J. J. COLLEGE OF ARTS AND SCIENCE (Autonomous)

Sivapuram, Pudukkottai – 622 422

(Re-Accredited by NAAC – 4th Cycle)

Affiliated to Bharathidasan University, Tiruchirappalli

DEPARTMENT OF MATHEMATICS

Minutes of the Board of Studies Meeting

Meeting No.: 08 **Date:** 02 – 05 – 2023

The Meeting of the Board of Studies in Information Technology (U.G. and P.G.) for the sixth **revision of the curricula** to be implemented from **2023-2024**, was conducted at 10.00 a.m. on Tuesday, 02.05.2023

Members Present:

S.No.	Name	Designation	Signature
1.	**Dr. O. Uma Maheswari** Assistant Professor and Head Department of Mathematics	Chairman	O. Uma 2/5/23
2.	**Dr. A.Tamilselvan** Professor and Head Department of Mathematics, Chair school of Mathematical Science Bharathidasan University, Tiruchirapalli.	University Nominee	A. Tam 02/05/2023
3.	**Dr. N. Anbazhagan** Professor and Head, Department of Mathematics, Alagappa University, Karaikudi.	Subject Expert	02.05.23
4.	**Dr.P. Pandiyan** Professor, Department of Statistics, Annamalai University Annamalai Nagar.	Subject Expert	2/5/23
5.	**Mr. A. Anandaraj** Assistant Professor	Member	A. A 02/05/23
6.	**Mr. K. Arun** Assistant Professor	Member	
7.	**Ms. S. Kanaka** Assistant Professor	Member	02/5/23
8.	**Dr. M. Kavitha** Assistant Professor	Member	M. 2/5/23
9.	**Ms. R.Rajakumari** PG Assistant in Mathematics, Government Higher Secondary School, Malaiyur.	Representative from Industry	02/05/23
10.	**Ms. P. Revathi** D/O VR. Pannerselvam 7/6 Perumalpuram street, Konapet Thirumayam(TK), Pudukkottai	Alumnus	– ABSENT –

The Chairman, Dr.O. Uma Maheswari chaired the meeting and welcomed all the members to the Eighth BOS Meeting. After the brief introduction, the agenda listed below were taken up for discussion and the following resolutions were passed.

It was resolved to

1. Include **75 % of Mandatory inclusion** content from model syllabus and **25 % of Preferential inclusion** by our Department as per the instructions from **TANSCHE and the Parent University,** to preserve equivalence in U.G. and P.G. Degree Programmes to enable student Mobility to be implemented from the academic year 2023 – 2024 onwards is framed and restructured following the guidelines laid down by the UGC - LOCF and Tamil Nadu State Council for Higher Education (TANSCHE) and the Parent University.
2. evaluate the Syllabus followed during the Academic Year 2022 – 2023 based on the first Semester Results.
3. analyze the previous Curriculum based on the feedback received from the Teachers, Employers, Students and the Alumni.
4. approve the Curriculum, Course Structure (Syllabi) and Text Books recommended for Implementation from 2023-2024 onwards.
5. have the following structure for the UG/PG Programmes respectively

Distribution of Courses - UG

Part	Course	No. of. Course	Credit	Marks
I	Language – Tamil / Hindi / French	04	12	400
II	Language – English	04	12	400
III	Core Courses	15	84	2300
	Discipline Specific Electives (DSE)	08		
IV	Skill Enhancement Course (SBE)/Generic Elective Courses	08	31	1600
	Ability Enhancement Compulsory Courses (AECC)	04		
	Foundation Course(1),Environmental Studies(1) Value Education(1),Summer Internship(1)	04		
V	Extension Activity	-	1	-
	Grand Total	**47**	**140**	**4700**

Distribution of Courses - PG

Sl. No	Course	No. of. Course	Credit	Marks
1	Core Courses	14	54	1400
2	Elective Course(Discipline/Generic)	06	18	600
3	Skill Enhancement Courses	04	08	400
4	Ability Enhancement Compulsory Course	04	08	400
5	Internship/ Industrial Activity	-	02	100
5	Extension Activity	-	01	-
	Grand Total	**28**	**91**	**2900**

