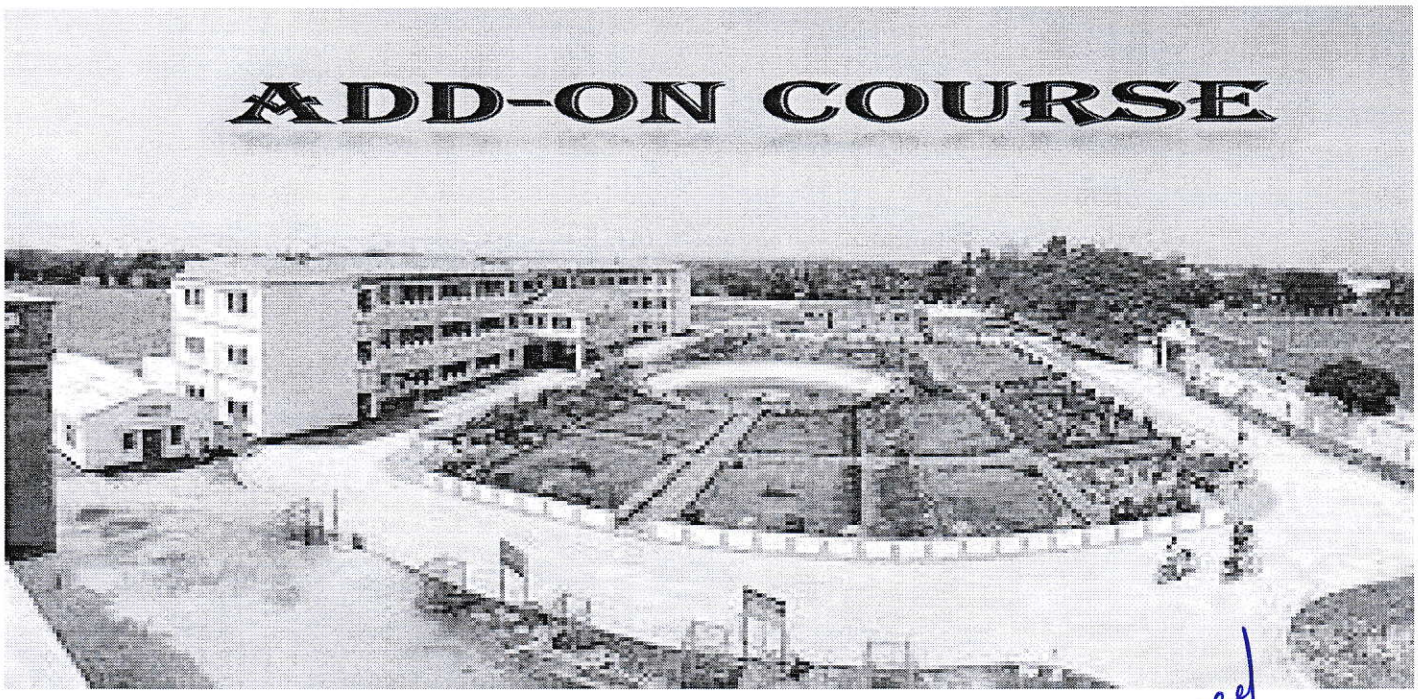
REMUNA DEGREE COLLEGE , REMUNA ,BALASORE

Accredited By NAAC with B++ Grade

SYLLABUS FOR UNDERGRADUATE CERTIFICATE COURSE IN MATHEMATICS

Effective from the academic session 2020-21

UNDER CHOICE BASED CREDIT SYSTEM



Approved
15.02.21

Department of Mathematics
Remuna Degree College
Remuna , Balasore

Website:- www.remunadegreecollege.org
College Email:- remunadegreecollege@gmail.com
Department Email:- rdcmathematics56@mail.com

Debabijaymohanty
15.2.21

15/2/21

Add-On Course:

A Add-On course in Mathematics for newly admitted Economics Honours Student is conducted every year before commencement of the first semester class by the Department of Mathematics. The main objective of the course is to cover the gap between subjects studied at Higher Secondary level and subjects they would be studying in Graduation. The syllabus for the course is framed in such a way that they get basic knowledge on the subjects that they would be learning through graduation. This two-week student enhancement and development programme is devised for overall grooming and enhancement of the students' fraternity with a special punctuation for students from rural and semi rural community.

Objectives:

- To cover the gap between school and collegiate education to meet the students communicative requirements
- To prepare the students for a classroom atmosphere in which English is the medium of instruction.
- To help the students acquire the basic knowledge.

