



**(An Autonomous Institution - AFFILIATED TO ANNA UNIVERSITY, CHENNAI)**

**S.P.G.Chidambara Nadar - C.Nagammal Campus**

**S.P.G.C. Nagar, K.Vellakulam – 625 701 (Near VIRUDHUNAGAR).**

**DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

**DATE:**19<sup>th</sup>March, 2022, Saturday

**Time:** 2:30PM to 4:00 PM

**PLATFORM:**Microsoft Teams

**Meeting Link:**<https://tinyurl.com/rm7n7did>

**IN ATTENDANCE:**

| S.No | Name of the Expert | Designation  | Capacity                                     |
|------|--------------------|--|--|
| 1    | Dr. V. Santhanam   | Dr. V. Santhanam, Professor & Head,<br>Department of Mechatronics<br>Engineering, Rajalakshmi Engineering<br>College, Chennai - 602 105.<br><a href="mailto:santhanam.v@rajalakshmi.edu.in">santhanam.v@rajalakshmi.edu.in</a><br>Ph: 9840166401 | AU Nominee                                   |
| 2    | Dr. T. Asokan      | Dr. T. Asokan, Professor & Head,<br>Department of Engineering Design,<br>Indian Institute of Technology Madras,<br>Chennai – 600036<br><a href="mailto:asok@iitm.ac.in">asok@iitm.ac.in</a><br>Ph: 22574707                                      | Academic Council<br>nominated BoS<br>Members |
| 3    | Dr. N. Selvaraj    | Dr. N. Selvaraj, Professor, Department<br>of Mechanical Engineering, National<br>Institute of Technology Warangal,<br>Telangana-506004<br><a href="mailto:selva@nitw.ac.in">selva@nitw.ac.in</a><br>Ph:9989231847                                |  |



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|    |                    |  |                  |
|----|--------------------|--|------------------|
| 4. | Dr. D. Kannadassan | Dr. D. Kannadasan,<br>Associate Professor,<br>Center for Nanotechnology Research,<br>Vellore Institute of Technology,<br>Vellore-600 014<br><a href="mailto:dkannadasan@vit.ac.in">dkannadasan@vit.ac.in</a><br>Ph:91-9944055243 | Alumni<br>Member |
|----|--------------------|--|------------------|

|  |                |
|--|----------------|
| <b>FACULTY OF<br/>MECHATRONICS ENGINEERING</b> | <b>MEMBERS</b> |
|--|----------------|

| S.No | Name of the Faculty        | Designation         |
|------|----------------------------|---------------------|
| 1    | Dr. K. Kannan              | Professor           |
| 2    | Dr.S.Rajeshbabu            | Assistant Professor |
| 3    | Dr. G. Sakthivel           | Assistant Professor |
| 4    | Mr. A. Arul Kumar          | Assistant Professor |
| 5    | Mr. P. Balasundar          | Assistant Professor |
| 6    | Mr. S.DavidBlessley        | Assistant Professor |
| 7    | Mr. S.Wesley Moses Samdoss | Assistant Professor |
| 8    | Mr. A. Ganesan             | Assistant Professor |

1. Meeting was organized in online mode - Microsoft Teams platform at 2.30pm.
2. Mr.S.WesleyMoses Samdoss,Assistant Professor& UG Coordinator /MTRE gave welcome address to all the members of the Board of Studies.



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**Discussions:**

**BOS 004.01**

**Dr. K. Kannandisseminated the Vision, Mission, and PEOs & PSOs of the Department.**

| <b>Vision of the Department</b>  | <b>Mission of the Department</b>   |
|--|--|
| To make the Department of Mechatronics Engineering the unique of its kind in the field of Research and Development towards Industrial Automation & Robotics. | To impart highly innovative and technical knowledge in Mechatronics Engineering to the urban and unreachable rural student folks through "Total Quality Education" |

**Program Educational Objectives (PEOs)**

**PEO1:** Graduates will be able to apply their multi-disciplinary knowledge to formulate, design, develop and analyse Mechatronics Systems.

**PEO2:** Graduates will be able to come up with solution for any real time problems in the field of Mechatronics Engineering and allied areas demanded by the Industry and Society.

**PEO3:** Graduates will be able to get familiarized with economical issues in Mechatronics Engineering and work in multi-disciplinary teams with ethical code of conduct.

**Program Specific Objectives (PSOs)**



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Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

**PSO1:** Graduates will be able to apply their knowledge in sensors, drives, actuators, controls, mechanical design and modern software & hardware tools to design and develop cost effective Mechatronics systems.

**PSO2:** Graduates will be able to become Technocrats and Entrepreneurs, build the attitude of developing new concepts on emerging fields and pursuing higher studies.

