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NO: 21

KARPAGAM ACADEMY OF HIGHER EDUCATION
COIMBATORE – 641 021

Minutes of the meeting of the Board of Studies in Mathematics held on 16.04.2015 at 10.00 am in the Department of Mathematics at Karpagam Academy of Higher Education.

Member Present:

1. Dr.N.Anitha,
Assistant Professor & Head(i/c),
Department of Mathematics,
Karpagam Academy of Higher Education,
Coimbatore – 641021.
2. Dr.M.M.Shanmugapriya,
Assistant Professor,
Department of Mathematics,
Karpagam Academy of Higher Education,
Coimbatore – 641021.
3. Dr.P.Poongodi,
Assistant Professor,
Department of Mathematics,
Karpagam Academy of Higher Education,
Coimbatore – 641021.
4. Dr.S.P.Anjali Devi,
Professor & Head,
Department of Applied Mathematics,
Bharathiar University,
Coimbatore – 46.
5. Mr.Anburaj,
Assistant Professor,
Department of Mathematics,
NGM College of Arts and Science,
Pollachi – 642 011

The Chairperson welcomed the members of the Board. The Board carefully scrutinized the draft syllabus / syllabi and after detailed discussion the following resolutions were passed.

Agenda: 1

To consider and approve the Regulations and Syllabus for B.Sc. Mathematics programme.

Resolution: 1

Resolved to approve the Regulations and Syllabus for B. Sc. Mathematics programme and it comes into effect from 2015-16

Agenda: 2

To consider and approve the Regulations and Syllabus for M.Sc. Mathematics programme.

Resolution: 2

Resolved to approve the Regulations and Syllabus for M. Sc. Mathematics programme and it comes into effect from 2015-16

Agenda: 3

To consider and approve the Regulations and Syllabus of the allied courses for B.Sc (CS), B.Sc (IT), B.Sc (CT), BCA, B.Com, B.Com (CA), B.Com (PA), M.Com, M.Com(CA), B.Sc(CT), B.Sc Electronics, B.Sc physics, B.Sc chemistry, BBA, B.Sc(BT), B.Sc(BC) and M.Sc(MB) from the academic year 2015-16 handled by department of Mathematics.

Resolution: 3

Resolved to approve the Regulations and Syllabus of the allied courses for UG and PG Programmes and it comes into effect from 2015-16

Agenda: 4

To consider and approve the Regulations and Syllabus for the following Research programme for the Academic year 2015-2016.

- i) M.Phil in Mathematics and ii) Ph.D in Mathematics

Resolution: 4

Resolved to approve the Regulations and Syllabus for i) M.Phil and ii) Ph.D Research programmes and it comes into an effect from 2015-2016.

UG PROGRAMME (B.Sc. Mathematics)

For UG Courses the following suggestions were made based on the local and global needs and on employability, entrepreneurship and skill development

- ❖ The course Activity-1 may be replaced with the new course Soft skill development-1
- ❖ The new course Number theory and Cryptography may be included instead of the course Statistical Quality Control and Six sigma Quality analysis.
- ❖ The courses Stochastic Process and Numerical Methods-Practical may be included instead of the courses Object oriented programming with c++ and Object oriented programming with c++-Lab respectively.
- ❖ The courses Introduction to Accounting -Practical's and Cost and Management Accounting-Practical's may be excluded from the curriculum.
- ❖ The courses fundamentals of computer programming and finite element methods can be removed from the curriculum.
- ❖ The courses, Linear algebra and Theory of sampling and design of experimental can be excluded from the curriculum.
- ❖ The course Trigonometry and calculus may be renamed and contents change with 100%percentage.

❖ The following courses are may be added as new courses in the curriculum

- Indian Banking
- General Chemistry – I
- Statistics- Practical
- Introduction to Computers
- Soft Skill development-I
- General Chemistry - II
- Introduction to multimedia
- Human Resource Management
- Soft skill development – II
- Soft Skill development-II
- MATLAB programming
- Statistical Quality Control
- Advanced graph theory
- Fuzzy sets and its applications
- Lattice Theory
- Allied Physics –II
- Complex Analysis - I
- Complex Analysis - II

❖ **Matrices and Classical Algebra**

Unit-I: The topics “Diagonalization of matrix by orthogonal transformation and quadratic” form may be excluded.

Unit-II: The topics “Absolute convergence series and test for uniform convergence” can be excluded.

