

SCHOOL OF MECHANICAL ENGINEERING
KIIT, DEEMED TO BE UNIVERSITY, BHUBANESWAR-24

21-04-2019

NOTESHEET

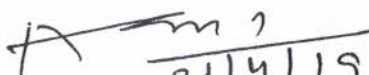
Sub: Approval of course curricula and syllabi for B.Tech, 2018 admitted batch

The course curricula and detailed syllabus for B.Tech, 2018 admitted batch students are prepared for four programme i.e.

- A. B.Tech, Mechanical Engineering
- B. B.Tech, Mechanical Engineering (Automobile)
- C. B.Tech, Mechatronics Engineering
- D. B.Tech, Aerospace Engineering

A meeting of the Board of Studies of School of Mechanical Engineering was convened on 13th April 2019 and the detailed course structures and syllabus for above programmes were approved. The views of the board members was also sought and incorporated while finalizing the structures and syllabus. The minutes of BOS along with the detailed course curricula and syllabi for above four programmes are attached herewith for kind reference.

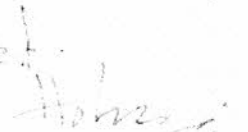
This is placed for your kind consideration and necessary approval please.

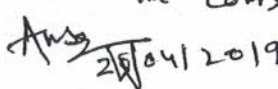
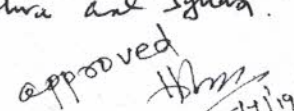

Dr A.K. Sahoo
21/4/19

Dean
School of Mechanical Engineering
Kalinga Institute of Industrial Technology
Deemed to be University, Bhubaneswar

Registrar forwarded 
20/04/19

Vice-Chancellor

please refer

Chairman (UG)
21/4/19

I have checked the course structure and syllabi. This may kindly be approved. 
20/04/2019
approved 
21/4/19

**SCHOOL OF MECHANICAL ENGINEERING
KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY (KIIT)
Deemed to be University**

BOARD OF STUDIES MEETING

MINUTES OF MEETING

The school level Board of Studies meeting was convened on 13th April 2019, 11.00AM at Conference Hall, SME to review the course structure and detail syllabi for all B. Tech in Mechanical, Mechanical (Automobile) and Mechatronics Engineering programmes for 2018 admitted batch.

Members Present

Prof. B.B. Biswal, Director, NIT Meghalaya
 Prof. Ranjit Kumar Sahoo, Professor, NIT Rourkela
 Prof. R. K. Paramaguru, Professor
 Prof. S. Singh, Professor
 Prof. K.B.Sahu, Professor
 Prof. S. Tripathy, Professor
 Prof. L. K. Pothal, Professor
 Prof. T. Mohanty, Professor
 Prof. Mrutyunjay Jena, Asso. Professor
 Prof. P. Chandrasekhar, Asso. Professor
 Prof. Prakash Ghose, Asst. Professor
 Prof. Ajaya Kumar Behera, Asst. Professor
 Prof. B. C. Routara, Professor
 Prof. A. K. Sahoo, Professor
 Prof. J.K.Das, Faculty, Electronics Engineering
 Prof. Purna Ch. Mishra, Professor

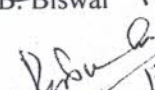
External member

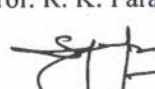
External member
 Member
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 Chairman
 Co-Chairman
 Invited Member
 Convener

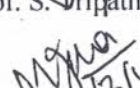
The course structure was reviewed and suitable modifications have been incorporated.

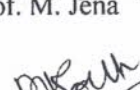
The new course structures and detail syllabi prepared for B. Tech. Mechanical, Mechanical (Automobile) and Mechatronics Engineering programmes have been approved (enclosed as Annexures).