**BOS 004.02**

**Dr. K. Kannangave a brief presentation for the Approval of the Minutes of the III BoS held at 10<sup>th</sup> Nov 2021.**

**Dr. K. Kannan Prof &HOD/MTRE pointed out the action taken from the previous BoS**

- To offer an open elective paper during V Semester to other departments is finalized as follows

| Sl. No. | Course Code | Course Title        | Category | Contact Periods | L | T | P | C | Offering To         |
|---------|-------------|---------------------|----------|-----------------|---|---|---|---|---------------------|
| 1.      | OMT151      | Low Cost Automation | OE       | 3               | 3 | 0 | 0 | 3 | ECE, EEE, EIE, MECH |

| Sl. No. | Course Code | Coursetitle | Category | Contact Periods | L | T | P | C | Offering To |
|---------|-------------|-------------|----------|-----------------|---|---|---|---|-------------|
|---------|-------------|-------------|----------|-----------------|---|---|---|---|-------------|



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**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|    |        |                     |    |   |   |   |   |   |                                    |
|----|--------|---------------------|----|---|---|---|---|---|------------------------------------|
| 1. | OMT171 | Industrial Robotics | OE | 3 | 3 | 0 | 0 | 3 | AI & DS,<br>CSE,IT,ECE,EE<br>E&EIE |
|----|--------|---------------------|----|---|---|---|---|---|------------------------------------|

To offer an open elective paper during VII Semester to other departments is finalized as follows

**BOS 004.03**

Dr. K. Kannan presented the R2020 III Year and IV Year curriculum and syllabus for discussion and approval.

- a. B.E -MTRE (5<sup>th</sup> to 8<sup>th</sup> semester)

**Semester-V**

| SI. No.       | COURSE CODE | COURSE TITLE  | CATEGORY | PERIODS PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|---------------|-------------|---|----------|------------------|---|---|-----------------------|---------|
|               |             |   |          | L                | T | P |                       |         |
| <b>THEORY</b> |             |   |          |                  |   |   |                       |         |
| 1.            | IT1471      | Object Oriented Programming using JAVA (Theory Cum Lab) | PC       | 3                | 0 | 2 | 5                     | 4       |



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**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                  |        |   |    |           |          |           |           |           |
|------------------|--------|---|----|-----------|----------|-----------|-----------|-----------|
| 2.               | MT1501 | Machine Design                                    | PC | 3         | 0        | 0         | 3         | 3         |
| 3.               | MT1502 | Machine Dynamics for Mechatronics Engineers       | PC | 3         | 0        | 0         | 3         | 3         |
| 4.               | MT1503 | Power Electronic Converters and Drives            | PC | 3         | 0        | 0         | 3         | 3         |
| 5.               | PE1    | Professional Elective I                           | PE | 3         | 0        | 0         | 3         | 3         |
| 6.               | OE1    | Open Elective I                                   | OE | 3         | 0        | 0         | 3         | 3         |
| <b>PRACTICAL</b> |        |   |    |           |          |           |           |           |
| 7.               | ME1581 | Kinematics and Dynamics Laboratory                | PC | 0         | 0        | 4         | 4         | 2         |
| 8.               | MT1511 | Power Electronic Converters and Drives laboratory | PC | 0         | 0        | 4         | 4         | 2         |
| 9.               | HS1521 | Professional Communication                        | EE | 0         | 0        | 2         | 1         | 1         |
| <b>TOTAL</b>     |        |   |    | <b>18</b> | <b>0</b> | <b>12</b> | <b>29</b> | <b>24</b> |

**Semester-VI**

| Sl. No.       | COURSE CODE | COURSE TITLE                         | CATEGORY | PERIOD S PER WEEK |   |   | TOTAL CONTACT PERIODS | CREDITS |
|---------------|-------------|--------------------------------------|----------|-------------------|---|---|-----------------------|---------|
|               |             |                                      |          | L                 | T | P |                       |         |
| <b>THEORY</b> |             |                                      |          |                   |   |   |                       |         |
| 1.            | MT1601      | Design of Mechatronics System        | PC       | 3                 | 0 | 0 | 3                     | 3       |
| 2.            | MT1602      | Fluid Power Systems (Theory Cum Lab) | PC       | 3                 | 0 | 2 | 5                     | 4       |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
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|------------------|--------|---|----|--------------|----------|----------|-----------|-----------|
| 3.               | MT1603 | Industrial Automation<br>(Theory Cum Lab)                               | PC | 3            | 0        | 2        | 5         | 4         |
| 4.               | PEII   | Professional<br>Elective–II   | PE | 3            | 0        | 0        | 3         | 3         |
| 5.               | PEIII  | Professional<br>Elective–III  | PE | 3            | 0        | 0        | 3         | 3         |
| 6.               |        | Online Course   | OC | NPTEL/SWAYAM |          |          |           | 3         |
| <b>PRACTICAL</b> |        |   |    |              |          |          |           |           |
| 7.               | MT1621 | Design and<br>Fabrication<br>Project for<br>Mechatronics<br>Engineering | EE | 0            | 0        | 4        | 4         | 2         |
| <b>TOTAL</b>     |        |   |    | <b>15</b>    | <b>0</b> | <b>8</b> | <b>23</b> | <b>22</b> |