Methodology

A Curriculum is framed separately in each of the subjects, for Add-On Course in Economics. During the first week after the commencement of the classes, the Add-On course curriculum is delivered to the students in various disciplines. A post Add-On course test is conducted after the completion of Add-On syllabus to assess the ability of student's suggestions is given to students for improvisation.

Add-On Course Syllabus
Department of Mathematics
Session-2020-21

Aim and Objective:

1. The students will be equipped with knowledge and the confidence needed on bigger challenges.
2. Interactive and active learning have been weaved into the Add-On course.
3. The concept of assisted learning.
4. The act as a buffer for new entrance.

Outcome:

After studying this paper the student will be able to take semester class easily.

Duration:- 30 Hours

Time:- Monday-Saturday

Course Structure of UG Economics CC - Paper

Semester	Course	Course Name	Credits	Total Marks
1st	CC-II	Mathematical Methods for Economics I	06	100
2nd	CC-IV	Mathematical Methods for Economics II	06	100

Core Paper II

MATHEMATICAL METHODS FOR ECONOMICS-I

Objective:

The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in.

Unit I: Preliminaries and Functions of one Real Variable 02 Hours

- Set and sets operation
- on, Cartesian problem, Relation function and their properties.
- Number Systems types of functions.
- Graphs and graphs of functions, Limit and continuity.

Unit II: Derivative of a Function 05 Hours

- Derivative and slop of curve ;
- Continuity and Differentiability of a function.
- Rules of differentiation for a function of one variable.
- Relationship between total, average and marginal function.

Unit III: Functions of two or more Independent Variables 04 Hours

- Partial Differential techniques.
- Geometric interpretation of partial derivatives.
- Partial derivatives in Economics.
- Elasticity of a function; Cross and Partial elasticity.

Unit IV: Matrices and Determinants 04 Hours

- Matrices.
- Determinants.
- Crammers rule and Matrix inversion.

Text Book:

- A. C. Chiang and K. Wainwright (2005): Fundamental Methods of Mathematical Economics, McGraw Hill International Edition.

15/2/24

Reference Book:

- K. Sydsaeter and P. J. Hammond (2002): Mathematics for Economic Analysis. Pearson Educational Asia
- V Krishna Murthy, V. P. Mainra, J. L. Arora, An Introduction to Linear Algebra, Affiliated East-West Press Pvt. Ltd.

Core Paper -IV

MATHEMATICAL METHODS FOR ECONOMICS - II

Objective:

The objective of this sequence is to transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this Syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. The level of sophistication at which the material is to be taught is indicated by the contents of the prescribed textbook.

Unit I: Introduction Of Linear models: 02 Hours

- Input-Output Model.
- Equilibrium out put.
- The closed model.

Unit II: Second and Higher Order Derivatives and Integration: 05 Hours

- Technique of higher order differentiation.
- Concavity and Convexity of function.
- Derivative of Implicit function.
- Higher order Partial Derivative.
- Indefinite integrals.

Unit III: Single and Multivariable Optimization: 04 Hours

- Optimum and Extreme value.
- Economic applications.
- First and Second derivative order condition.
- Convex function and convex set.

Unit IV: Optimization with Equality Constraints: 04 Hours

- Effects of a constraint.
- First and Second order conditions.
- The Border Hessian determinant.

Text Book:

- A. C. Chiang and K. Wainwright (2005): Fundamental Methods of Mathematical Economics, McGraw Hill International Edition.

Reference Book:

- K. Sydsaeter and P. J. Hammond (2002): Mathematics for Economic Analysis. Pearson Educational Asia

