

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

21-04-2019

NOTESHEET

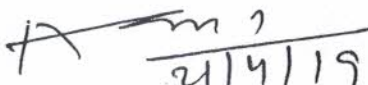
**Sub: Approval of course curricula and syllabi for B.Tech, 2018
admitted batch**

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.

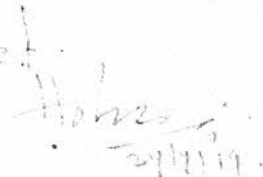
This is placed for your kind consideration and necessary approval please.

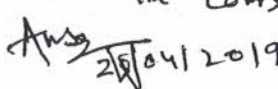
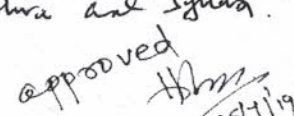

Dr A.K. Sahoo
21/4/19

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)

I have checked the course structure and syllabi. This may kindly
be approved. Ans. 
25/04/2019
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

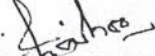
External member

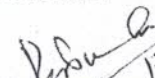
External member
 Member
 -do-
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 Chairman
 Co-Chairman
 Invited Member
 Convener

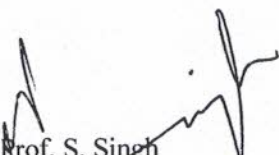
The course structure was reviewed and suitable modifications have been incorporated.

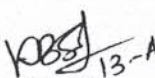
The new course structures and detail syllabi prepared for B. Tech. Mechanical, Mechanical (Automobile) and Mechatronics Engineering programmes have been approved (enclosed as Annexures).

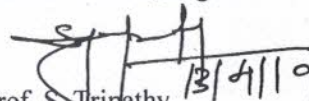

 Prof. B.B. Biswal 13/4/19

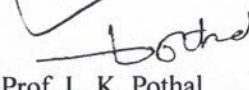

 Prof. R. K. Sahoo

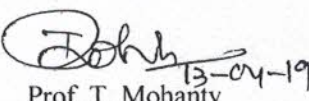

 Prof. R. K. Paramaguru 13/4/19

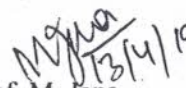

 Prof. S. Singh


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

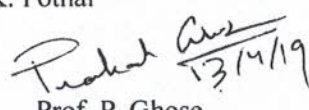

 Prof. S. Tripathy 13/4/19

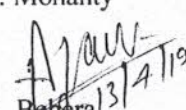

 Prof. L. K. Pothal

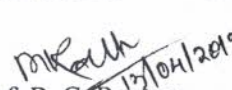

 Prof. T. Mohanty 13-04-19

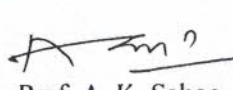

 Prof. M. Jena 13/4/19



 Prof. P. Chandrasekhar 13/4/19


 Prof. P. Ghose 13/4/19


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


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


 Prof. A. K. Sahoo


 Prof. Purna Ch. Mishra

COURSE STRUCTURE FOR B. TECH PROGRAM IN AEROSPACE ENGINEERING

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 | LS1001 | 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 |

Handwritten signatures and notes:
 A...
 Dr. S. P. Kar...
 (Dr. S. P. Kar)
 20.11
 ...
 ...

COURSE STRUCTURE FOR B. TECH IN AEROSPACE 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 2015 | Manufacturing Technology | 3 | 0 | 0 | 3 | 3 |
| 3 | AS 2003 | Introductory Aerodynamics | 3 | 0 | 0 | 3 | 3 |
| 4 | AS 2005 | Aerospace Structures-I | 3 | 1 | 0 | 4 | 4 |
| 5 | AS 2007 | Aerospace Thermodynamics | 3 | 0 | 0 | 3 | 3 |
| 6 | AS 2010 | Aerospace Materials Technology | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 20 | 20 |
| Practical | | | | | | | |
| 1 | AS 2091 | Aerospace Thermodynamics Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | AS 2092 | Aerospace Structures Lab-I | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | ME 2083 | Machine Drawing and Computer Aided Design | 0 | 0 | 2 | 2 | 1 |
| 2 | ME 2085 | Manufacturing Practices | 0 | 1 | 2 | 3 | 2 |
| Total of Practical & Sessional | | | | | | 9 | 5 |
| Semester Total | | | | | | 29 | 25 |