**Semester -VII**

| Si.<br>No.    | Course<br>Code | Course Title                | Category | Periods<br>Per Week |   |   | Total<br>Contact<br>Periods | Credits |
|---------------|----------------|-----------------------------|----------|---------------------|---|---|-----------------------------|---------|
|               |                |                             |          | L                   | T | P |                             |         |
| <b>THEORY</b> |                |                             |          |                     |   |   |                             |         |
| 1.            | GE1771         | Principles of<br>Management | HS       | 3                   | 0 | 0 | 3                           | 3       |



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DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022

|                  |        |  |    |              |          |          |           |           |
|------------------|--------|--|----|--------------|----------|----------|-----------|-----------|
| 2.               | MT1701 | Computer Aided Design and Manufacturing            | PC | 3            | 0        | 0        | 3         | 3         |
| 3.               | MT1702 | Robotics and Machine Vision System                 | PC | 3            | 0        | 0        | 3         | 3         |
| 4.               | PEIV   | Professional Elective–IV                           | PE | 3            | 0        | 0        | 3         | 3         |
| 5.               | PEV    | Professional Elective–V                            | PE | 3            | 0        | 0        | 3         | 3         |
| 6.               | OEII   | Open Elective-II                                   | OE | 3            | 0        | 0        | 3         | 3         |
| 7.               |        | Online Course                                      | OC | NPTEL/SWAYAM |          |          |           | 3         |
| <b>PRACTICAL</b> |        |  |    |              |          |          |           |           |
| 8.               | MT1711 | Computer Aided Design and Manufacturing Laboratory | PC | 0            | 0        | 4        | 4         | 2         |
| 9.               | MT1712 | Robotics and Machine Vision System Laboratory      | PC | 0            | 0        | 4        | 4         | 2         |
| <b>TOTAL</b>     |        |  |    | <b>18</b>    | <b>0</b> | <b>8</b> | <b>26</b> | <b>25</b> |

Semester- VIII

| Si. No.          | Course Code | Course Title | Category | Periods Per Week |   |   | Total Contact Periods | Credits |
|------------------|-------------|--------------|----------|------------------|---|---|-----------------------|---------|
|                  |             |              |          | L                | T | P |                       |         |
| <b>PRACTICAL</b> |             |              |          |                  |   |   |                       |         |





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|--------------|--------|--------------|-----|----------|----------|-----------|-----------|----------|
| 2.           | MT1821 | Project Work | EEC | 0        | 0        | 16        | 16        | 8        |
| <b>TOTAL</b> |        |              |     | <b>0</b> | <b>0</b> | <b>16</b> | <b>16</b> | <b>8</b> |

**b. List of Professional Elective Courses**

**Professional Elective I, Semester V**

| Sl. No. | Course Code | CourseTitle                                     | Category | Contact Periods | L | T | P | C |
|---------|-------------|---|----------|-----------------|---|---|---|---|
| 1.      | EE1535      | Special Electrical Machines                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | ME1504      | Hybrid and Electric Vehicle                     | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | MT1531      | Computer Integrated Manufacturing systems       | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | MT1532      | Python Programming for Mechatronics Engineering | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | MT1533      | Statistical Quality Control                     | PE       | 3               | 3 | 0 | 0 | 3 |

**Professional Elective II, Semester VI**

| Sl. No. | Course Code | CourseTitle | Category | Contact Periods | L | T | P | C |
|---------|-------------|-------------|----------|-----------------|---|---|---|---|
|---------|-------------|-------------|----------|-----------------|---|---|---|---|



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|----|--------|------------------------------|----|---|---|---|---|---|
| 1. | AD1201 | Foundations for Data Science | PE | 3 | 3 | 0 | 0 | 3 |
| 2. | MT1631 | Autotronics                  | PE | 3 | 3 | 0 | 0 | 3 |
| 3. | MT1632 | Design of Experiment         | PE | 3 | 3 | 0 | 0 | 3 |
| 4. | MT1633 | Medical Mechatronics         | PE | 3 | 3 | 0 | 0 | 3 |
| 5. | MT1634 | Rapid Prototyping            | PE | 3 | 3 | 0 | 0 | 3 |

