Visvesvaraya Technological University, Belagavi

Outcome Based Education and Choice Based Credit System (OBE & CBCS)

Scheme of Teaching and Examination 2018-19

Of

M.Tech – Part Time.

IN

# AVIONICS SYSTEMS



Board Of Studies in Aeronautical Sciences

Dated Aug – 2018

Visvesvaraya Technological University, Belagavi

Scheme of Teaching and Examination 2018-19

M.Tech (Avionics Systems) - PT

Outcome Based Education and Choice Based Credit System (OBE & CBCS)

**First Semester Part Time (Part I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Teaching hours / week** | | **Examination** | | | | Credits |
| **Theory** | **Practical/ Field work/ Assignment** | Duration in Hours | CIE Marks | SEE Marks | Total Marks |
| 18 MAV 11 | Applied Mathematics | 4 | -- | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 12 | Aircraft Communication Systems and Standards | 4 | 2 | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 13 | Fundamentals of Avionics | 4 | 2 | 3 | 40 | 60 | 100 | 4 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Total | | 12 | 4 | 9 | 120 | 180 | 300 | 12 |

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**Second Semester Part Time-(Part-I)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Teaching hours / week** | | **Examination** | | | | Credits |
| **Theory** | **Practical/ Field work/ Assignment** | Duration in Hours | CIE Marks | SEE Marks | Total Marks |
| 18 MAV 21 | Flight Dynamics and Control | 4 | 2 | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 22 | Aircraft Navigation Systems | 4 | 2 | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 23 | Aircraft Display Systems | 4 | .. | 3 | 40 | 60 | 100 | 4 |
| Total | | 12 | 4 | 9 | 120 | 180 | 300 | 12 |

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**First Semester Part Time (Part II)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Teaching hours / week** | | **Examination** | | | | Credits |
| **Theory** | **Practical/ Field work/ Assignment** | Duration in Hours | CIE Marks | SEE Marks | Total Marks |
| 18 MAV 14 | Flight Instrumentation & Flight Management Systems | 4 | -- | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 15 | Aircraft System Engineering & Standards | 4 | -- | 3 | 40 | 60 | 100 | 4 |
| 18 MAVL 16 | Avionics System Lab-1 | .. | 4 | 3 | 40 | 60 | 100 | 2 |
| 18 RMI 17 | Research Method and IPR | 2 | -- | 3 | 40 | 60 | 100 | 2 |
|  |  |  |  |  |  |  |  |  |
| Total | | 10 | 4 | 12 | 160 | 240 | 400 | 12 |

Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I Semester (Part-2) and II Semester (part-1) and /or II Semester (part-2) and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted in the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.

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Scheme of Teaching and Examination 2018-19

M.Tech (Avionics Systems) - PT

**Second Semester Part Time (Part II)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | Teaching hours / week | | Examination | | | | Credits |
| Theory | Practical/ Field work/ Assignment | Duration in Hours | CIE Marks | SEE Marks | Total Marks |
| 18 MAV 24X | Professional Elective -1 | 4 | -- | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 25X | Professional Elective -2 | 4 | -- | 3 | 40 | 60 | 100 | 4 |
| 18 MAVL 26 | Avionics System Lab-2 | .. | 4 | 3 | 40 | 60 | 100 | 2 |
| 18 MAV 27 | Technical Seminar | .. | 2 | -- | 40 | 60 | 100 | 2 |
|  |  |  |  |  |  |  |  |  |
| Total | | 8 | 6 | 9 | 160 | 240 | 400 | 12 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Professional Elective-1 | | |  | Professional Elective-2 | | |
| 1 | 18 MAV 241 | Embedded Computing Systems |  | 1 | 18 MAV 251 | Fault Tolerant Systems |
| 2 | 18 MAV 242 | Machine Learning Techniques |  | 2 | 18 MAV 252 | Big Data |
| 3 | 18 MAV 243 | Artificial Intelligence & Agent Technology |  | 3 | 18 MAV 253 | Unmanned Aerial Vehicles |

Note:

1. Technical Seminar: CIE marks shall be awarded by a committee comprising of HoD as Chairperson, Guide/co-guide, if any, and a senior faculty of the department. Participation in the seminar by all postgraduate students of the same and other semesters of the programme shall be mandatory.