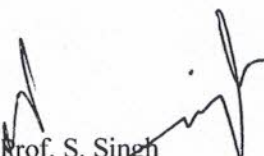

 Prof. B.B. Biswal 13/4/19

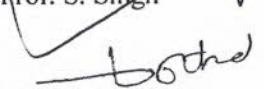

 Prof. R. K. Paramaguru 13/4/19

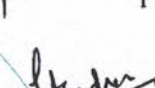

 Prof. S. Tripathy 13/4/19

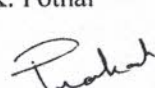

 Prof. M. Jena 13/4/19

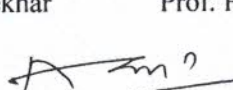

 Prof. B. C. Routara 13/04/2019

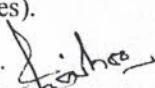

 Prof. S. Singh

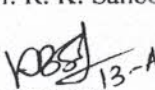

 Prof. L. K. Pothal

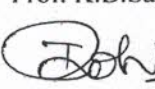

 Prof. P. Chandrasekhar 13/4/19

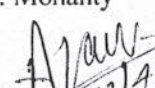

 Prof. P. Ghose 13/4/19

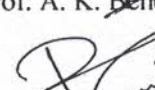

 Prof. A. K. Sahoo


 Prof. R. K. Sahoo


 Prof. K.B.Sahu 13-Apr-19


 Prof. T. Mohanty 13-04-19


 Prof. A. K. Behera 13/4/19


 Prof. Purna Ch. Mishra

**COURSE STRUCTURE FOR FIRST YEAR B. TECH PROGRAMME
MECHANICAL ENGINEERING
(SCHEME-I)
SEMESTER 1**

| Type | Sl. No | Subject Code | Course Title | L | T | P | Total | Credit |
|-----------------------|--------|--------------|----------------------------------|---|---|---|-------|--------|
| Theory | | | | | | | | |
| BS | 1 | MA 1003 | Mathematics-I | 3 | 1 | 0 | 4 | 4 |
| BS | 2 | PH 1007 | Physics | 3 | 1 | 0 | 4 | 4 |
| ES | 3 | EE 1003 | Basic Electrical Engineering | 3 | 0 | 0 | 3 | 3 |
| ES | 4 | ME 1003 | Engineering Mechanics | 3 | 0 | 0 | 3 | 3 |
| Practical | | | | | | | | |
| BS | 1 | PH 1097 | Physics Lab | 0 | 0 | 3 | 3 | 1.5 |
| ES | 2 | EE 1093 | Basic Electrical Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | | |
| ES | 3 | ME 1083 | Basic Manufacturing Systems | 0 | 1 | 2 | 3 | 2 |
| BS | 4 | CH 1081 | Environmental Science | 0 | 0 | 2 | 2 | 1 |
| Semester Total | | | | | | | 24 | 19.5 |

SEMESTER 2

| Type | Sl. No | Subject Code | Course Title | L | T | P | Total | Credit |
|-----------------------|--------|--------------|----------------------------|---|---|---|-------|--------|
| Theory | | | | | | | | |
| BS | 1 | MA 1004 | Mathematics-II | 3 | 1 | 0 | 4 | 4 |
| BS | 2 | CH 1007 | Chemistry | 3 | 0 | 0 | 3 | 3 |
| HS | 3 | HS 1005 | Professional Communication | 2 | 0 | 0 | 2 | 2 |
| BS | 4 | LS 1001 | Biology | 2 | 0 | 0 | 2 | 2 |
| Practical | | | | | | | | |
| ES | 1 | CS 1093 | Computer Programming | 0 | 2 | 4 | 6 | 4 |
| BS | 2 | CH 1097 | Chemistry Lab | 0 | 0 | 3 | 3 | 1.5 |
| Sessional | | | | | | | | |
| HS | 3 | HS 1085 | Language Lab | 0 | 0 | 2 | 2 | 1 |
| ES | 4 | CE 1083 | Engineering Graphics | 0 | 1 | 2 | 3 | 2 |
| Semester Total | | | | | | | 25 | 19.5 |

MP
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Shubhash
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Pradip
Arjun
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COURSE STRUCTURE FOR B. TECH IN MECHANICAL ENGINEERING