**Professional Elective III, Semester VI**

| Sl. No. | Course Code | CourseTitle                             | Category | Contact Periods | L | T | P | C |
|---------|-------------|---|----------|-----------------|---|---|---|---|
| 1.      | ME1639      | Non-Destructive Testing and Evaluation  | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | AD1371      | Introduction to Artificial Intelligence | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | MT1635      | Flexible Manufacturing System           | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | MT1636      | Service and Field Robotics              | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | ME1737      | Composites Materials                    | PE       | 3               | 3 | 0 | 0 | 3 |



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**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

**Professional Elective IV, Semester VII**

| Sl. No. | Course Code | Course Title                                     | Category | Contact Periods | L | T | P | C |
|---------|-------------|--|----------|-----------------|---|---|---|---|
| 1.      | EI1634      | Embedded Systems                                 | PE       | 3               | 3 | 0 | 0 | 3 |
| 2.      | GE1671      | Total Quality management                         | HS       | 3               | 3 | 0 | 0 | 3 |
| 3.      | MT1731      | Machine Learning and Deep Learning               | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | MT1732      | Mobile and Autonomous Robot                      | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | MT1737      | Synthesis and Characterization of Nano Materials | PE       | 3               | 3 | 0 | 0 | 3 |

**Professional Elective V, Semester VII**

| Sl. No. | Course Code | Course Title                         | Category | Contact Periods | L | T | P | C |
|---------|-------------|--------------------------------------|----------|-----------------|---|---|---|---|
| 1.      | GE1471      | Professional Ethics and human values | HS       | 3               | 3 | 0 | 0 | 3 |
| 2.      | ME1743      | Maintenance Engineering              | PE       | 3               | 3 | 0 | 0 | 3 |
| 3.      | MT1733      | Automation system design             | PE       | 3               | 3 | 0 | 0 | 3 |
| 4.      | MT1734      | Data science for Business Decisions  | PE       | 3               | 3 | 0 | 0 | 3 |
| 5.      | MT1735      | Internet of Things for Mechatronics  | PE       | 3               | 3 | 0 | 0 | 3 |



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**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

**OPEN ELECTIVE COURSES**

**(Offered by Mechatronics Engineering Department to other branches)**

**Semester V**

| Sl. No. | Course Code | Course Title        | Category | Contact Periods | L | T | P | C | Offering To         |
|---------|-------------|---------------------|----------|-----------------|---|---|---|---|---------------------|
| 1.      | OMT151      | Low Cost Automation | OE       | 3               | 3 | 0 | 0 | 3 | ECE, EEE, EIE, MECH |

**Semester VII**

| Sl. No. | Course Code | Course Title        | Category | Contact Periods | L | T | P | C | Offering To                 |
|---------|-------------|---------------------|----------|-----------------|---|---|---|---|-----------------------------|
| 1.      | OMT171      | Industrial Robotics | OE       | 3               | 3 | 0 | 0 | 3 | AI & DS, CSE, ECE, EEE, EIE |

**The following suggestions were given by the BOS Members:**

- Dr. T. Asokan & Dr. V. Santhanam suggested that in Professional Elective –IV the subject name Autonomous and Mobile Robot title is inappropriate and they given suggestions as Autonomous Mobile Robot.
- In Professional Elective-IV the members asked about the resources and research facilities available for the subject Synthesis and Characterization of Nano Materials. Dr. K. Kannan described the resources and research facilities available for that subject in other departments.



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- Dr. N. Selvaraj suggested to rename the subject titled Principles of Management as Management Science and to follow the recent (after 2010 is recommended) editions of Text and Reference books.
- Members recommended the text book CAD/CAM by MikellP.Groover and the reference book CAD/CAM by P.N.Raofor the subject Computed Aided Design and Manufacturing.
- Robotics and Machine Vision System the Members suggested harmonic drives topic is not fit for included in Unit-I. Dr.K.Kannan replied will add the topic of Introduction to Transmission & Drives. Unit III topics are very minimal. They asked to reframe the syllabus for this subject.
- Dr.T.Asokan Suggested that CAD/CAM Lab Experiment Number 2 can be renamed as Modeling and Assembling of Mechanical Systems.
- Dr. N. Selvaraj clarified about the Robot Operating Systems. Dr.V.Santhanam mentioned the ROS is not discussed in theory , so the members suggested that the provisions may given for the introduction to ROS in Lab Syllabus.
- Dr. N. Selvarajsuggested to ensure the Six-sigma topic in Total Quality Management.
- Dr.T.Askokan suggested to remove the repeated topics in Automation System Design.
- Dr. K. Kannan presented the Proposed Syllabus for open elective papers. Members suggested to revise the syllabus for industrial robotics.

