Pandit Deendayal Petroleum University

School of Technology

DEPARTMENT OF MATHEMATICS

Minutes of BOS meeting

Dt.: 27th Mar, 2017

Time : 11:30 a.m.

Agenda:

1. To review detailed syllabus for 3rd and 4th semesters of B. Sc.
2. To revise two courses of 2nd semester of B.Sc.
3. To review a course introduced at 3rd semester for B.Tech. (CS & ICT)

Venue: Committee room, E-Block, PDPU Campus.

Review of B.Sc. syllabus (3rd and 4th semesters):

The faculty members have prepared a detailed syllabus for the third and the fourth semesters of B.Sc., to be taught from the next semester. The syllabus was thoroughly reviewed and discussed semester-wise by the BOS members. The suggestions from BOS members have been listed below:

B.Sc. (Sem-3)

BSM 301T – Calculus of several variables

- "Partial derivatives" may be introduced in the second unit.
- "Lagrange's multipliers" may be shifted from the 4th to the 3rd unit.
- "Vector calculus" may be introduced at the start of the fourth unit.
- Currently mentioned texts and references (T. Apostol, Walter Rudin) may be replaced with the ones by Thomas' calculus, Stewart, Das & Mukherjee, Jain & Iyengar, and K.R. Kachot respectively. Many good books by Indian authors' are available.

BSM 302T – Ordinary Differential Equations

- "Existence and uniqueness of solution" may be introduced in the first unit, before starting with the methods to solve ODEs.
- In the second unit, "nth order ODE" may be replaced with "General order ODE", "Second order ODE" may be shifted from 3rd to 2nd unit.

- In the 3rd unit, “Laplace transforms” may taught using tables only. As applications of solving ODE, formation of differential equations for Simple Harmonic Motion (SHM), Damping, RL circuit, decay may be taught.
- Suggested a text book by “Stephenson &----------“ for series solution.

BSM 303 T – Boolean Algebra

- The text book by Narsingh Deo may be removed and the one by K.H. Rosen be added in the last.

BSM 304 T /P– Programming and problem solving through “C” language

- In the fourth unit, the fundamental of pointer, with an example may be included.
- A text book on “Spirit of C” is to be added.

BSM 305 T – Number Theory

- “Some applications of number theory” may be added at the end of the fourth unit.

B.Sc. (Sem-4)

BSM 401 T/P – Object Oriented Programming Using JAVA

- “Knowledge of C” may be added as a prerequisite.

BSM 402 T – Partial Differential Equations

- In the fourth unit, “Classification of linear PDE” may be replaced by “ Applications of linear PDE”.

BSM 403 T – Real Analysis

- In the list of texts and references, Rudin and Apostol may be mentioned at the last; the one by Goldberg and S.C. Mallik may be included at the top.

BSM 404 T – Discrete Mathematics

- In the first unit, truth tables, propositional functions and quantifiers may be removed and Combinatorics- permutations and combinations, Double counting and bijective proof may be added.

BSM 405 T- Linear Programming

- In the third unit, Artificial basis technique, Transportation problem, Methods for finding initial basic feasible solution: North-West Corner Rule, Matrix Minima Method, Vogel's Approximation Method may be included.
- In the forth unit, Simplex method and its computational procedure, Dual Simplex Method, Optimal Solution: MODI Method, Assignment Problem: Hungarian Method may be kept.

Revision of B.Sc. syllabus (2nd semester):

BSM 201 T- Calculus and Analytical Geometry-II

- Having taught in the second semester, the faculties suggested some additions in the first and the fourth unit of the syllabus (reviewed at last BoS meet). These changes suggested by the faculties were incorporated.
- It was suggested to experiment the revised flow of the course for the next year. In case some problem arises, it may be resolved in the next BoS.

BSM 203 T- Theory of Equations

- From the first unit, "polynomial arithmetic" and the "division algorithm" and from the second unit, "formal differentiation of polynomials" may be dropped and " Operations on polynomials" may be added in the first unit.
- "Factors and roots" may be shifted from the first to the second unit.

Review of B.Tech. course (CS & ICT):

A new course has been proposed for B.Tech. (3rd semester) Computer Science (CS) and Information and Communications Technology (ICT) keeping their syllabus in mind.

MA 206 T- Discrete Mathematics

- In the first unit, the concept of set theory may be added.
- In the third unit, quotient groups and integral domains need not be taught. Also, only the definition and examples of the other topics be included. Growth of functions, Pigeon-hole principle and counting may be added.

In fourth semester (CS & ICT), the currently run course in other branches (MA 202 T-Numerical and Statistical Methods) may be renamed as Probability, Statistics and Numerical Analysis, as it has all these contents.

General suggestions:

- Dr. D.M. Parikh, Dean, FOET has suggested to follow a common pattern for all B.Tech. and B.Sc. courses in the order listed below:

<Course code Course name>

<Teaching scheme, Examination scheme>

<Course objectives>

<Prerequisites>

<Unit wise course content>

<Texts and references> along with links to relevant videos/scripts

<Course outcomes>

- Looking at the courses of B.Sc. (sem 5), “Data structure through C^{++}” (BSM 504 T/P) is compulsory, and a course in sem-3 “Programming and problem solving through ‘C’ language” (BSM 304 T/P) is optional. Hence, while designing the course content and even while teaching BSM 504T, the faculty must start from the very basics of programming.

BoS meeting attendance sheet

Members present:

External members:

Dr. Dilip Nautiyal

Dr. Sudip Sengupta

Dr. Sunitha

Internal members:

Dr. D.M. Parikh

Prof. T.P. Singh

Dr. Poonam Mishra

Dr. Ansari

Dr. Manoj Sahni

Dr. Shobhit Nigam

Dr. Bhasha H. Vachharajani

Dr. Brajesh Jha

Dr. Brahma