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| **Week 1** |  |  **UNIT – 1**  **FINITE DIFFERENCE OPERATORS** |
| **Assignments** |  |  |
| **Week 1** | **Day 1 1.1.18** | 1.1.1 Some definitions, Forward difference , Examples |
| **Week 1** | **Day 2 2.1.18** | 1.2.2 Backward difference, Examples |
| **Week 1** | **Day 3 3.1.18** | 1.3.3 Fundamental theorem of Difference calculus |
| **Week 1** | **Day 4 4.1.18** | 1.4.4 Properties of operator ,examples |
| **Week 1** | **Day 5 5.1.18** | 1.5.5 Difference of some functions ,examples |
| **Week 1** | **Day 6 6.1.18** | 1.6.6 Relation between operators |

**DPG DEGREE COLLEGE, GURUGRAM**

**LESSON PLAN FOR THE SEMESTER VI (A.Y.-2017-18)**

**Subject: NUMERICAL ANALYSIS**

**NAME OF FACULTY: HIMANI (Assistant Professor)**

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| **Week 2** |  |  |
| **Assignments** |  |  |
| **Week 2** | **Day 1 8.1.18** | 2.1.6 Examples  |
| **Week 2** | **Day 2 9.1.18** | 2.2.7 Effect of an error in tabular form ,examples |
| **Week 2** | **Day 3 10.1.18** | 2.3.8 One or more missing terms, examples |
| **Week 2** | **Day 4 11.1.18** | 2.4.1 Chapter-2 INTERPOLATION WITH EQUAL INTERVALS |
| **Week 2** | **Day 5 12.1.18** | 2.5.2 Newton Gregory formula for forward interpolation |
| **Week 2** | **Day 6 13.1.18** | 2.6.3 Newton Gregory formula for backward interpolation |

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| **Week 3** |  |  |
| **Assignments** |  |  |
| **Week 3** | **Day 1 15.1.18** | 3.1.3 Examples  |
| **Week 3** | **Day 2 16.1.18** | 3.2.4 Subdivision of intervals ,examples |
| **Week 3** | **Day 3 17.1.18** | 3.3.1 Chapter-3 INTERPOLATION WITH UNEQUAL INTERVALS, Divided difference |
| **Week 3** | **Day 4 18.1.18** | 3.4.2 Newton’s divided difference formula |
| **Week 3** | **Day 5 19.1.18** | 3.5.3 Relation between divided difference and ordinary difference, examples |
| **Week 3** | **Day 6 20.1.18** | 3.6.3 Examples continued |

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| **Week 4** |  |  |
| **Assignments** |  |  |
| **Week 4** | **Day 1 22.1.18** | 4.1.4 Lagrange’s interpolation formula ,examples |
| **Week 4** | **Day 2 23.1.18** | 4.2.5 Hermit’s interpolation formula , examples |
| **Week 4** | **Day 3 24.1.18** | 4.3.5 Examples continued |
| **Week 4** | **Day 4 25.1.18** | 4.4 test of chapter 1 |
| **Week 4** | **Day 5 27.1.18** | 4.5.1 **UNIT 2 central difference interpolation formulae** |
| **Week 4** | **Day 6 29.1.18** | 4.5.2 Gauss forward interpolation formula |

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| **Week 5** |  |  |
| **Assignments** |  |  |
| **Week 5** | **Day 1 30.1.18** | 5.1.3 Gauss backward interpolation formula |
| **Week 5** | **Day 2 31.1.18** | 5.2.4 Sterling formulae |
| **Week 5** | **Day 3 1.2.18** | 5.3.5 Bessel’s formula, examples |
| **Week 5** | **Day 4 2.2.18** | 5.4.5 Examples continued |
| **Week 5** | **Day 5 3.2.18** | 5.5.1 Chapter-5 PROBABILITY DISTRIBUTION ,A brief review of probability |
| **Week 5** | **Day 6 5.2.18** | 5.6.2 Random variable, discrete and continuous random variable |

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| **Week 6** |  |  |
| **Assignments** |  |  |
| **Week 6** | **Day 1 6.2.18** | 6.1 Test unit-1 |
| **Week 6** | **Day 2 7.2.18** | **6.2.3** Mean and variance of a random variable, examples |
| **Week 6** | **Day 3 8.2.18** | 6.3.4 Binomial distribution ,examples |
| **Week 6** | **Day 4 9.2.18** | 6.4.5 Mean and variance of binomial distribution |
| **Week 6** | **Day 5 10.2.18** | 6.5.6 Recurrence formulae ,examples |
| **Week 6** | **Day 6 12.2.18** | 6.6.7 Fitting a binomial distribution |

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| **Week 7** |  |  |
| **Assignments** |  |  |
| **Week 7** | **Day 1 13.2.18** | 7.1.8 Poisson distribution, examples |
| **Week 7** | **Day 2 14.2.18** | 7.2.8 Examples continued |
| **Week 7** | **Day 3 15.2.18** | 7.3.9 Fitting a Poisson distribution, examples |
| **Week 7** | **Day 4 16.2.18** | 7.4.10 Normal distribution ,examples |
| **Week 7** | **Day 5 17.2.18** | 7.5.11 Standard normal distribution ,examples |
| **Week 7** | **Day 6 19.2.18** | 7.6.12 Fitting of a normal curve ,examples |