**BOS 004.04**

**Dr. K. Kannan** presented the details of Value Added Course Conducted for II Year Mechatronics Engineering students.



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|                                |   |
|--------------------------------|---|
| Name of the Course             | :Real Time applications and Developments using LabVIEW      |
| Course Duration                | : 6 days  |
| Conducted dates                | : 23.02.2022-25.02.2022, 28.02.2022, 01.03.2022, 02.03.2022 |
| No. of Students attended       | : 16 students from Mechatronics Engineering                 |
| Name of the External Institute | :Aadhya Skills Research and Development, Chennai            |

**BOS 004.05**

**Dr. K. Kannan** presented the details of Audit Course offered MTRE students

**III Semester**

Name of the Audit Course : Constitution of India

Course Duration : 45 Hours

**IV Semester**

Name of the Audit Course : Design Thinking

Course Duration : 45 Hours

**BOS 004.06**

**Dr. K. Kannan** presented the List of Recommended NPTEL Courses to enroll by our students during VI & VII Semester under R2020.

**For Even Semester:**

- Basics of Biology
- Computer Networks and Internet Protocol
- Block Chain and its applications`



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**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

- E-Business
- Six Sigma
- Principles of Industrial Engineering
- Product design and Manufacturing

**For Odd Semester:**

- Introduction to Industry 4.0 and Industrial Internet of Things
- Computer Vision
- Renewable Energy
- Industrial safety Engineering
- Operations and Supply chain management
- Work system Management
- Engineering Metrology

**BOS 004.07**

- **Dr. K. Kannan** presented the List of Open Elective Courses to be offered to other departments.

**V Semester**

Name of the Open Elective Course : Low Cost Automation  
Course Duration and Credit : 45 Hours & 3 Credits  
Will be offered to : ECE, EEE, EIE and Mech

**VII Semester**

Name of the Audit Course : Industrial Robotics  
Course Duration and Credit : 45 Hours & 3 Credits  
Will be offered to : AI&DS, CSE, IT, ECE, EEE and EIE



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**BOS 004.08**

**Dr. K. Kannan** presented the conduct of Integrated Theory Cum Practical Courses - R2020

**For Integrated Theory Cum Practical Courses - R2020**

|  |
|--|
| • Total Marks (100) Comprises of Internal (40) and External (60)                   |
| • Internal Mark for Theory(20) is based on the three cycle test                    |
| • Internal Mark for Practical (20) is based on End Semester Practical Examinations |

**BOS 004.09**

**Dr. K. Kannan** presented the curriculum Framework for B.E Mechatronics Engineering R2021

| <b>Sl. No.</b> | <b>Category of Courses</b> | <b>Credits</b> |
|----------------|----------------------------|----------------|
| 1.             | Foundation Courses         | 60 Credits     |
| 2.             | Professional Core (PC)     | 60 Credits     |
| 3.             | Professional Elective (PE) | 18 Credits     |





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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|    |  |            |
|----|--|------------|
| 4. | Open Elective (OE)                     | 6 credits  |
| 5. | Employability Enhancement Courses (EE) | 26 Credits |
| 6. | Online Courses (OL)                    | 6 credits  |
| 7. | Program specific Value added courses   | 4 Credits  |
| 8. | Audit Courses (AU)                     | 2 courses  |

| <b>Category of Courses in B.E Mechatronics Engineering</b> |                      |
|--|----------------------|
| <b>Semester</b>  | <b>Total Credits</b> |
| I  | 22                   |
| II   | 23                   |
| III  | 27                   |
| IV   | 25                   |
| V  | 25                   |
| VI   | 25                   |
| VII  | 25                   |
| VIII   | 8                    |
| <b>Total</b>   | <b>180</b>           |

**BOS 004.10**

**Dr. K. Kannan** presented the credit Assignment for B.E Mechatronics Engineering – R2021



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

| Contact Period per week   | Credits |
|---|---------|
| 1 Lecture (L) Period  | 1       |
| 1 Tutorial (T) Period   | 1       |
| 2 or 3 Laboratory (P) Periods (Laboratory / EM Courses like Seminar / Project work / Case Study etc.) | 1       |
| 4 Laboratory (P) Periods (Laboratory / EM Courses like Seminar / Project work / Case Study etc.)      | 2       |

| Duration of Industrial training / Internship | Credits |
|--|---------|
| 2 weeks                                      | 1       |
| 4 weeks                                      | 2       |
| 6 weeks                                      | 3       |

