


Mails sent to Board of Studies Chairperson, Mahatma Gandhi University

Suggestions given to Chairman, Board of Studies in Mathematics during PG Syllabus revision conducted in 2019 by the Head of the Department of Mathematics, Union Christian College, Aluva

Eldo Varghese <eldovarghese1978@gmail.com>

Syllabus Revision PG Mathematics

3 messages

Jayaraj T <jayarajtreathy@gmail.com>

Tue, Jan 1, 2019 at 7:34 AM

To: eldovarghese1978@gmail.com, anunuthanjoshua@gmail.com, geenamaryjoy@gmail.com, milyajay@yahoo.com, susmiarun.arun@gmail.com, kuriancsmn@gmail.com


2 attachments

Mahatma Gandhi University decided to revise the syllabus of Post Graduate Programmes from 2019 onwards. In consultation with the Board of Studies of Mathematics evolve your difficulties and suggestions on the existing syllabus and suggest about new courses if any. Please send your difficulties/suggestions/queries to jayarajt@gmail.com or below 80012019.

The syllabus restructuring workshop will be held from 10/12/2019 to 10/12/2019 at UCC College, Aluva. Make sure all board members from your college attend the workshop.

Thanking You,
Jayaraj T
Chairman, B.S. Mathematics
80012019

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Eldo Varghese <eldovarghese1978@gmail.com>

Wed, Jan 9, 2019 at 12:10 AM

To: Jayaraj T <jayarajtreathy@gmail.com>

Sir,

As per your request, we from the department of mathematics, U.C. College, would like to make few suggestions in the upcoming syllabus revision.

Suggestions in Semester 1 Courses:

I have been teaching Measure theory and Integration (PC3 MT01C03) since the introduction of CSS system in PG courses. So first I would like to give some suggestions on that paper first.

PC 3 MT01C03 MEASURE THEORY AND INTEGRATION.

1. The syllabus of the course Measure Theory and Integration seems to be little bit lengthy when compared to Measure Theory courses in other universities especially University of Calicut. So a reduction in syllabus along with a change in text may be considered.
2. The textbook may be changed to "**Real Analysis**" by **H.L Royden and P.M. Fitzpatrick, Fourth Edition**. This text is currently available in the market and seems to be little more simple to follow than the current prescribed book by Royden. Many exercise problems and proofs that are left to reader in the current text is solved in this book. In fact the University of Calicut is going to adopt this as the prescribed text in their upcoming PG syllabus.
3. If that text is used, the following sections may be included in the syllabus.

Module 1 : Chapter 2, Sections 21 to 2.6

Module 2: Chapter 3 & Chapter 4, Sections 4.1 to 4.4, Chapter 5, Sections 5.1

& 5.2

Module 3: Chapter 17, Sections 17.1 to 17.3, Chapter 18, Section 18.1

Module 4: Chapter 18, Sections 18.2 to 18.4, Chapter 20, Section 20.1

4. Since in convergences in measure theory, we usually refer to sequences & series of functions, which is currently studied in second semester, the Real Analysis paper currently in the second semester may be shifted to first semester and Measure Theory may be shifted to second semester.

Now after discussion with my colleagues, we have certain suggestions regarding the courses "Abstract Algebra", taught in the second semester and "Number Theory and Cryptography" taught in the third semester.

Suggestions in Semester 2 Courses:

PC 6 MT02C05 ABSTRACT ALGEBRA

Text Book: John B. Fraleigh, A First Course in Abstract Algebra, 7th edition, Pearson Education.

Herewith recommending the following suggestions:

- 1) In Module I, it is desirable to include Part III-Section 16 and Part V- Section 27 (27.21 - 27.27) as they are prerequisites for Part VII –Sections 36 & 37 and Part VI – Sections 29, 31 (31.1 - 31.18), 33 respectively.
- 2) In Module II, Part VI – Section 32 could be excluded
- 3) In Module III, it is desirable to include Part X – Section 49 (49.6 to 49.11) as they are prerequisites for Part X – Sections 50, 51 (51.1 – 51.10, 51.15), 53 (53.1 to 53.6)
- 4) In Module IV, Part X – Section 51 (51.11 – 51.14, 51.16) could be excluded

Accordingly, the revised syllabus will be as the following:

Module 1:

Direct products and finitely generated Abelian groups, **Group Action on a set**, Rings of polynomials, Factorization of polynomials over a field, **Prime and Maximal ideals**

(Part II – Section 11 (Theorem 11.12 without proof), **Part III-Section 16**, Part IV – Sections 22 & 23, **Part V- Section 27 (27.21 - 27.27)**)

Module 2:

Introduction to extension fields, Algebraic Extensions, Finite fields

(Part VI – Sections 29, 31 (31.1 - 31.18), 33)

Module 3: Sylow's theorems (without proof), Applications of the sylow theory, Automorphisms and fields, the isomorphism extension theorem (proof of the theorem excluded)

(Part VII –Sections 36 & 37, Part X – Sections 48 & **49 (49.1 to 49.11)**)

Module 4:

Splitting fields, Separable extensions, Galois Theory

(Part X – Sections 50, **51 (51.1 – 51.10, 51.15)**, 53 (53.1 to 53.6))

Exchange of papers in Semester 3 and Semester 4:

ANALYTIC NUMBER THEORY (PE 1 MT04E01) in Semester 4 could be included in semester 3 as core paper and NUMBER THEORY AND CRYPTOGRAPHY PC 14 MT03C14) in Semester 3 could be included in Semester 4 as elective paper with the following changes.

PE 1 MT04E01 ANALYTIC NUMBER THEORY

Text: Tom M Apostol, Introduction to Analytic Number Theory, Springer International Student Edition, Narosa Publishing House

Herewith recommending the following suggestions:

- 1) Chapter 5 – section 5.9, Chapter 10 – section 10.5, Chapter 14 – sections 14.1 – 14.4 could be excluded

Accordingly, the revised syllabus will be as the following:

Module 1:

Arithmetic Functions and Dirichlet Multiplication

(Chapter 2 - sections 2.1 - 2.17)

Module 2:

Averages of Arithmetical functions

(Chapter 3 - sections 3.1 - 3.11)

Module 3:

Some Elementary Theorems on the Distribution of Prime Numbers

(Chapter 4 - sections 4.1 - 4.8)

Module 4:

Congruences , Primitive roots

(Chapter 5 - sections 5.1 - 5.8, Chapter 10 - sections 10.1 - 10.4)

PC 14 MT03C14 NUMBER THEORY AND CRYPTOGRAPHY

Text Book:

Neal Koblitz, A Course in Number Theory and Cryptography, 2nd edition, Springer Verlag.

Herewith recommending the following suggestions:

- 1) Chapter 1 – Sections 1, 2 & 3 and Chapter II - Section 1 could be excluded, and Chapter I - Sections 2 & 3 and Chapter II - Section 1 and are to be denoted as prerequisites, as they will be already covered in the syllabus of Analytic Number Theory and algebra.
- 2) Chapter III - Sections 1 & 2 are to be included, as they are prerequisites for Chapter IV - Sections 1, 2 & 3; but not covered in the new B Sc syllabus.
- 3) Proposition V.2.2, Heuristic time estimate and implications of RSA could be excluded, as they are related to Chapter 1 – Section 1
- 4) Proposition V.1.7 and Chapter V – Section 5 could be excluded

Accordingly, the revised syllabus will be as the following:

Pre-requisites: Divisibility and the Euclidean algorithm, Congruences, Finite Fields

(Chapter I - Sections 2 & 3, Chapter II - Section 1)

Module 1:

Some applications to factoring, Quadratic Residues and reciprocity

(Chapter 1 – Section 4, Chapter II - Section 2)

Module 2:

Cryptography

(Chapter III - Sections 1 & 2)

Module 3:

Public Key

(Chapter IV - Sections 1, 2 & 3)

Module 4:

Primality and Factoring

(Chapter V - Sections 1 (Proposition V.1.7 is excluded), 2 (Proposition V.2.2 is excluded) & 3 (Heuristic time estimate and implications of RSA are excluded))

In additions to these changes, it is suggested by all the faculty members of department that, even though the syllabus is set for 90 hours, in a semester a maximum of 65-75 teaching hours are obtained including additional classes engaged by the faculty. So minor reductions in the syllabus will enable the faculty members to complete the syllabus in a more proper manner. Hope that the board of studies will be considering our suggestions positively.

Thanking you,

Sincerely,

Eldo Varghese
Assistant Professor
Department of Mathematics
Union Christian College, Aluva.

On Tue, Jan 1, 2019 at 7:35 AM Jayaraj T <jayarajrevathy@gmail.com> wrote:

Jayaraj T <jayarajrevathy@gmail.com>
To: Eldo Varghese <eldovarghese1978@gmail.com>

Wed, Jan 9, 2019 at 8:41 AM

Thank you for the information.
[Quoted text hidden]

Modified syllabus of M.Sc Bioinformatics submitted by Mr. Shyam Mohan, Head of the Department of Biosciences to the Chairperson of Board of Studies , Ms. Indu C Nair