SEMESTER- 3

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|--|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | MA 2005 | Mathematics-III (Civil & Mechanical) | 3 | 1 | 0 | 4 | 4 |
| 2 | ME 2021 | Fluid Mechanics and Hydraulic Machines | 3 | 1 | 0 | 4 | 4 |
| 3 | ME 2027 | Materials Science and Engineering | 3 | 0 | 0 | 3 | 3 |
| 4 | ME 2029 | Mechanics of Solids | 3 | 1 | 0 | 4 | 4 |
| 5 | ME 2031 | Engineering Thermodynamics | 3 | 1 | 0 | 4 | 4 |
| 6 | EC 2025 | Principles of Electronics Engineering | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 22 | 22 |
| Practical | | | | | | | |
| 1 | EC 2095 | Electronics Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | ME 2091 | Material Testing Lab | 0 | 0 | 2 | 2 | 1 |
| 3 | ME 2097 | Fluid Mechanics and Hydraulic Machines Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | ME 2083 | Machine Drawing and Computer Aided Design | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 8 | 4 |
| Semester Total | | | | | | 30 | 26 |

SEMESTER- 4

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|--|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | ME 2010 | Basic Manufacturing Processes | 3 | 0 | 0 | 3 | 3 |
| 2 | ME 2013 | Kinematics and Dynamics of Machines | 3 | 1 | 0 | 4 | 4 |
| 3 | ME 2022 | Internal Combustion Engines and Gas Turbines | 3 | 0 | 0 | 3 | 3 |
| 4 | ME 2024 | Industrial Engineering and Operations Research | 3 | 0 | 0 | 3 | 3 |
| 5 | ME 2026 | Engineering Metrology | 3 | 0 | 0 | 3 | 3 |
| 6 | | HS Elective-I | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 19 | 19 |
| Practical | | | | | | | |
| 1 | ME 2093 | Machine Kinematics and Dynamics Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | ME 2092 | Metrology and Instrumentation Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | ME 2085 | Manufacturing Practices | 0 | 1 | 2 | 3 | 2 |
| 2 | HS 2081 | Business Communication | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 9 | 5 |
| Semester Total | | | | | | 28 | 24 |

SEMESTER – 5

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|--|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | ME 3019 | Manufacturing Processes and Automation | 3 | 1 | 0 | 4 | 4 |
| 2 | ME 3021 | Heat Transfer | 3 | 1 | 0 | 4 | 4 |
| 3 | ME 3023 | Design of Machine Elements-I | 3 | 0 | 0 | 3 | 3 |
| 4 | | Department Elective-I | 3 | 0 | 0 | 3 | 3 |
| 5 | | Department Elective-II | 3 | 0 | 0 | 3 | 3 |
| 6 | | Department Elective-III | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 20 | 20 |
| Practical | | | | | | | |
| 1 | ME 3093 | Computational Techniques Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | ME 3095 | Heat Transfer Lab | 0 | 0 | 2 | 2 | 1 |
| 3 | ME 3097 | Advanced Manufacturing Processes Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | ME 3081 | Machine Design | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 8 | 4 |
| Semester Total | | | | | | 28 | 24 |

SEMESTER- 6

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|------------------------------------|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | ME 3014 | Refrigeration and Air Conditioning | 3 | 0 | 0 | 3 | 3 |
| 2 | ME 3016 | Metal Cutting and Tool Design | 3 | 1 | 0 | 4 | 4 |
| 3 | ME 3018 | Design of Machine Elements-II | 3 | 0 | 0 | 3 | 3 |
| 4 | | Department Elective-IV | 3 | 0 | 0 | 3 | 3 |
| 5 | | Department Elective-V | 3 | 0 | 0 | 3 | 3 |
| 6 | | Open Elective –I / (MI-1) | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 19 | 19 |
| Practical | | | | | | | |
| 1 | ME 3092 | ICE and RAC Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | ME 3096 | Mechanical Engineering Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | ME 3082 | Minor Project | 0 | 0 | 4 | 4 | 2 |
| 2 | ME 3086 | Computer Aided Design and Analysis | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 10 | 5 |
| Semester Total | | | | | | 29 | 24 |

SEMESTER- 7

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|------------------------|-------------|-------------------------------------|-----|-----|-----|----------|-----------|
| Theory | | | | | | | |
| 1 | HS 4001 | Professional Practice, Law & Ethics | 2 | 0 | 0 | 2 | 2 |
| 2 | | Open Elective-II / (MI-2) | 3 | 0 | 0 | 3 | 3 |
| (3) | | (MI-3) | (3) | (0) | (0) | (3) | (3) |
| (4) | | (MI-4) | (3) | (0) | (0) | (3) | (3) |
| (5) | | (HO-1) | (3) | (0) | (0) | (3) | (3) |
| Total of Theory | | | | | | 5 | 5 |
| Sessional | | | | | | | |
| 1 | ME 4081 | Project –I/Internship | | | | | 3 |
| 2 | ME 4083 | Practical Training | - | - | - | - | 2 |
| (3) | | (Project – Minor / Lab) | (0) | (0) | (4) | (4) | (2) |
| Semester Total | | | | | | | 10 |

