Mathematics I

Code: M101

Contact: 3L + 1T

Credits: 4

Syllabus

Course outcome:

|  |  |
| --- | --- |
| CO | Statement |
| C01 | Able to calculate rank of matrix, characteristicequation & roots & use the applicability of Caylay Hamilton Theorem to find inverse of matrix along with eigen value, eigen vector problemwhich is very important in many engineering application. |
| C02 | Able to develop skill of higher derivative of ordinary expansion of functions (Taylor,Maclaurin) in ascending power of variable & value of the function in neighboured of some points. |
| C03 | Explain vector calculus arising in different Engineering branch and able to form mathematical & physical interpretation of its solution which place important role in all branches of Engineering. |
| CO4 | Apply the fundamental concepts of partial derivatives, Jacobian, chain rule in different engineering branch and capable to form mathematical & physical interpretation of its solution that place important role in all branches of Engineering. |

**PSO:**

**PSO1:**Ability to Identify, Formulate & Solve problems of basics of Electronics & Communication Engineering and to apply them to various areas like Analog& digital Circuits, Signal & systems, Communication, VLSI, Embedded System etc.

**PSO2:**Ability to design the systems of Electronics & Communication Engineering using advanced hardware and software tools with analytical skills to achieve the Soceital needs.

**PSO3:** Knowledge of social & environmental awareness along with ethical responsibility to achieve a successful career addresses the real world applications using optimal resources as an entrepreneur.

Mapping with CO with PSO

|  |  |  |  |
| --- | --- | --- | --- |
|  | PSO1 | PSO2 | PSO3 |
| CO1 | 3 | 2 | 2 |
| CO2 | 2 | 1 | 1 |
| CO3 | 3 | 2 | 2 |
| CO4 | 3 | 2 | 2 |
| AVG OF EC502 | 2.75=3 | 1.75=2 | 1.75=2 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| COs | Class test (T1)  (30) | Slot test-1 (T2) (30) | Assignment  (T3) (30) | Slot test-2 (T4) (30) |
| CO1 | Q1,Q2, Q3 | Q1,Q2,Q3 | Q1 | - |
| CO2 | - | Q4,Q5,Q6 | Q2 | - |
| CO3 | Q4,Q5 | - | Q3 | Q1,Q2,Q3 |
| CO4 | - | - | Q4 | Q4,Q5,Q6 |

**CO attainment for a course ES 101:**

Target level 1: 60% students must score 60% and above

Target level 2: 70% students must score 60% and above

Target level 3: 80% students must score 60% and above

Total number of student for the batch 2015-2019 in 1st year=126

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course outcome | Avg. grading on scale of 3 | Distribution % | | |
| 3 | 2 | 1 |
| CO1 |  | 80/126=63.5% |  |  |
| CO2 |  | 80/126=63.5% |  |  |
| CO3 |  | 76/126=60% |  |  |
| CO4 |  | 82/126=65.2% |  |  |

|  |  |  |
| --- | --- | --- |
| CO and PO Scale | 3 | Strongly Related |
| 2 | Moderately Related |
| 1 | Low |

CO achieved if percentage (%) of students is greater than or equal to 60

|  |  |  |
| --- | --- | --- |
| Course outcomes | % of students achieved CO | CO result (achieved) (Y/N) |
| CO1 | 63.5% | Y |
| CO2 | 63.5% | Y |
| CO3 | 60% | Y |
| CO4 | 65.2% | Y |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO** | **Statement** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| M101.1 | Able to calculate rank of matrix, characteristicequation & roots & use the applicability of Caylay Hamilton Theorem to find inverse of matrix along with eigen value, eigen vector problemwhich is very important in many engineering application. | 3 | 2 | 2 | 1 | - | - | - | - | 1 | - | - | 2 |
| M101.2 | Able to develop skill of higher derivative of ordinary expansion of functions (Taylor,Maclaurin) in ascending power of variable & value of the function in neighboured of some points. | 2 | 1 | 1 | 1 | 1 | - | - | - | - | - | - | 2 |
| M101.3 | Explain vectorcalculus arising in different Engineering branch and able to form mathematical & physical interpretation of its solution which place important role in all branches of Engineering. | 3 | 2 | 2 | 2 | 2 | 1 | - | - | 1 | - | - | 2 |
| M101.4 | Apply the fundamental concepts of partial derivatives, Jacobian, chain rule in different engineering branch and capable to form mathematical & physical interpretation of its solution that place important role in all branches of Engineering | 3 | 2 | 2 | 2 | 1 | - | - | - | - | - | - | 2 |
| M101 | | 3 | 2 | 2 | 2 | 1 | 1 | - | - | 1 | - | - | 2 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| M101 | 3 | 2 | 2 | 2 | 1 | 1 | - | - | 1 | - | - | 2 |

Result of attainment of POs (CIE)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course | COs | CO Attainment | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| M101 | CO1 | 63.5% | 63.5% | 42.4% | 42.4% | 21.2% | - | - | - | - | 21.13% | - | - | 42.4% |
| CO2 | 63.5% | 42.4% | 21.13% | 21.13% | 21.13% | 21.13% | - | - | - | - | - | - | 21.13% |
| CO3 | 60% | 60% | 40% | 40% | 40% | 40% | 20% | - | - | 20% | - | - | 40% |
| CO4 | 65.2% | 65.2% | 43.5% | 43.5% | 43.5% | 21.74% | - | - | - | - | - | - | 43.5% |
| AVG of M101 |  |  | 57.8% | 36.76% | 36.76% | 31.46% | 27.62% | 20% | - | - | 20.75% | - | - | 36.76% |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SL No. | Course | % of students achieved >=60% | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| 1 | M101 | 44.44% | 44.44% | 30% | 30% | 30% | 15% | 15% | - | - | 15% | - | - | 30% |

**CO-PSO mapping**

|  |  |  |  |
| --- | --- | --- | --- |
|  | PSO1 | PSO2 | PSO3 |
| CO1 | 3 | 2 | 2 |
| CO2 | 2 | 1 | 1 |
| CO3 | 3 | 2 | 2 |
| CO4 | 3 | 2 | 2 |
| AVG OF M101 | 2.75=3 | 1.75=2 | 1.75=2 |

**Result of attainment of PSOs (CIE) ( NB : The following table to be generated considering mapping of COs with PSOs)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Course | COs | CO Attainment | PSO1 | PSO2 | PSO3 |
| M101 | CO1 | 63.5% | 63.5% | 42.4% | 42.4% |
| CO2 | 63.5% | 42.4% | 21.2% | 21.2% |
| CO3 | 60% | 60% | 40% | 40% |
| CO4 | 65.2% | 65.2% | 43.5% | 21.74% |
| AVG of M101 |  |  | 57.8% | 36.78% | 31.34% |

**Result of attainment of PSOs (SEE: Semester End Examination) ( NB : The following table to be generated considering mapping of COs with PSOs)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SL No. | Course | % of students achieved >=60% | PSO1 | PSO2 | PSO3 |
| 1 | M101 | 44.44% | 44.44% | 30% | 30% |