Unit-IV: The concept reciprocal of roots can be changed by the concept Symmetric function of roots.

Unit-V: The topics “Newton’s methods of devices and Horner’s method” may be excluded due to beyond the student’s level.

❖ **Calculus**

Unit-I: Whole unit replaced by the topics, Expansion of trigonometric functions and general theorems on Gregory’s series.

Unit-II: This unit to is be replaced by Unit-III.

Unit-III: This unit to is be replaced by Unit-IV.

Unit-IV: This unit to is be replaced by Unit-V.

Unit-V: All topics are to be replaced with beta and gamma function and their integrals.

❖ **Allied Physics-I**

Unit -V may be removed from the syllabus and the contents related to mechanics may be included as Unit-I.

❖ **Allied Physics-I-Practical**

Experiments related to Unit-V may be removed from the list of experiments. Two experiments pertaining to Unit-I may be included in the list.

❖ **Value Education and Healthy Practices**

Unit-V may be removed from the syllabus and included topics related to social evils.

- ❖ **Mathematical Statistics**
The course may be moved from semester II to semester III. The contents of Unit V may be deleted from the syllabus and in lieu of that the contents pertaining to statistics may be included. The course name may be changed into Statistics.
- ❖ **Differential Equations and Laplace Transforms**
Unit-V: The topic "Solving the ordinary differential equations with variable coefficients using Laplace transforms" to be removed.
- ❖ **Allied Physics –II -Practical**
Experiments related to Unit-V may be removed from the list of experiments. Two experiments pertaining to Unit-I may be included in the list.
- ❖ **Environmental Studies**
Contents of Unit -V may be trimmed as it too hefty.
- ❖ **Analytical Geometry**
Unit-II: The contents are removed and can be replaced by the topics straight line plane, coplanar lines and the shortest distance between two given lines.
Unit-III: the topics can be changed to basic concepts of sphere.
Unit-V : The second half of the Unit-IV can be moved to Unit-V.
- ❖ **Cost and Management Accounting**
Contents of Unit-IV may be removed and contents related to marginal costing may be included.
- ❖ **Vector Analysis and Transforms**
Unit-I: The topics solenoidal and irrotational vectors, Laplacian operators ca be removed and replaced by Derivative of a vector function and Level surfaces.
Unit-III: The topics finding Fourier coefficients for a given periodic function and odd even function may be added.
- ❖ **Operations Research**
Unit-III: The topics Processing n-jobs through 2 machines, Processing n-jobs through 3 machines may be added.
Unit-IV: The concepts of game theory can be removed from this unit due to irrelevant of sequel of the title.
- ❖ **Real Analysis – I**
Unit-I: The topics properties of the integers deduced from the completeness axiom- The Archimedean property of the real number system may be added.
Unit-II: This unit may be replaced with the topics covering, compactness of metric spaces and its related theorems.
- ❖ **Numerical Methods**
Unit-III: The topics Error Propagation in difference table – operator E – Relation between Δ , E and D may be added.
Unit-IV: The topics central differences, Gauss forward and backword and stirling's formula can be removed due to heavy portion of this unit.

❖ **Discrete Mathematics**

Contents of Unit-III may be removed and contents which is beyond the student's level.

❖ **Real Analysis -II**

Unit-III: The topics Taylor's formula with remainder may be excluded. And the concepts continuity one side derivatives and infinitely derivatives can be added.

Unit-IV: The topic continuous functions of bounded variations can be removed.

Unit-V: All the topics are changed to Riemann Stieltjes integral and its properties.

❖ **Modern Algebra**

Contents of Unit-V may be removed and contents which is beyond the student's level.

- ❖ All the courses were focused towards employment, entrepreneurship and skill development.

The UG programme B.Sc. Mathematics consists of 50 courses. Among these 23 courses are added as new courses and the content of the 20 courses is replaced. The total percentage change in the syllabus content is = 63%.

