style-type: none"> <li>1. Differential Equations</li> <li>2. Linear Algebra</li> <li>3. Numerical Analysis</li> <li>4. Theory of Vectors</li> <li>5. Nano Science and Nanotechnology</li> <li>6. Advanced Materials and its Applications</li> <li>7. Laser, Fiber Optics and Applications</li> <li>8. Polymer Science and Technology</li> <li>9. Instrumental Methods of Chemical Analysis</li> <li>10. Waste Management</li> <li>11. Green Buildings</li> <li>12. Product Design &amp; Development Process</li> <li>13. Disaster Management &amp; Migration</li> <li>14. Internet of Things (IoT)</li> <li>15. Storage Area Networks and Management</li> <li>16. Chemical Engineering Mathematics</li> <li>17. Modern Chemical Instrumentation</li> <li>18. Chemical Engineering Mathematics</li> <li>19. Modern Chemical Instrumentation</li> <li>20. Advance Data Mining and Big Data Analytics</li> <li>21. Cyber Forensic and Computer Crimes</li> <li>22. Artificial Intelligence(Electrical)</li> </ul> |
| 2.     | <b>Computer Aided Design Manufacture &amp; Automation</b> | <ul style="list-style-type: none"> <li>1 Design Of Hydraulic &amp; Pneumatic Systems.</li> <li>2 Designs For Manufacturing &amp; Assembly.</li> <li>3 Computer Aided Machinining.</li> <li>4 Rapid Prototyping &amp; Tooling's.</li> </ul> |  |
| 3      | <b>Computer Science &amp; Engineering</b>                 | <ul style="list-style-type: none"> <li>1. Ai &amp; Expert System Design.</li> <li>2. Software Architecture.</li> </ul>   |  |
| 4.     | <b>CAD/CAM</b>  | <ul style="list-style-type: none"> <li>1 Mechanical Behavior Of Engineering Materials.</li> <li>2 Designs For Manufacturing &amp; Assembly.</li> <li>3 Designs Of Hydraulic &amp; Pneumatic Systems.</li> </ul>                            |  |
| 5      | <b>M.E.[ Embedded System &amp; Comp.]</b>                 | <ul style="list-style-type: none"> <li>1 System Modeling &amp; Simulation.</li> <li>2 Distributed Embedded Systems.</li> </ul>   |  |
| 6      | <b>Environmental Engineering</b>                          | <ul style="list-style-type: none"> <li>1. Water Resources Management.</li> <li>2. Environment Management.</li> <li>3. Hazardous Waste Management.</li> </ul>   |  |
| 7.     | <b>Chemical Technology (Food Tech.)</b>                   | <ul style="list-style-type: none"> <li>1. Advances In Food Engineering.</li> <li>2. Molecular Biology.</li> <li>3. Advances In Nutrition.</li> </ul>   |  |
| 8      | <b>Chemical Technology (Petro. Tech.)</b>                 | <ul style="list-style-type: none"> <li>1. Oil &amp; Natural Gas Processing.</li> <li>2. Modeling &amp; Simulation In Chemical Engineering.</li> <li>3. Advanced Transport Phenomena.</li> <li>4. Advanced Thermodynamics.</li> </ul>       |  |
| 9      | <b>Chemical Technology (Oil. Tech.)</b>                   | <ul style="list-style-type: none"> <li>1. Technological Advancement In Oleo chemicals.</li> <li>2. Process Economics, Utilities &amp; Byproducts Of Oil Industry.</li> </ul>   |  |
| 10     | <b>Chemical Technology (Paint Tech.)</b>                  | <ul style="list-style-type: none"> <li>1. Automotive &amp; Coil Coatings.</li> <li>2. Technology Of Cosmetics &amp; Polishes.</li> <li>3. Boi-Polymers In Coatings.</li> </ul>   |  |
| 11     | <b>VLSI</b>   | <ul style="list-style-type: none"> <li>1. Mixed Signal Processing.</li> <li>2. Low Power VLSI Design.</li> <li>3. Embedded Systems.</li> </ul>   |  |
| 12     | <b>Mech. Engg. &amp; Design</b>                           | <ul style="list-style-type: none"> <li>1. Computer Aided Mechanical Design.</li> <li>2. Reliability Maintainability &amp; Wear.</li> </ul>   |  |

|           |  |   |       |   |
|-----------|--|---|-------|---|
