DEPARTMENT OF MATHEMATICS

CENTRAL UNIVERSWITY OF KEREALA

PERIYE, KASARAGOD

Minutes of the Second Board of studies meeting held on Thursday, 7th February, 2019 in the Department of Mathematics in Room No. 28 at 2.30 p.m.

The following members were present:

1. *Prof. Gadadhar Misra,*

   Department of Mathematics,
   Indian Institute of Science, Bangalore – 560 012.

2. *Prof. A.K. Nandakumaran,*

   Department of Mathematics,
   Indian Institute of Science, Bangalore – 560 012.

3. *Prof. A. R. Rajan, Emeritus Professor,*

   Department of Mathematics, University of Kerala,
   Thiruvananthapuram, Kerala – 695 581.

4. *Mr. V. Kumar, Assistant Professor,*

   Department of Computer Science, CU Kerala.

5. *Dr. V. Vilfred, Associate Professor & Head,*

   Department of Mathematics, CU Kerala.

6. *Dr. K. A. Germina, Associate Professor,*

   Department of Mathematics, CU Kerala.

7. *Dr.* Ali Akbar K, Assistant Professor,

   Department of Mathematics, CU Kerala.

The Meeting started at 2.30 p.m. The Chairperson Dr. V. Vilfred welcomed the members and submitted the modified Course Structure and Syllabus approved by the Faculty Council, Department of Mathematics, CU Kerala. Then, he briefed how and what modifications were done in the communicated Course Structure and Syllabus.

With the permission of the experts in the Board of Studies, the convenor invited Dr. Shaini P, Dr. S. Gnanavel and Dr. Manikandan Rangaswamy to join the BoS Meeting. The committee commended on each and every paper and also on the course structure. The whole structure and Syllabus was thoroughly discussed. The revised version of the same was prepared and submitted for the approval. The Members of the Board of Studies approved the revised Course Structure and Syllabus. (A copy of the approved Course structure and Syllabus is attached herewith.) The committee decided to implement the revised course structure and syllabus from the academic year 2019 - 20 onwards.

The members also commented on the Method of Evaluation of M.Sc. Mathematics Programme and requested to include the same in the minutes. The experts strongly recommended that the mode of evaluation of examinations should be strictly internal.

The members of the BoS seriously noted the current strength of intake at CU Kerala to M.Sc. Maths programme that is increased to fourty seats and strongly recommend that for quality teaching the number of teaching faculty in the Department of Mathematics should be increased sufficiently since present strength of seven faculty is quiet insufficient.

The meeting was fruitful and Dr. K.A. Germina thanked the experts for their valuable suggestions and guidance.

The meeting came to a close at 5.00 p.m.

1. Prof. Gadadhar Misra,
   Department of Mathematics,
   I.I.Sc., Bangalore – 560 012.

2. Prof. A.K. Nandakumaran,
   Department of Mathematics,
   I.I.Sc., Bangalore – 560 012.

3. Prof. A. R. Rajan, Emeritus Professor,
   Department of Mathematics,
   University of Kerala, Trivandrum, Kerala – 695 581.

4. Mr. V. Kumar, Assistant Professor,
   Department of Computer Science, CU Kerala.

5. Dr. V. Vilfred, Associate Professor & Head,
   Department of Mathematics, CU Kerala. 07.02.2019

6. Dr. K. A. Germina, Associate Professor,
   Department of Mathematics, CU Kerala. 7/2/2019

7. Dr. Ali Akbar K, Assistant Professor,
   Department of Mathematics, CU Kerala. 7/02/2019

Course Outcome(s)	Specific learning outcomes for a Master's Dissertation are for the student to demonstrate: Considerably more in-depth knowledge of the major subject/field of study, including deeper insight into current research and development work; Deeper knowledge of methods in the major subject/field of study; A capability to contribute to research and development work; The capability to use a holistic view to critically, independently and creatively identify, formulate and deal with complex issues; The capability to plan and use adequate methods to conduct qualified tasks in given frameworks and to evaluate this work; The capability to create, analyse and critically evaluate different technical/architectural solutions; The capability to critically and systematically integrate knowledge; A consciousness of the ethical aspects of research and development work. Developing capability for undertaking deep study of a specific topic, procuring relevant literature, analysing available results, preparation of scientific report etc
Syllabus: No Syllabus can be prescribed for Project work. It will depend on the specific project chosen by the student in consultation with the faculty guide.	

Code:MAT5001: Algebraic Geometry Prerequisites: Algebra I & Algebra II, Topology	L	T	P	Credit
	3	2	0	4

Course Category	Elective
Course Type	Theory
Course Objective	Algebraic geometry is the study of geometric spaces defined by polynomial equations. It is a central topic in mathematics with strong ties to differential and symplectic geometry, topology, number theory, and representation theory. It is also a very important source of examples throughout mathematics. The aim of this course will be to learn algebraic geometry through the study of key examples
Course Outcome(s)	The student: masters fundamental techniques within classical algebraic geometry; is able to argue mathematically correct and present proofs and reasoning; has solid experience and training in reasoning with geometric

	structures

Syllabus:
Varieties: Affine and projective varieties, coordinate rings, morphisms and rational maps, local ring of a point, function fields, dimension of a variety. Curves: Singular points and tangent lines, multiplicities and local rings, intersection multiplicities, Bezout's theorem for plane curves, Max Noether's theorem and some of its applications, group law on a nonsingular cubic, rational parametrization, branches and valuations.

Text books:
1. S. S. Abhyankar, Algebraic Geometry for Scientists and Engineers, American Mathematical Society, 1990.
2. I. R. Shafarevich, Basic Algebraic Geometry 1: Varieties in Projective Space, Springer, 2013.

References:
1. W. Fulton, Algebraic Curves, Benjamin-Cummings Publishing, 1974.
2. J. Harris, Algebraic Geometry: A First Course, Springer-Verlag, 1992.
3. M. Reid, Undergraduate Algebraic Geometry, Cambridge University Press, Cambridge, 1990. 4. R.J. Walker, Algebraic Curves, Springer- Verlag, Berlin, 1950.

Code:MAT5002: Analytic Number Theory Prerequisites: Number theory.	L	T	P	Credit
	3	2	0	4

Course Category	Elective
Course Type	Theory
Course Objective	The aim of this course will be mastering the students to handle multiplicative functions, to deal with Dirichlet series as functions of a complex variable
Course Outcome(s)	The course will teach students to handle multiplicative functions, to deal with Dirichlet series as functions of a complex variable, and to prove the Prime Number Theorem and simple variants.