6. allow earning Extra Credits through Courses under SWAYAM-MOOC's
7. apply Revised Bloom's Taxonomy in spelling out Course Outcomes.
8. Implement the following guidelines on Curriculum design given by NAAC
   a. Specific mention has been made of Program outcomes (POs) Program specific outcomes (PSOs), Course Outcomes (COs)Programme Educational Objectives (PEOs) and Course Objectives in the Syllabus.
   b. Relationship Matrix for CO, PO and PSO for all courses implemented.
   c. Curriculum addresses local, Regional, National and Global Needs
   d. Courses focus on Employability, Entrepreneurship and Skill Development
   e. Courses also focus on Gender, Environment and Sustainability, Human values and Professional Ethics.
9. List the Courses newly introduced in UG & PG and details of Percentage of Revision carried out as an appendix.
10. Introduce project work as a Discipline Specific elective course in the fifth semester of UG Programme and Core Course in the fourth semester of the PG programme.
11. Introduce Summer Internship training programme in the fifth Semester of the UG Programme
12. **Resolved to have the following 4 Core Courses for B.Sc. Mathematics two Semester wise as follows**

SEMESTER I

1. Algebra and Trigonometry (It is the Core Course of previous curriculum but the unit contents are changed)
2. Differential Calculus (It is the Core Course of previous curriculum but title and unit contents are changed)

SEMESTER II

1. Analytical Geometry(2D &3D)(It is the Core Course of previous curriculum but the unit contents are changed)
2. Integral Calculus (It is the Core Course of previous curriculum but the title and unit contents are changed)

SEMESTER III

1. Vector Calculus and Applications(It is the Core Course of previous curriculum but the unit contents are changed)
2. Differential Equations and Applications(It is the Core Course of previous curriculum but the unit contents are changed)

SEMESTER IV

1. Industry Module-Industrial Statistics(This course is newly introduced)
2. Elements of Mathematical Analysis(This course is newly introduced)

SEMESTER V

1. Abstract Algebra(It is the Core Course of previous curriculum but the unit contents are changed)
2. Real Analysis(It is the Core Course of previous curriculum but the unit contents are changed)
3. Mathematical Modeling(It is the Core Course of previous curriculum but the unit contents are changed)
4. Project with Viva Voce (It is shifted into Core course already in DSE)

SEMESTER VI

1. Linear Algebra(It is the Core Course of previous curriculum but the unit contents are changed)
2. Complex Analysis(It is the Core Course of previous curriculum but the unit contents are changed)
3. Mechanics(It is the Core Course of previous curriculum but the unit contents are changed)

13.. Resolved to have the following Discipline Specific Elective Courses for B.Sc. Mathematics

DSE 1

1. Numerical Methods with Applications(Retained as it is)
2. Mathematical Statistics (It is the Allied Course of previous curriculum but the unit contents are changed)

DSE 2

1. R Programming(Retained as it is)
2. Discrete mathematics(This course is newly introduced)

DSE 3

1. Allied Physics-I(Retained as it is)
2. Number theory(Retained as it is and shifted to DSE)

DSE 4

1. Allied Physics-II(Practical)
2. Astronomy (Retained as it is)

DSE 5

1. Optimization Techniques (Retained as it is Title only Changed)
2. Combinatorial mathematics (Retained as it is)

DSE 6

1. Introduction to Machine Learning (This course is newly introduced)
2. Fuzzy sets and its applications (Retained as it is)

DSE 7

1. Programming language with C++ (Retained as it is)
2. Introduction to Data science (This course is newly introduced)

DSE 8

1. Graph theory and Applications (Retained as it is)
2. Integral transforms and Z transforms (This course is newly introduced)

14. Resolved to have the following Skill Enhancement Courses for B.Sc. Mathematics

SEMESTER I (NME) [offered to other Department]

1) Quantitative Aptitude-I (Retained as it is)
2) Basic Mathematics (Retained as it is)
3) Data analysis using R Programming (It is newly Introduced)

SEMESTER II (NME) [offered to other Department]

4) Quantitative Aptitude-II (Retained as it is)
5) Statistics with SPSS (It is newly Introduced)
6) Bio Statistics (Retained as it is)

SEMESTER III to V (SEC 3 to SEC 7)

1. A Primer on Divisibility and Number Sequences (Retained as it is)
2. Computational Mathematics (It is retained as it is but Title only changed)
3. **Data Analysis using Sagemath** (It is newly Introduced)
4. Mathematics for Competitive examinations (Retained as it is)
5. Theory of Games and Decision Theory (Retained as it is)
6. **Introduction to GeoGebra** (It is newly Introduced)
7. **Introduction to Maxima** (It is newly Introduced)

SEMESTER VI (SEC 8)