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| **Week 8** |  | **UNIT-3 NUMERICAL DIFFRENTIATION** |
| **Assignments** |  |  |
| **Week 8** | **Day 1 20.2.18** | 8.1.1 Formulae for derivatives, examples |
| **Week 8** | **Day 2 21.2.18** | 8.2.1 Formulae for derivatives, examples continued |
| **Week 8** | **Day 3 22.2.18** | 8.3.1 Examples continued |
| **Week 8** | **Day 4 23.2.18** | 8.4.1 Chapter- 7 Eigen values and Eigen vectors ,properties of Eigen values |
| **Week 8** | **Day 5 24.2.18** | 8.5.1 Examples |
| **Week 8** | **Day 6 26.2.18** | Test of chapter 5 |

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| **Week 9** |  |  |
| **Assignments** |  |  |
| **Week 9** | **Day 1 27.2.18** | 9.1.2 Eigen values of real symmetric matrix ,examples |
| **Week 9** | **Day 2 28.2.18** | 9.2.3 Jacobi’s method for symmetric matrix ,examples |
| **Week 9** | **Day 3 2.3.18** | **9.3.4** Given’s method ,examples |
| **Week 9** | **Day 4 3.3.18** | 9.4.5 House-holder’s method ,examples |
| **Week 9** | **Day 5 5.3.18** | 9.5.6 Lanczo’s method ,examples |
| **Week 9** | **Day 6 6.3.18** | 9.6.6 Examples continued |

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| **Week 10** |  | **UNIT-4 NUMERICAL INTEGRATION** |
| **Assignments** |  |  |
| **Week 10** | **Day 1 7.3.18** | 10.1.1 Newton-cotes quadrature formula   |
| **Week 10** | **Day 2 8.3.18** | 10.2.2 Trapezoidal rule , Simpson’s one-third rule, examples |
| **Week 10** | **Day 3 9.3.18** | 10.3.3 Simpson’s three-eighth rule ,example |
| **Week 10** | **Day 4 10.3.18** | 10.4.4 Gauss’s Quadrature formulae , examples |
| **Week 10** | **Day 5 12.3.18** | 10.5.5 Chebyshev’s Quadrature formula |
| **Week 10** | **Day 6 13.3.18** | Test unit 2 |

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| **Week 11** |  | **Chapter 9 NUMERICAL SOLUTION OF ORDINARY DIFFERENTIAL EQUATIONS** |
| **Assignments** |  |  |
| **Week 11** | **Day 1 14.3.18** | 11.1.1 Euler’s method, examples |
| **Week 11** | **Day 2 15.3.18** | 11.2.2 Modified Euler’s Method , Examples |
| **Week 11** | **Day 3 16.3.18** | 11.3.3 Taylor’s series method, Examples |
| **Week 11** | **Day 4 17.3.18** | 11.4 Doubt class |
| **Week 11** | **Day 5 19.3.18** | 11.5.4 R. K. Method, Examples |
| **Week 11** | **Day 6 20.3.18** | 11.6 Test |

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| **Week 12** |  |  |
| **Assignments** |  |  |
| **Week 12** | **Day 1 21.3.18** | 12.1.5 Picard’s method, examples |
| **Week 12** | **Day 2 22.3.18** | 12.2.6 Predictor- Corrector method, Milne- Simpson’s method |
| **Week 12** | **Day 3 23.3.18** | 12.3.6 Examples |
| **Week 12** | **Day 4 24.3.18** | 12.4.6 Examples continued |
| **Week 12** | **Day 5 26.3.18** | 12.5.7 Adams – Bash forth method  |
| **Week 12** | **Day 6 27.3.18** | 12.6 Doubt class |

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| **Week 13** |  |  **PRACTICALS** |
| **Assignments** |  |  |
| **Week 13** | **Day 1 28.3.18** | 13.1.1 Newton – forward interpolation formulae |
| **Week 13** | **Day 2 29.3.18** | 13.2.2 Newton – backward interpolation formulae |
| **Week 13** | **Day 3 30.3.18** | 13.3.3 Demonstrate Lagrange’s interpolation formulae |
| **Week 13** | **Day 4 31.3.18** | 13.4.4 Demonstrate trapezoidal Rule |
| **Week 13** | **Day 5 2.4.18** | 13.5.5 Demonstrate Simpson’s one third rule |
| **Week 13** | **Day 6 3.4.18** | 13.6.6 Demonstrate Simpson’s three eight rule |

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| **Week 14** |  |  **PRACTICALS** |
| **Assignments** |  |  |
| **Week 14** | **Day 1 4.4.18** | 14.1.7 Demonstrate Euler’s method |
| **Week 14** | **Day 2 5.4.18** | 14.2.8 Demonstrate Euler’s modified method |
| **Week 14** | **Day 3 6.4.18** | 14.3.9 Demonstrate R.K. fourth order method |
| **Week 14** | **Day 4 7.4.18** | 14.4.10 Demonstrate Milne- Simpson’s method |
| **Week 14** | **Day 5 9.4.18** | 14.5 Doubt class |
| **Week 14** | **Day 6 10.4.18** | 14.6 Doubt class |

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| **Week 15** |  |  **REVISON** |
| **Assignments** |  |  |
| **Week 15** | **Day 1 11.4.18** | 15.1 **REVISON of 1st unit** |
| **Week 15** | **Day 2 12.4.18** | 15.2 **REVISON of 2nd unit** |
| **Week 15** | **Day 3 13.4.18** | 15.3 **REVISON of 3rd unit** |
| **Week 15** | **Day 4 14.4.18** | 15.4 **REVISON of 4th unit** |
| **Week 15** | **Day 5 16.4.18** | 15.5 Test  |
| **Week 15** | **Day 6 17.4.18** | 15.6 Test |