18/2/24

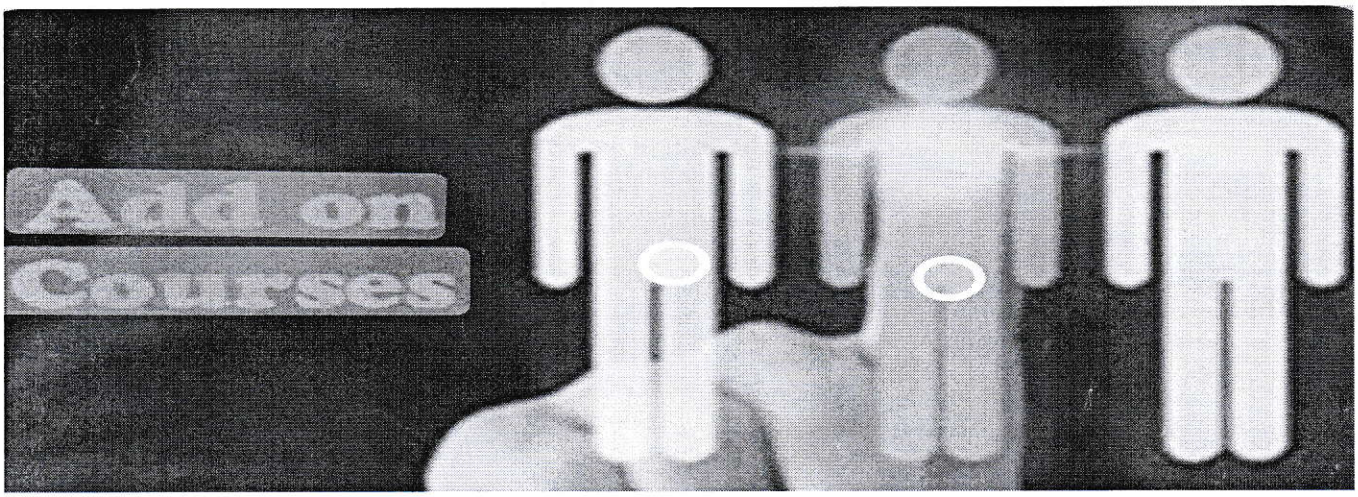
Mathematical Methods for Economics - I					
Sl. No.	**Paper & Unit**	**Topic Proposed to be Covered**	**Class Allotted**	**Time**	**Remarks**
01	**Unit-1**	Set and set operation, Cartesian problem, Relation function and their properties. Number Systems types of functions.	Mrs. Sasmita Ray	1Hours	
02		Graphs and graphs of functions, Limit and continuity.	Mrs. Sasmita Ray	1Hours	
03	**Unit-2**	Derivative and slop of curve	Mrs. Sasmita Ray	1Hours	
04		Continuity of a function.	Mrs. Sasmita Ray	1Hours	
05		Differentiability of a function.	Mrs. Sasmita Ray	1Hours	
06		Rules of differentiation for a function of one variable.	Mrs. Sasmita Ray	1Hours	
07		Relationship between total, average and marginal function.	Mrs. Sasmita Ray	1Hours	
08	**Unit-3**	Partial Differential techniques.	Mrs. Sasmita Ray	1Hours	
09		Geometric interpretation of partial derivatives.	Mrs. Sasmita Ray	1Hours	
10		Partial derivatives in Economics.	Mrs. Sasmita Ray	1Hours	
11		Elasticity of a function; Cross and Partial elasticity.	Mrs. Sasmita Ray	1Hours	
12	**Unit-4**	Matrices.	Mrs. Sasmita Ray	1Hours	
13		Determinants	Mrs. Sasmita Ray	1Hours	
14		Crammers rule	Mrs. Sasmita Ray	1Hours	
15		Matrix inversion.	Mrs. Sasmita Ray	1Hours	

REMUNA DEGREE COLLEGE , REMUNA ,BALASORE
Accredited By NAAC with B++ Grade

SYLLABUS FOR UNDERGRADUATE
ADD ON COURSE IN ECONOMICS

Effective from the academic session 2020-21

UNDER CHOICE BASED CREDIT SYSTEM



Approved
Sanjaykumar Behera
15.2.21

15.02.2021

Debabijay Mishra
15.2.21

Department of Economics
Remuna Degree College
Remuna , Balasore
Website- www.remunadegreecollege.org
Email-remunadegreecollege@gmail.com
rdceconomics03@gmail.com

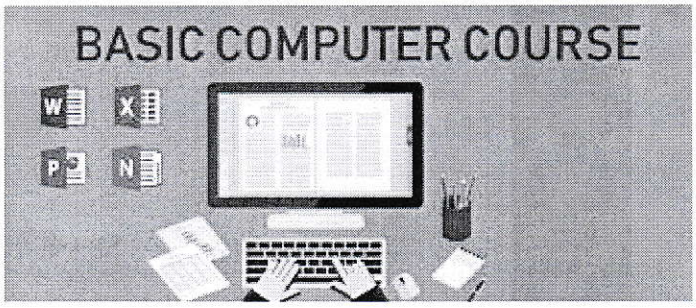
15/2/21

Remuna Degree College, Remuna, Balasore

Accredited By NAAC with B^{++}

Syllabus For

BASIC COMPUTER COURSE



Effective From the Academic session 2020-2021