Integrated M.Sc. Mathematics (Semester - 7)
Assessment Policy
060090703: Advanced Numerical Analysis (Theory – 3 Credits)

Assessment Code	Assessment Type	Duration of each	Occurrence	Each of marks	Weightage in CIE of 40 marks	Remarks
A1	Unit Test	90 minutes	2	30	7 x 2 = 14	Unit Test – 1: After completion of Unit-1 and Sub Units 2.1, 2.2, 2.3 and 2.4 Unit Test – 2: After completion of Sub Units 2.5, 2.6, 2.7, 2.8, 2.9 and Unit – 3.
A2	Internal Examination	180 minutes	1	60	14 x 1 = 14	After completion of Unit-4, which covers all units.
A3	Assignment	10 days	4	10	1.25 x 4 = 5	Assignment - 1 : After completion of Unit-1 Assignment - 2 : After completion of Unit-2 Assignment - 3 : After completion of Unit-3 Assignment - 4 : After completion of Unit-4
A4	Practical Assignment	5 hours	1	40	7 x 1 = 7	Based on the application of Numerical Analysis

Assessment Type Classification:

Assessment Code :	A1	**Coverage of Content :**	Unit Test – 1: Covers Unit-1 and Sub Units 2.1, 2.2, 2.3 and 2.4 Unit Test – 2: Covers Sub Units 2.5, 2.6, 2.7, 2.8, 2.9 and Unit – 3.
Assessment Type :	Unit Test-1 and Unit Test -2	**Tentative Date :**	Unit Test – 1 : 16/09/2019 Unit Test – 2 : 11/10/2019
Kind of Question Format:	Que. 1) Long Questions (Any three out of four, each of 5 marks) Que. 2) Long Questions (Any three out of four, each of 5 marks)		
Assessment :	Formative		

Assessment Code :	A2	**Coverage of Content :**	All Units
Assessment Type :	Internal Examination	**Tentative Date :**	15/11/2019
Kind of Question Format:	Que. 1) Long Questions (Any three out of four, each of 5 marks) Que. 2) Long Questions (Any three out of four, each of 5 marks) Que. 3) Long Questions (Any three out of four, each of 5 marks) Que. 4) Long Questions (Any three out of four, each of 5 marks)		
Assessment :	Summative		

Assessment Code :	A3	**Coverage of Content :**	Assignment - 1 : After completion of Unit-1 Assignment - 2 : After completion of Unit-2 Assignment - 3 : After completion of Unit-3 Assignment - 4 : After completion of Unit-4
Assessment Type :	Assignment	**Tentative Date :**	Assignment - 1 : 20/08/2019 Assignment - 2 : 14/09/2019 Assignment - 3 : 12/10/2019 Assignment - 4 : 12/11/2019
Kind of Question Format:	1. Per method two examples have to solve. 2. Questions will be given on regular bases of completion of particular method. 3. Assignment has to be submitted after two days of completion of whole unit. 4. Zero mark will be given for submission after given deadline.		
Assessment :	Formative		

Assessment Code :	A4	**Coverage of Content :**	All Units
Assessment Type :	Practical Assignment	**Tentative Date :**	12/11/2019
Kind of Question Format:	1. Student has to select any one of the numerical method from any of the units and has to apply its application in real world situation. 2. The Assignment will be evaluated on the basis of four parameters Modeling, Level of problem address, and representation.		
Assessment :	Summative		

Integrated M.Sc. Mathematics (Semester - 7)
Assessment Policy
060090703: Advanced Numerical Analysis (Practical – 2 Credits)

Assessment Code	Assessment Type	Duration of each	Occurrence	Each of marks	Weightage in CIE of 40 marks	Remarks
A1	Practical Examination	120 minutes	2	20	10 x 2 = 20	Practical – 1: After completion of Unit-1 and Unit-2 Practical – 2: After completion of Unit-3 and Unit-4

Assessment Code :	A1	**Coverage of Content :**	Practical – 1: After completion of Unit-1 and Unit-2 Practical – 2: After completion of Unit-3 and Unit-4
Assessment Type :	Practical Examination	**Tentative Date :**	Practical – 1: 16/09/2019 Practical – 2: 11/10/2019
Kind of Question Format:	1. Practical Programme (1 out of 2, each of 10 Marks) 2. Journal Submission (5 Marks) 3. Viva Voce (5 Marks)		
Assessment :	Formative		

Assessment Type Mapping with Course Outcomes and Program Outcomes:

Course outcomes:

Upon completion of the course, students shall be able to

CO1: understand the fundamental characteristics of partial differential equations and their solutions by numerical analysis.

CO2: analyse finite difference approximations of elliptic partial differential equations.

CO3: derive the solution of one dimensional heat partial differential equation using different explicit and implicit numerical approaches.

CO4: get the numerical solution of one dimensional wave equation.

CO5: solve the first-order and second order hyperbolic partial differential equation using numerical methods.

CO6: formulate the various science and engineering problem into mathematical form and get its numerical solution using finite element approximation.

Programme Outcomes (PO)

PO1: Knowledge

Provides knowledge about the fundamentals of pure, applied and computing mathematics and its applications to students that creates the opportunities in industries and research centers.

PO2: Core Competence

Creates competency in science and mathematics to formulate, analyses and solve problem and/or also to pursue advanced study or research.

PO3: Breadth

Trains students having good knowledge in unearth core of academia and industry by the roots of mathematics.

PO4: Evaluation

Imparts in students to raise trial and error-based curiosity and problem-solving functionality with research based advanced tutorial for higher level decision makings tools.

Assessment Code	Course Outcomes						Programme Outcomes			
	CO1	CO2	CO3	CO4	CO5	CO6	PO1	PO2	PO3	PO4
A1	✓	✓	✓			✓	✓			✓
A2				✓		✓	✓	✓		✓
A3			✓			✓		✓	✓	✓
A4	✓	✓	✓	✓	✓	✓	✓			✓