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

Ergodic Theory

Code:**MSM5014**

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

Poinacre's Recurrence Theorem, Hopf's Maximal Ergodic Theorem, Birkoff's Individual ergodic Theorem, von Neumann's Mean Ergodic Theorem. Ergodicity, Mixing, Eigenvalues. Discrete Spectrum Theorem. Ergodic automorphisms of Compact Groups. Conjugacy. Entropy.

References

1. Halmos, P.R., Intordoctory Lectures in Ergodic Theory
2. Nadakarni, M.G., Ergodic Theory, Hindustan Book Agency, 3rd edition.

Fixed Point Theory

Code:**MSM5015**

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

The Background of Metrical Fixed Point Theory, Fixed Point Formulation of Typical Functional Equations Fixed Point Iteration Procedures, The Principle of Contraction mapping in complete metric spaces, Some generalizations of Contraction mapping, A converse of Contraction Principle, some applications of Contraction Principle.

Convexity, Smoothness, and Duality Mappings, Geometric Coefficients of Banach Spaces, Existence Theorems in Metric Spaces, Existence Theorems in Banach Spaces, Approximation of Fixed Points, Strong Convergence Theorems.

Compactness in metric spaces. Measure of noncompactness, Measure of noncompactness in Banach spaces, Classes of special operators on Banach spaces. The Fixed point property, Brower's Fixed point theorem, equivalent formulations, some examples and applications, The computation of fixed points, Schauder's fixed point theorem and its generalizations, , Applications of Fixed Point Theorems.

References

1. V.Berinde, Iterative approximation of fixed points, Springer-Verlag Berlin Heidelberg 2007.
2. V.I.Istratescu, Fixed Point Theory - An Introduction, D.Reidel Publishing Company, Dordrecht, Holland, 1981.
3. R.P. Agarwal, Maria Meehan and D.O' Regan, Fixed point theory and applications, Cambridge University Press, 2001.
4. K.Goebel and W.A.Kirk, Topics in Metric fixed point theory, Cambridge University Press 1990.
5. A. Granas and J. Dugundji, Fixed point theory, Springer Monographs in Mathematics, 2003.
6. M.A.Khamsi and W.A.Kirk, An Introduction to Metric Spaces and Fixed Point Theory, A Wiley-Interscienc Publication, 2001.
7. W.A.Kirk and B.Sims, Handbook of Metric Fixed Point Theory, Kluwer Academic Publishers, 2001.
8. Sankatha Singh, Bruce Watson and Pramila Srivastava, Fixed point theory and best approximation: The KKM-Map principle, Kluwer Academic Publishers, 1997.
9. E.Zeidler, Nonlinear Functional Analysis and its Applications I: Fixed Point Theorems, Springer-Verlag, New York, 1986.