DEPARTMENT OF MATHEMATICS
CENTRAL UNIVERSITY OF KERALA
PERIYE CAMPUS, KASARAGOD

Minutes of the first Board of studies meeting held on Thursday, 28th August 2014 in the department of Mathematics in Room No.26 at 2.30 p.m.

The following members were present;

1. Prof. S. Kumaresan, Dept. of Mathematics, Hyderabad Central University, Hyderabad
2. Prof. Parameswaran Sankaran, Institute of Mathematical Sciences, CIT Campus, Taramani, Chennai- 600113
3. Dr Germina K.A., Head, Dept. of Mathematics, CUK, Kasaragod.
4. Dr Shaini Pulickakunnel, Assistant Professor, Department of Mathematics, CUK, Kasaragod.
5. Dr Tasleema T.M., Assistant Professor, Dept. of Computer Science, CUK, Kasaragod

The meeting started at 2.30 p.m. The Convenor Dr Germina welcomed the members and submitted the modified Course Structure and Syllabus approved by the Faculty Council, Department of Mathematics, CUK. She then briefed how and what modifications were done in the communicated Course Structure and Syllabus. Further, she reported the comments received from Prof. A. M. Mathai.

With the permission of the experts in the Board of Studies, the convenor invited Dr. Ali Akbar, Dr. S. Gnanavel, Dr. Arjun K. Rathie and Sri. Harilal N to join the B. S meeting. The committee commented 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 2014-2015 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.

Regarding the evaluation of the Dissertation there should be a 3-member committee consisting of HOD/ a nominee of HOD, the supervisor and one permanent faculty from the Department.

Dissertation should be initiated in third Semester as a reading course. The student has to submit his/her area of interest on or before 15 days from the commencement of the third semester to the HOD. Students with the help of the respective supervisor, select the topic of dissertation. Each student has to present two Seminars: one mid-semester seminar, another end-semester seminar. Also each student has to submit a report at the end of the third semester to the respective supervisor for evaluation.

The meeting was fruitful and Dr Shaini P. thanked the experts for their valuable suggestions and guidance.

The meeting came to a close at 6.00 p.m.

1. Prof. S. Kumaresan, Member, Expert in the Discipline
2. Prof. Parameswaran Sandaran, Member, Expert in the Discipline
3. Dr Shaini Pulickakunnel, Member, Asst. Professor from Dept. of Mathematics 28/8/2014
4. Dr Tasleema T.M., Member, Asst. Professor from Dept. of Computer Science 28/08/2014
5. Dr Germina K.A, Chairperson, Head, Department of Mathematics 28/8/2014

Differential Geometry

Code:**MSM5011**

Lectures : 2
Tutorials : 2
Practical : 0
Credits : 3

Geodesics, Parallel Transport, Weingarten Map, Curvature of Plane Curves Arc length, Line integrals, Curvature of surfaces, Parametrized surfaces, Local equivalence of surfaces and parametrixed surfaces, Rigid motions and congruence, Isometrics.

References

1. T.A. Thorpe: Elementary Topics in Differential Geometry, Springer-Verlag .
2. Goursat, Mathematical Analysis,Vol.I.
3. Struik, Differential Geometry
4. Kreyszig, Introduction to Differential Geometry and Reimannian Geometry.
5. Christian Br, Elementary Differential Geometry, Cambridge University Press, 2010.
6. Sebastin Montiel and Antonio Ros, Curves and Surfaces, American Mathematical Society, 2009.
7. J. R. Munkres, Analysis On Manifolds, Westview Press, 1997.
8. Michael Spivak, Calculus On Manifolds: A Modern Approach To Classical Theorems Of Advanced Calculus, Westview Press, 1971.

Differential Topology

Code:**MSM5012**

Lectures : 2
Tutorials : 2
Practical : 0
Credits : 3

Euclidean Spaces, Topological Manifolds, Function of several Variable, Continuity and Differentiability of functions of several variables, Differentiable manifolds, Tangent Spaces, Inverse Function Theorem, Submanifolds, Local immersion theorem, local submersion theorem, differential forms, Integration on Manifolds, Stokes' Theorem, de Rham's theorem.

References

1. An Introduction to Differentiable Manifolds and Riemannian Geometry: William M. Boothby, Academic Press;
2. Foundations of differentiable manifolds and Lie groups: Frank W. Warner, Graduate texts in Mathematics, Springer;
3. Introduction to Smooth Manifolds: John M. Lee, Graduate texts in Mathematics, Springer.

Dynamical Systems

Code:**MSM5013**

Lectures : 2
Tutorials : 2
Practical : 0
Credits : 3

Review of Linear Systems.
Dynamical Systems and Vector Field, Fundamental Theorem, Existence and Uniqueness; Cont. of Solutions is initial conditions; extending solutions; global solutions; flow of a differential equation. Stability of Equilibrium Nonlinear sinks, stability, Liapunov functions, Gradient systems; The Poincare - Benedixton theorem and applications. Introduction to Discrete Dynamical Systems.

References

1. Hirsch M.W. and Smale S., DYNAMICAL SYSTEMS, Acad Press, 1974.
2. Holmgren R.A., A first course in discrete dynamics, Springer Verlag, 1994