Note: One week = 40 internship hours

• **Assessment Procedure for awarding Marks-R2021**

| S.No. | Category of Course                        | Marks  |                          |
|-------|---|--|--------------------------|
|       |   | Continuous Assessments   | End Semester Examination |
| 1.    | Theory Courses                            | 40 %   | 60 %                     |
| 2.    | Laboratory Courses                        | 50 %   | 50 %                     |
| 3.    | Theory Integrated with Laboratory Courses | Assessment through Theory – 20 %<br>Assessment through Laboratory- 20 %<br>Total – 40 %    | Theory – 60 %            |
| 4.    | Laboratory Integrated with Theory Courses | Assessment through Theory – 15 %<br>Assessment through Laboratory - 35 %<br>(Total – 50 %) | Laboratory – 50 %        |
| 5.    | Project Work                              | 60 %   | 40 %                     |
| 6.    | Other Employability Enhancement Courses   | 100 %  | ---                      |



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**DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

| Sl.No. | Category of Course                | Marks                   |                               |                                |
|--------|-----------------------------------|-------------------------|-------------------------------|--------------------------------|
|        |                                   | Assessment for Theory   | Assessment for Laboratory     | End Semester Examination       |
| 1.     | Theory integrated with Laboratory | 20<br>(Two Assessments) | 20<br>(Continuous Evaluation) | 60<br>(Theory Examination)     |
| 2.     | Laboratory integrated with Theory | 15<br>(One Assessment)  | 35<br>(Continuous Evaluation) | 50<br>(Laboratory Examination) |

**BOS 004.11**

**Dr. K. Kannan** presented the R2021 Curriculum for discussion and approval.

**SEMESTER I**

| Sl.No         | Course Code | Course Name                        | Credits |   |   |   |
|---------------|-------------|------------------------------------|---------|---|---|---|
|               |             |                                    | L       | T | P | C |
| <b>Theory</b> |             |                                    |         |   |   |   |
| 1             | SH2101      | Technical English                  | 3       | 0 | 0 | 3 |
| 2             | MA2101      | Matrices and Differential Calculus | 3       | 1 | 0 | 4 |
| 3             | PH2101      | Engineering Physics                | 3       | 0 | 0 | 3 |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                      |        |                                     |           |          |          |           |
|----------------------|--------|-------------------------------------|-----------|----------|----------|-----------|
| 4                    | GE2101 | Principles of Engineering           | 3         | 0        | 0        | 3         |
| 5                    | EM2101 | Coding Techniques - I               | 3         | 0        | 0        | 3         |
| 6                    | CY2101 | Engineering Chemistry               | 3         | 0        | 0        | 3         |
| <b>Practical</b>     |        |                                     |           |          |          |           |
| 7                    | MA2102 | Mathematics Laboratory              | 0         | 0        | 2        | 1         |
| 8                    | PH2102 | Physics Laboratory                  | 0         | 0        | 3        | 1         |
| 9                    | EM2102 | Coding Techniques - I<br>Laboratory | 0         | 0        | 3        | 1         |
| <b>Total Credits</b> |        |                                     | <b>18</b> | <b>1</b> | <b>8</b> | <b>22</b> |

**SEMESTERII**

| Sl.No         | CourseCode | CourseName   | Credits |   |   |   |
|---------------|------------|--|---------|---|---|---|
|               |            |  | L       | T | P | C |
| <b>Theory</b> |            |  |         |   |   |   |
| 1             | SH2151     | ProfessionalEnglish  | 3       | 0 | 0 | 3 |
| 2             | MA2151     | Vector Calculus, Complex<br>Integration and Laplace<br>Transform | 3       | 1 | 0 | 4 |
| 3             | PH2151     | Renewable Energy Sources   | 3       | 0 | 0 | 3 |



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**DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                     |        |                                       |           |          |           |           |
|---------------------|--------|---------------------------------------|-----------|----------|-----------|-----------|
| 4                   | GE2151 | EngineeringGraphics                   | 2         | 0        | 3         | 3         |
| 5                   | GE2152 | Environmental Science and Engineering | 3         | 0        | 0         | 3         |
| 6                   | EM2151 | CodingTechniques-II                   | 3         | 0        | 0         | 3         |
| <b>Practical</b>    |        |                                       |           |          |           |           |
| 7                   | CY2151 | ChemistryLaboratory                   | 0         | 0        | 3         | 1         |
| 8                   | EM2152 | Coding Techniques – IILaboratory      | 0         | 0        | 3         | 1         |
| 9                   | GE2153 | Engineering Practices Laboratory      | 0         | 0        | 4         | 2         |
| <b>TotalCredits</b> |        |                                       | <b>17</b> | <b>1</b> | <b>13</b> | <b>23</b> |