1. Professional Competency Skill (This course is newly introduced)

15. Resolved to have the following Soft Skill Courses for UG

SEMESTER I

1. Introduction to Study Skills (Syllabus is passed by the BoS in English)- (This course is newly introduced)

SEMESTER II

1. Life Skills (Syllabus is passed by the BoS in Management Studies)- (This course is newly introduced)

SEMESTER III

1. Job Oriented Skills (This course is newly introduced)

SEMESTER IV

1. Computing Skills (Syllabus is passed by the BoS in Computer Applications) -(This course is newly introduced)

16. Resolved to the following Courses for B.Sc. Mathematics Programme

SEMESTER I

1. Foundation Course - Bridge Mathematics (This course is newly introduced)

SEMESTER IV

1. Environmental Studies (Retained as it is)

SEMESTER IV

1. Value Education (Retained as it is)

17. Resolved to have the following six core/elective courses for B.Sc Computer Science, BBA and MBA Programmes

1. Numerical Methods (It is the Core Course of previous curriculum but the title and unit contents are changed)
2. R-Programming – (This course is newly introduced)
3. Graph theory and its applications - (This course is newly introduced)
4. Business statistics (It is the Core Course of previous curriculum but the title and unit contents are changed)
5. Operations Research (It is the Core Course of previous curriculum but the unit contents are changed)
6. Applied Operations Research (It is the Core Course of previous curriculum but the title and unit contents are changed)

18. Resolved to have the following 6 Core Courses for M.Sc. Mathematics (only 2 semester)

SEMESTER I

1. Algebraic structures (This course is newly introduced)
2. Real Analysis- I (It is the Core Course of previous curriculum but the unit contents are changed)
3. Ordinary Differential Equations (Retained as it is)

SEMESTER II

1. Advanced Algebra (This course is newly introduced)
2. Real analysis-II (This course is newly introduced but same title)
3. Partial Differential Equations (It is the Core Course of previous curriculum but the unit contents are changed)

SEMESTER III

1. Complex Analysis (It is the Core Course of previous curriculum but the unit contents are changed)
2. Probability Theory (This course is newly introduced)
3. Topology (It is the Core Course of previous curriculum but the unit contents are changed)
4. Core Industry Module (This course is newly introduced)

SEMESTER IV

1. Functional Analysis (It is the Core Course of previous curriculum but the unit contents are changed)
2. Differential Geometry(This course is newly introduced)
3. Mechanics (Retained as it is)
4. Project (Retained as it is)

19. Resolved to have the following Discipline Specific Elective Courses, Skill Enhancement Courses and Generic Elective Courses for M.Sc. Mathematics Semester wise

SEMESTER I – DSE -GROUP A (ELECTIVE 1)

1. Number theory and Cryptography (This course is newly introduced)
2. Graph theory and Applications (This course is newly introduced)
3. Formal Languages and Automata Theory (This course is newly introduced)
4. Programming in C++ and Numerical methods (This course is newly introduced)

DSE -GROUP B (ELECTIVE 1I)

1. Lie Groups and Lie Algebras (This course is newly introduced)
2. Mathematical Programming (It is the Core Course of previous curriculum but the title and unit contents are changed)
3. Fuzzy sets and their Applications ((It is the Core Course of previous curriculum but the unit contents are changed)

4. Discrete Mathematics (This course is newly introduced)

SEMESTER II – DSE- GROUP C (ELECTIVE III)

1. Algebraic topology (This course is newly introduced)
2. Mathematical statistics (Retained as it is)
3. Statistics data analysis using R Programming (This course is newly introduced)
4. Tensor analysis and Relativity (This course is newly introduced)

DSE- GROUP D (ELECTIVE IV)

1. Wavelets (This course is newly introduced)
2. Modeling and Simulation with Excel
3. Machine Learning and Artificial Intelligence
4. Neural Networks (This course is newly introduced)

SEMESTER III – DSE- GROUP E(Elective V)

1. Advanced Number theory (Retained as it is)
2. Fluid Dynamics (It is the Core Course of previous curriculum but the unit contents are changed)
3. Stochastic Processes (Retained as it is)
4. Mathematical Python (This course is newly introduced)

SEMESTER IV – DSE- GROUP F (Elective VI)

1. Differential Geometry (Retained of previous curriculum)
2. Financial Mathematics
3. Resource Management Techniques

20. **Resolved to have the following Skill Enhancement Courses and Ability Enhancement Compulsory Course for M.Sc. Mathematics Semester wise**

Skill Enhancement Courses-SEC

1. Computational Mathematics using SageMath (This course is newly introduced)
2. Mathematical Documentation using LATEX (This course is newly introduced)
3. Office Automation and ICT Tools
4. Numerical Analysis using SCILAB (This course is newly introduced)
5. Differential Equations using SCILAB (This course is newly introduced)
6. Industrial Mathematics/ Statistics using latest Programming
7. Research tools and Techniques

Ability Enhancement Courses

- Soft Skill Courses (This course is newly introduced)

21. It is resolved to convene a Board of Studies meeting in the coming days (if the need arises) to incorporate the Modifications / Updations in the Curriculum based on the communication from the Parent University / TANSCHE.