SEMESTER- 8

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|------------------------|-------------|-------------------------|-----|-----|-----|----------|-----------|
| Theory | | | | | | | |
| 1 | | HS Elective-II | 3 | 0 | 0 | 3 | 3 |
| (2) | | (MI – 5) | (3) | (0) | (0) | (3) | (3) |
| (3) | | (MI – 6) | (3) | (0) | (0) | (3) | (3) |
| (4) | | (HO-2) | (3) | (0) | (0) | (3) | (3) |
| (5) | | (HO-3) | (3) | (0) | (0) | (3) | (3) |
| Total of Theory | | | | | | 3 | 3 |
| Sessional | | | | | | | |
| 1 | ME 4082 | Project-II / Internship | | | | | 10 |
| Semester Total | | | | | | | 13 |

MI – Minor

HO – Honors

LIST OF HS ELECTIVES

HS Elective – I

| Sl. No | Course Code | Course Title | Credit |
|--------|-------------|---|--------|
| 1. | HS 2002 | Engineering Economics | 3 |
| 2. | HS 2008 | Economic Environment of India | 3 |
| 3. | HS 2010 | Financial Institutions, Markets and Regulations | 3 |
| 4. | HS 2012 | Development Economics | 3 |

HS Elective – II

| | | | |
|----|---------|---------------------------------|---|
| 1. | HS 3006 | Entrepreneurship | 3 |
| 2. | HS 3008 | Management Concepts & Practices | 3 |
| 3. | HS 3002 | Organizational Behaviour | 3 |
| 4. | HS 3004 | Human Resource Management | 3 |

LIST OF DEPARTMENT ELECTIVES

Dept. Elective-I

| | | | |
|----|---------|------------------------------------|---|
| 1. | ME 3025 | Optimization Techniques | 3 |
| 2. | ME 3026 | Mecatronics | 3 |
| 3. | ME 3027 | Plant layout and Material Handling | 3 |
| 4. | ME 3071 | Renewable Energy Technology | 3 |
| 5. | ME 3073 | Mechanics of Composite Materials | 3 |

Dept. Elective-II

| | | | |
|----|---------|--|---|
| 1. | ME 3024 | Mechanical Vibration and Noise Engineering | 3 |
| 2. | ME 3028 | Supply Chain Management | 3 |
| 3. | ME 3043 | Power Plant Engineering | 3 |
| 4. | ME 3045 | Metal Forming Processes | 3 |
| 5. | ME 3047 | Production and Operations Management | 3 |

Dept. Elective-III

| | | | |
|----|---------|--|---|
| 1. | ME 3022 | Principles of Turbomachines | 3 |
| 2. | ME 3051 | Finite Element Analysis | 3 |
| 3. | ME 3055 | Additive Manufacturing | 3 |
| 4. | ME 3057 | Machine Maintenance and Condition Monitoring | 3 |
| 5. | ME 3059 | Computational Fluid Dynamics | 3 |

Dept. Elective-IV

| | | | |
|----|---------|------------------------------|---|
| 1. | ME 3061 | Advanced Mechanics of Solids | 3 |
| 2. | ME 3063 | Automobile Engineering | 3 |
| 3. | ME 3065 | Combustion Engineering | 3 |
| 4. | ME 3067 | Cryogenics | 3 |
| 5. | ME 3069 | Total Quality Management | 3 |

Dept. Elective-V

| | | | |
|----|---------|---|---|
| 1. | EE 2009 | Electrical Machines and Power Electronics | 3 |
| 2. | ME 3029 | Robotics and Flexible Manufacturing Systems | 3 |
| 3. | ME 3030 | Product Life Cycle Management | 3 |
| 4. | ME 3052 | Nano Technology | 3 |
| 5. | ME 3054 | Gas Dynamics and Jet Propulsion | 3 |
| 6. | ME 3056 | Tribology | 3 |