**SEMESTERIII**

| Sl.No         | CourseCode | CourseName                                     | Credits |   |   |   |
|---------------|------------|--|---------|---|---|---|
|               |            |  | L       | T | P | C |
| <b>Theory</b> |            |  |         |   |   |   |
| 1             | MA2202     | Transforms and Numerical Solution of Equations | 3       | 1 | 0 | 4 |
| 2             | GE2251     | Design Thinking                                | 3       | 0 | 0 | 3 |
| 3             | ME2271     | Engineering Mechanics                          | 3       | 0 | 0 | 3 |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                     |        |   |           |          |           |           |
|---------------------|--------|---|-----------|----------|-----------|-----------|
| 4                   | MT2201 | Analog Devices and Circuits                 | 3         | 0        | 0         | 3         |
| 5                   | MT2202 | Fluid Mechanics and Thermal Sciences        | 3         | 0        | 0         | 3         |
| 6                   | MT2206 | Electrical Circuits and Machines            | 3         | 0        | 0         | 3         |
| 7                   |        | Value Added Course                          |           |          |           | 2         |
| <b>Practical</b>    |        |   |           |          |           |           |
| 8                   | MT2211 | Computer Aided Drafting Laboratory          | 0         | 0        | 4         | 2         |
| 9                   | MT2212 | Fluid Mechanics Laboratory                  | 0         | 0        | 4         | 2         |
| 10                  | MT2216 | Electrical Circuits and Machines Laboratory | 0         | 0        | 4         | 2         |
| <b>TotalCredits</b> |        |   | <b>18</b> | <b>1</b> | <b>12</b> | <b>27</b> |

**SEMESTERIV**

| SI.No         | CourseCode | CourseName                                    | Credits |   |   |   |
|---------------|------------|---|---------|---|---|---|
|               |            |   | L       | T | P | C |
| <b>Theory</b> |            |   |         |   |   |   |
| 1             | MA2255     | Probability, Statistics and Numerical Methods | 3       | 1 | 0 | 4 |



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**DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                     |        |  |           |          |           |           |
|---------------------|--------|--|-----------|----------|-----------|-----------|
| 2                   | EE2271 | Control Systems Engineering            | 3         | 0        | 0         | 3         |
| 3                   | EC2271 | Digital Electronics                    | 3         | 0        | 0         | 3         |
| 4                   | MT2251 | Manufacturing Technology               | 3         | 0        | 0         | 3         |
| 5                   | MT2252 | Sensors and Instrumentation            | 3         | 0        | 0         | 3         |
| 6                   | MT2253 | Solid Mechanics                        | 3         | 0        | 0         | 3         |
| <b>Practical</b>    |        |  |           |          |           |           |
| 7                   | MT2261 | Manufacturing Technology Laboratory    | 0         | 0        | 4         | 2         |
| 8                   | MT2262 | Sensors and Instrumentation Laboratory | 0         | 0        | 4         | 2         |
| 9                   | MT2263 | Solid Mechanics Laboratory             | 0         | 0        | 4         | 2         |
| <b>TotalCredits</b> |        |  | <b>18</b> | <b>1</b> | <b>12</b> | <b>25</b> |

**SEMESTERV**

| SI.No         | CourseCode | CourseName | Credits |   |   |   |
|---------------|------------|------------|---------|---|---|---|
|               |            |            | L       | T | P | C |
| <b>Theory</b> |            |            |         |   |   |   |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

|                     |        |   |           |          |           |           |
|---------------------|--------|---|-----------|----------|-----------|-----------|
| 1                   | MT2301 | Machine Dynamics for Mechatronics Engineering           | 3         | 0        | 0         | 3         |
| 2                   | MT2302 | Microprocessors and its Applications                    | 3         | 0        | 0         | 3         |
| 3                   | MT2303 | Power Electronic converters and Drives                  | 3         | 0        | 0         | 3         |
| 4                   |        | Professional Elective-I                                 | 3         | 0        | 0         | 3         |
| 5                   |        | Professional Elective-II                                | 3         | 0        | 0         | 3         |
| 6                   |        | Open Elective-I   | 3         | 0        | 0         | 3         |
| 7                   |        | Value Added Course                                      |           |          |           | 2         |
| <b>Practical</b>    |        |   |           |          |           |           |
| 8                   | MT2312 | Microprocessors and its Applications Laboratory         | 0         | 0        | 4         | 2         |
| 9                   | MT2313 | Power Electronic converters and Drives laboratory       | 0         | 0        | 4         | 2         |
| 10                  | SH2152 | Professional Communication Skill Development Laboratory | 0         | 0        | 2         | 1         |
| <b>TotalCredits</b> |        |   | <b>18</b> | <b>0</b> | <b>10</b> | <b>25</b> |

**SEMESTERVI**

| Sl.No | CourseCode | CourseName | Credits |   |   |   |
|-------|------------|------------|---------|---|---|---|
|       |            |            | L       | T | P | C |
|       |            |            |         |   |   |   |





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DEPARTMENT OF MECHATRONICS ENGINEERING  
Minutes of Meeting–BoS –19<sup>th</sup> March, 2022

| Theory              |        |                                  |           |          |          |           |
|---------------------|--------|----------------------------------|-----------|----------|----------|-----------|
| 1                   | GE2351 | Principles of Management         | 3         | 0        | 0        | 3         |
| 2                   | MT2351 | Fluid Power systems              | 3         | 0        | 0        | 3         |
| 3                   | MT2352 | Industrial Automation            | 3         | 0        | 0        | 3         |
| 4                   | MT2353 | Machine Design                   | 3         | 0        | 0        | 3         |
| 5                   |        | Professional Elective-III        | 3         | 0        | 0        | 3         |
| 6                   |        | Professional Elective-IV         | 3         | 0        | 0        | 3         |
| 7                   |        | Online Course-I                  | -         | -        | -        | 3         |
| Practical           |        |                                  |           |          |          |           |
| 8                   | MT2361 | Fluid Power systems Laboratory   | 0         | 0        | 4        | 2         |
| 9                   | MT2362 | Industrial Automation Laboratory | 0         | 0        | 4        | 2         |
| <b>TotalCredits</b> |        |                                  | <b>18</b> | <b>0</b> | <b>8</b> | <b>25</b> |

SEMESTER VII

| Sl.No | CourseCode | CourseName | Credits |   |   |   |
|-------|------------|------------|---------|---|---|---|
|       |            |            | L       | T | P | C |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

| Theory              |        |  |           |          |          |           |
|---------------------|--------|--|-----------|----------|----------|-----------|
| 1                   | MT2401 | Computer Aided Design and Manufacturing            | 3         | 0        | 0        | 3         |
| 2                   | MT2402 | Design of Mechatronics System                      | 3         | 0        | 0        | 3         |
| 3                   | MT2403 | Robotics and Machine Vision                        | 3         | 0        | 0        | 3         |
| 4                   |        | Professional Elective-V                            | 3         | 0        | 0        | 3         |
| 5                   |        | Professional Elective-VI                           | 3         | 0        | 0        | 3         |
| 6                   |        | Open Elective-II                                   | 3         | 0        | 0        | 3         |
| 7                   |        | Online Course-II                                   | -         | -        | -        | 3         |
| Practical           |        |  |           |          |          |           |
| 7                   | MT2411 | Computer Aided Design and Manufacturing Laboratory | 0         | 0        | 4        | 2         |
| 8                   | MT2413 | Robotics and Machine Vision System Laboratory      | 0         | 0        | 4        | 2         |
| <b>TotalCredits</b> |        |  | <b>18</b> | <b>0</b> | <b>8</b> | <b>25</b> |

**SEMESTER VIII**

| SI.No | CourseCode | CourseName | Credits |   |   |   |
|-------|------------|------------|---------|---|---|---|
|       |            |            | L       | T | P | C |



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**DEPARTMENT OF MECHATRONICS ENGINEERING**  
**Minutes of Meeting–BoS –19<sup>th</sup> March, 2022**

| Practical           |        |              |          |          |           |          |
|---------------------|--------|--------------|----------|----------|-----------|----------|
| 1                   | MT2451 | Project Work | 0        | 0        | 16        | 8        |
| <b>TotalCredits</b> |        |              | <b>0</b> | <b>0</b> | <b>16</b> | <b>8</b> |

Members approved the proposed R2021 Curriculum.

Members suggested to include Machine Kinematics in Machine Dynamics for Mechatronics Engineering Course and to rename the course as Mechanism of Machines.

**BOS 004.12**

**Dr. K. Kannan** presented the III & IV Semester Syllabus of R2021 for discussion and approval.

Members discussed about the design thinking course in detail as it is moved from audit course to Core Course.

Dr.T.Asokan enquired about the contents of Mathematics Laboratory in detail.

**BOS 004.13**

The BoS Coordinator Mr.A.Arulkumar AP/MTRE Proposed the vote of thanks.

*A. Arulkumar*  
23/03/2022

*(Signature)*  
23/03/22  
(Dr.K.Kannan)  
BoS Chairman – MTRE  
HOD / MTRE