The CIE marks awarded for Technical Seminar, shall be based on the evaluation of Seminar Report, Presentation skill and Question and Answer session in the ratio 50:25:25.

2. Internship: All the students shall have to undergo mandatory internship of 6 weeks during the vacation of I Semester (Part-2) and II Semester (part-1) and /or II Semester (part-2) and III semesters. A University examination shall be conducted during III semester and the prescribed credit shall be counted in the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take-up/complete the internship shall be declared as failed and have to complete during the subsequent University examination after satisfying the internship requirements.

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**III Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Teaching hours / week** | | **Examination** | | | | Credits |
| **Theory** | **Practical/ Field work/ Assignment** | Duration in Hours | CIE Marks | SEE Marks | Total Marks |
| 18 MAV 31 | Aircraft Propulsion, Utility Systems & Diagnostics | 4 | .. | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 32X | Professional Elective-3 | 4 | .. | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 33X | Professional Elective-4 | 4 | .. | 3 | 40 | 60 | 100 | 4 |
| 18 MAV 34 | Project Work Phase -I | .. | 2 | .. | 100 | -- | 100 | 2 |
| 18 MAVI35 | Internship |  |  | 3 | 40 | 60 | 100 | 6 |
| Total | | 12 | 2 | 12 | 260 | 240 | 500 | 20 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Professional Elective-3 | | |  | Professional Elective-4 | | |
| 1 | 18 MAV 321 | Mission Avionics |  | 1 | 18 MAV 331 | Flight Testing of Avionics Systems |
| 2 | 18 MAV 322 | Cloud Computing |  | 2 | 18 MAV 332 | Flight Data Sciences |
| 3 | 18 MAV 323 | Fuzzy Logic and Neural Networks |  | 3 | 18 MAV 333 | Micro Electro Mechanical Systems |

Note:

1. Project Phase-1: Students in consultation with the guide/co-guide if any, shall pursue literature survey and complete the preliminary requirements of selected Project work. Each student shall prepare relevant introductory project document, and present a seminar.

CIE marks shall be awarded by a committee comprising of HoD as Chairperson, Guide/co-guide if any, and a senior faculty of the department. The CIE marks awarded for project work phase -1, shall be based on the evaluation of Project Report, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE (University examination) shall be as per the University norms.

2. Internship: Those, who have not pursued /completed the internship shall be declared as failed and have to complete during subsequent University examinations after satisfying the internship requirements. Internship SEE (University examination) shall be as per the University norms.

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**IV Semester**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course Code** | **Course Title** | **Teaching hours / week** | | **Examination** | | | | Credits |
| **Theory** | **Practical/ Field work/ Assignment** | Duration | CIE Marks | Theory / Practical Marks | Total Marks |
| 18 MAV 41 | Project Work Phase-2 | .. | 4 | 3 | 40 | 60 | 100 | 20 |
| Total | | .. | 4 | 3 | 40 | 60 | 100 | 20 |
| **Grand Total: (From Ist to VIth semester):** | | | | | | | | **88** |

Note:

1. Project Phase-2:

CIE marks shall be awarded by a committee comprising of HoD as Chairperson, Guide/co-guide, if any, and a Senior faculty of the department. The CIE marks awarded for project work phase -2, shall be based on the evaluation of Project Report subjected to plagiarism check, Project Presentation skill and Question and Answer session in the ratio 50:25:25.

SEE shall be at the end of IV semester. Project work evaluation and Viva-Voce examination (SEE), after satisfying the plagiarism check, shall be as per the University norms

Note: