

SYLLABUS & PROGRAMME STRUCTURE

Mathematics

(Honours)

(Skill Enhancement Course)

(Choice Based Credit System)

(Effective from the Academic Session 2017-2018)

Third Semester

MAHARAJA BIR BIKRAM UNIVERSITY
AGARTALA, TRIPURA: 799004

Semester-III
Skill Enhance Course – I
LOGIC AND SETS

FULL MARKS - 100

1. Conditional and biconditional propositions, converse, inverse, contrapositive propositions, truth tables, tautology and contradiction, duality law and theorems.
2. Propositional equivalences, logical equivalences, normal form, disjunctive and conjunctive normal form. Inference theory and predicate calculus. Predicts and quantifiers, existential quantifiers.
3. Relation, composition of relation, equivalence relation, partition of a set induced by an equivalence relation, matrix representation of a relation, representation of relation by graphs.
4. Partial ordering of a set (poset). Hasse diagram for partial ordering. Lattices, lattice as an algebraic system.

Reference :

1. *Discrete Mathematics and Combinatorial Mathematics : R. P. Grinaldi, Pearson Education : 1998.*
 2. *Discrete Mathematical Structures with Application to Computer Science : J. P. Trembly, R. Manohar, Tata Mcgrawhill Education : 1997.*
 3. *Set Theory and Logic : Robert R. Stoll, W. H. Freeman and Company.*
 4. *Theory and Problem of Set Theory and related topics : Lipschutz Seymom, Schaum Publishing Company, N. Y. : 1964.*
 5. *Text Book of Discrete Mathematics : Swapan Kumar Sarkar, S. Chand & Co. Ltd., Ramnagar, New Delhi-110055 : 2012.*
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SEC: General Information:

- Skill Enhancement Course (SEC) is an integral component of both Honours and General Programmes across the Streams under UGC CBCS UG Syllabi.
- SEC-1 of each Subject will consist of diverse topics/themes the Earlier Semesters and similarly SEC-2 of each Subject will consist of diverse topics/themes related to the Later Semesters.
- Topics/Themes must be incorporated in each of two Syllabi of SEC meant for Project & Assignments corresponding to CBCS Honours & General/Pass Programmes. PROJECTS & Assignments should be guided in such a way that all Projects/Assignments are prepared by students on different titles & aspects/dimensions of topics/themes/issues incorporated in University approved SEC Syllabi.
- SEC will represent a well mentored and self prepared Project work in written form by a student on respective Syllabi or 5 Assignments in terms of systematic answers in written form against a broad type of question/query carrying 20 marks each applicable across all Streams & Programmes. In case of Science Faculty, Assignments may be on Practical issues/topics/experiments.

SEC: Distribution across Streams & Programmes :

- One Paper of SEC finds its place in each of Third and Fourth Semesters under **Honours Curricula across the Arts/Science/ Commerce Streams** comprising altogether two Papers. In this case SEC must relate to the Honours Subjects only.
- One Paper of SEC finds its place in each of Third to Sixth Semesters under **Arts General Programmes** comprising altogether four papers. Two Papers of SEC will be associated with first Elective Subject and two Papers of SEC will be associated with second Elective Subject (as per sequence of filling up Elective Subjects in the admission forms or preference of the candidate submitted otherwise) in case of Arts (General)Programmes. Across the Third to Sixth Semesters a candidate will take SEC in the sequence : SEC(First Elective, First Paper) or SEC-11, SEC (Second Elective, First Paper) or SEC-21, SEC(First Elective, Second Paper) or SEC-12 & SEC (Second Elective, Second Paper) or SEC-22 respectively.
- For **Science (General) Programme** 4 Papers of SEC will be tagged with at least two out of three Electives and the highest number of SEC Papers under a given Elective must not be more than two.
- The Commerce Department will conduct the SEC in the relevant themes/ topics/issues related to the respective SEC Syllabi: 2 Papers for Honours & 4 Papers for **Commerce (General) Programmes** structurally distributed as like as Arts.
- Same sub topic/theme cannot be opted by a given candidate/student in preparation of Project/ Assignments at different Semesters under SEC .

SEC: Assessment of Project/Assignments :

- Assessment of SEC will be made on Evaluation of the Written Form of Project Work consisting of 80 marks and Oral Interaction /Feedback with the students on Project / Theme consisting of 20 marks.
- A Project must consist of the following 6 Chapters:
 1. Introduction,
 2. Basic Concepts,
 3. Main Analysis on the selected Theme/ Theory,
 4. Supplementary or Complimentary Analysis to the Main Theme/Theory,
 5. Self Study Report & Conclusion ,
 6. List of References of Books & Other Materials.
- The Project & Assignment will follow the University approved Syllabi materials on Subject & Paper specific topics/themes/issues.
- The Project must consist of all the basic features including Cover Page, Preface, Certification by Guide and Contents etc. apart from Chapterisation.
- The word limits of a Project will be in between 2500 to 3500 and the word limits of an Assignment will be in between 400 to 500.
- 80 Marks on written form of Projects will be assessed as per the following format:

Assessment Profile of a Project		
Sl. No.	Assessment Aspects	Assigned Marks
01	Nature of Project Theme & Chapterisation	20
02	Topical Coverage & Consistency of Analysis.	20
03	Way of Presentation & Technical Elements	20
04	Academic Quality & Excellence.	20
Marks on Project Presentation:		80
Marks on Oral Feedback :		20
Total Marks on Project :		100

- Both the evaluated/ assessed Projects and bunch of Assignments will remain under the custody of the related Departments and the University may ask for the despatch of the Projects or bunch of Assignments as & when necessitated.
 - The total marks on Projects or Assignments will have to be transmitted by the College to the University on or before the stipulated date.
 - This is a general guideline. The respective department(s) may incorporate or modify as department(s) deem fit.
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