PG PROGRAMME (M.Sc. Mathematics)

For PG Courses the following suggestions were made based on the local and global needs and on employability, entrepreneurship and skill development

- ❖ The courses programming in java and programming in java-practical may be introduced as new courses instead of VB-net programming and VB-net programming practical respectively.
- ❖ The course MATLAB programming, Lattice theory and algebraic topology can be removed and replaced by the new course reactively Discrete mathematics, Graph theory and its applications and Three-dimensional analytical geometry
- ❖ The following courses may be introduced as core and elective new courses
 - Mechanics
 - Fundamentals of Actuarial Mathematics
 - Computer Based Numerical Methods
 - Computer Based Numerical Methods
 - Probability and theoretical distributions
 - Finite elements methods
 - Combinatorics
- ❖ The courses Number theory and cryptography, Stochastic processes and non-linear analysis may be excluded from the curriculum.
- ❖ The courses Complex analysis, functional analysis and mathematical statistics can be added with more topics and consider as new courses.
- ❖ **Algebra**

Unit-IV: This unit may be replaced by the concepts of linear transformation and canonical and Jordan forms.

Unit-V: This unit can be replaced by trace and transpose, Hermitian unitary and normal transformation.

❖ **Real Analysis**

Unit-IV: This unit may be replaced by the concepts of the Lebesgue integral and its theorems.

Unit-V: This unit can be changed to implicit function and extremum problems.

❖ **Numerical Analysis**

Unit-IV: This topics Eigen values of a matrix by iteration, the power method may be added.

Unit-V: The topics Laplace equations, Poisson equations and derivative boundary conditions can be removed.

❖ **Ordinary Differential Equations**

Unit-III: This unit is replaced by the topics Non homogeneous linear system, linear systems with constant coefficient and Linear systems with periodic coefficients.

❖ **Topology**

Unit-IV: The topic hereditary properties can be removed and replaced by Complete regular spaces and normal spaces.

Unit-V: The topics components of a space, locally connected space and its theorem can be added.

❖ **Optimization Techniques**

Unit-II: The topics illustrating method of solution and continuous dynamic programming can be removed and replaced by Characteristics of Dynamic Programming Problem, Developing Optimal Decision Policy, Dynamic Programming Under Certainty - DP approach to solve LPP.

Unit-IV: This unit content can be replaced by Decision Analysis and its properties.

❖ **Partial Differential Equations**

Unit-II: This unit is replaced by the topics Second Order Partial Differential Equations and its problems.

Unit-III: This unit is replaced by the topics Method of separation of variables and The method of integral transforms.

❖ **Fluid Dynamics**

Unit-IV: The concepts flow between parallel flat plates, plane Poiseuille flow and Hagen-Poiseuille flow can be removed.

Unit-V: The topics Von karman integral relation and Von karman integral relation by momentum law can be removed and replaced by Displacement thickness, Momentum thickness and Kinetic energy thickness.

❖ **Mathematical methods**

This course can be renamed as Integral Equations and Transforms

Unit-I: The topic Fourier transforms of rational function may be added.

Unit-II: The topic The Linear diffusion equation on a semi-infinite line can be added to this unit.

❖ **Measure Theory**

Unit-I: The topics Measurable functions – Littlewood's three principle can be added due to sequel of the topics.

Unit-III: This unit can be replaced by Unit-IV.

Unit-IV: The contents can be replaced by Measure spaces-Measurable functions-Integration-General convergence Theorems.

- ❖ All the courses were focused towards employment, entrepreneurship and skill development.

The PG programme, M.Sc Mathematics consists of 30 courses. Among 30 courses, 15 new courses are added and there is a syllabus change in 10 courses. Hence, the percentage of syllabus content change is =58%.

Allied Courses

1. The course entitled "**Probability and Statistics**" changed to "**Statistical Methods**".
2. Some more practical's are introduced for 100 marks practical courses.

M.Phil / P.hD PROGRAMME

- ❖ The core& elective courses Advanced algebra and its applications, Differential equations can be introduced instead of the core & elective courses Advanced algebra and analysis, Fuzzy matrix respectively.
- ❖ The elective courses, Optimization techniques can be added with 100% changes instead of the course Graph theory and its applications.
- ❖ The elective courses Advanced Topics in Fluid Dynamics courses, Hydrodynamic and hydromagnetic stability, Robust Control System and Advanced Graph Theory can be included, instead of Operation Research -Resource Allocation in Software, Advanced Acceptance Sampling, Random Processes and Graph Theory and Abstract Control Theory respectively.
- ❖ The elective course Topology can be changed with 100% of syllabus contents.
- ❖ In the course Advanced Algebra and its Application, Unit-V can be replaced by half of the content of Unit-IV

The M.Phil/P.hD programme consists of 12 courses. Among 12 courses, 9 new courses are added and there is a syllabus content change in 2 courses. The total percentage of syllabus content change is = 73%.

N. 
Chair Person

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