| <b>13</b> | <b>Electronics Engineering Communication</b> | 1. Advanced Antenna.<br>2. Information Theory & Stochastic Process.<br>3. Advanced Image Processing.  |       | 23. Utilization of Electrical Energy        |
| <b>14</b> | <b>Software System</b>                       | 1) AI & Expert System Design.<br>2) Network System Design.  |       | 24. Biomedical System Engineering           |
| <b>15</b> | <b>Integrated Power System</b>               | 1. Power System Dynamics & Control.<br>2. Application Of Microcontroller In Electrical System.<br>3. Micro & Smart Grid.                                      |       | 25. Soft Computing Techniques               |
| <b>16</b> | <b>Heat Power Engineering</b>                | 1. Advanced Energy Technologies.<br>2. Power Plant Practice & Control.<br>3. Computer Aided Design & its Application In Thermal Systems.                      |       | 26. Digital Forensics                       |
| <b>17</b> | <b>Chemical Engineering.</b>                 | 1. Process Design, Integration & Intensification.<br>2. Advanced Optimization Techniques.<br>3. Fluidization Engineering.<br>4. Computational Fluid Dynamics. |       | 27. Nano Electronics                        |
| <b>18</b> | <b>Industrial Engineering</b>                | 1. Marketing Management.<br>2. Flexible Manufacturing System & Robotics.<br>3. Inventory & Supply Chain Management.<br>4. Statics & Quality Control.          |       | 28. CMOS VLSI Design                        |
| <b>19</b> | <b>M.E. Wireless Comm. &amp; Comp.</b>       | 1.Object Oriented System<br>2.Multimedia Communication  |       | 29. Soft Computing                          |
| <b>20</b> | <b>Power Electronics &amp; Power System</b>  | 1. Power System Dynamics & Control.<br>2. Application Of Microcontroller In Electrical System.<br>3. Micro & Smart Grid.                                      |       | 30. Entrepreneurship Development            |
| <b>21</b> | <b>Electronics Engineering</b>               | 1. Pattern Recognition.<br>2. Analog IC Design.<br>3. Advanced Digital Communication.   |       | 31. Computer Aided Facilities Planning      |
| <b>22</b> | <b>Industrial Drives &amp; Control</b>       | 1. Analysis Of Electrical Machines.<br>2. Application Of Microcontroller In Electrical System.<br>3. Micro & Smart Grid.                                      |       | 32. Total Quality System & Engineering      |
| <b>23</b> | <b>M.Des[Industrial Design]</b>              |   | ***** | 33. Reliability Engineering                 |
| <b>24</b> | <b>M. Arch. (In Arch. Education)</b>         |   | ***** | 34. Artificial Intelligence (Mechanical)    |
| <b>25</b> | <b>M. Arch. (Environment Architecture)</b>   |   | ***** | 35. Control System Engineering              |
|           |  |   |       | 36. Micro Electro Mechanical System         |
|           |  |   |       | 37. Energy Conservation and Management      |
|           |  |   |       | 38. Automobile Engineering                  |
|           |  |   |       | 39. Advanced Operation Research             |
|           |  |   |       | 40. Robotics                                |
|           |  |   |       | 41. Mechanization in Food Processing        |
|           |  |   |       | 42. Engineering Materials and Metallurgy    |
|           |  |   |       | 43. Real Time System & Software             |
|           |  |   |       | 44. Operation Research                      |
|           |  |   |       | 45. Mobile Computing                        |
|           |  |   |       | 46. Biometric Technologies and Applications |
|           |  |   |       | 47. Global Warming & Climate Change.        |
|           |  |   |       | 48. Road Safety Engineering.                |