SEMESTER- 4

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|------------------------------------|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | AS 2002 | Automatic Control Theory | 3 | 0 | 0 | 3 | 3 |
| 2 | AS 2012 | Aerospace Structures-II | 3 | 1 | 0 | 4 | 4 |
| 3 | AS 2014 | Aircraft Systems & Instrumentation | 3 | 0 | 0 | 3 | 3 |
| 4 | AS 2016 | Aerodynamics - I | 3 | 1 | 0 | 4 | 4 |
| 5 | AS 2018 | Propulsion - I | 3 | 1 | 0 | 4 | 4 |
| 6 | | HS Elective-I | 3 | 0 | 0 | 3 | 3 |
| Total of Theory | | | | | | 21 | 21 |
| Practical | | | | | | | |
| 1 | ME 2091 | Material Testing Lab | 0 | 0 | 2 | 2 | 1 |
| 2 | AS 2094 | Aerodynamics Lab - I | 0 | 0 | 2 | 2 | 1 |
| 3 | AS 2096 | Aerospace Structures Lab-II | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | HS 2081 | Business Communication | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 8 | 4 |
| Semester Total | | | | | | 29 | 25 |

SEMESTER- 5

| Sl. No | Course Code | Course Title | L | T | P | Total | Credit |
|---|-------------|---------------------------|---|---|---|-----------|-----------|
| Theory | | | | | | | |
| 1 | AS 3005 | Aerodynamics – II | 3 | 1 | 0 | 4 | 4 |
| 2 | AS 3007 | Propulsion – II | 3 | 1 | 0 | 4 | 4 |
| 3 | AS 3015 | Aircraft Performance | 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 | AS 3093 | Aerodynamics Lab - II | 0 | 0 | 2 | 2 | 1 |
| 2 | AS 3095 | Propulsion Lab | 0 | 0 | 2 | 2 | 1 |
| 3 | AS 3096 | Aerospace Measurement Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | AS 3081 | Aircraft Systems | 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 | AS 3010 | Aircraft Stability and Control | 3 | 0 | 0 | 3 | 3 |
| 2 | AS 3012 | Space Mechanics | 3 | 0 | 0 | 3 | 3 |
| 3 | AS 3014 | Avionics | 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 | | | | | | 18 | 18 |
| Practical | | | | | | | |
| 1 | AS 3094 | Avionics Lab | 0 | 0 | 2 | 2 | 1 |
| Sessional | | | | | | | |
| 1 | AS 3082 | Minor Project | 0 | 0 | 4 | 4 | 2 |
| 2 | AS 3084 | FEM & CFD Analysis | 0 | 1 | 2 | 3 | 2 |
| 3 | AS 3086 | Aeroengine and Airframe | 0 | 0 | 2 | 2 | 1 |
| Total of Practical & Sessional | | | | | | 11 | 6 |
| 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 | AS 4081 | Project-I / Internship | | | | | 3 |
| 2 | AS 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 | AS 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. | AS 3032 | Theory of Aero-elasticity | 3 |
| 2. | AS 3038 | Aviation Fuels & Combustion | 3 |
| 3. | ME 3071 | Renewable Energy Technology | 3 |
| 4. | ME 3073 | Mechanics of Composite Materials | 3 |
| 5. | ME 3025 | Optimization Techniques | 3 |

Dept. Elective-II

| | | | |
|----|---------|--|---|
| 1. | AS 3031 | Computational Aerodynamics | 3 |
| 2. | ME 3024 | Mechanical Vibration and Noise Engineering | 3 |
| 3. | ME 3028 | Supply Chain Management | 3 |
| 4. | ME 3043 | Power Plant Engineering | 3 |
| 5. | ME 3047 | Production and Operations Management | 3 |

Dept. Elective-III

| | | | |
|----|---------|----------------------------------|---|
| 1. | AS 3035 | Satellites & Space System Design | 3 |
| 2. | AS 3037 | Airframe Repair & Maintenance | 3 |
| 3. | ME 3022 | Principles of Turbo-machines | 3 |
| 4. | ME 3051 | Finite Element Analysis | 3 |
| 5. | ME 3059 | Computational Fluid Dynamics | 3 |

Dept. Elective-IV

| | | | |
|----|---------|----------------------------|---|
| 1. | AS 3040 | Rockets & Missiles | 3 |
| 2. | AS 3046 | Rotor Dynamics & Tribology | 3 |
| 3. | ME 3067 | Cryogenics | 3 |
| 4. | ME 3065 | Combustion Engineering | 3 |
| 5. | ME 3069 | Total Quality Management | 3 |

Dept. Elective-V

| | | | |
|----|---------|--------------------------------|---|
| 1. | AS 3048 | Helicopter Aerodynamics | 3 |
| 2. | AS 3050 | Airport & Airlines Management | 3 |
| 3. | AS 3056 | Introduction to UAV Technology | 3 |
| 4. | ME 3030 | Product Life Cycle Management | 3 |
| 5. | ME 3052 | Nano Technology | 3 |