

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution

(to provide the weblink)

For the clarification of the above point, I have written for one course (UG). Every dept. is required to write the explanation for each course UG and PG (if exist) separately and as a sample I am giving the following.

Department of Mathematics
Garhbeta College College
Garhbeta :: Paschim Medinipur :: 721127
West Bengal

PROGRAM OUTCOME (CO) OF GRADUATION

| PO | Summary | Description |
|-----------|--|---|
| PO1 | Introduction in Higher Mathematics | Familiarization with the wonderful direction in the understanding of Mathematics. |
| PO2 | Realization of Mathematics in Communication | Excellent communication of mathematics in geometrical realization, numbers and proposition make effective presentation to develop other branches of sciences. |
| PO3 | Gripe on analysis, assessment and conclusion | Enhance the capability of deep study and understanding in the subject mathematics and that comprehensive idea easily analyse the subject of mathematics and all other allied branches. |
| PO4 | Physical and mathematical problem solving | Generate the knowledge of solving problems in Computer Graphics, various models, circuits, linear system of equations, linear programming problem, Network flow problem, Mechanics, optimization and ability to provide new solutions using mathematical methods. |
| PO5 | Innovative skill development | Capability of thinking the various field of mathematics, advances in those fields and clear concept about them so that appropriate questions are formed on related fields. |
| PO6 | Application of Computers | To acquire the capability of information/ digital literacy using the software(C++) to solve statistical and numerical problems |
| PO7 | Confidence building on the subject | Critical thinking and self- directed learning aptitude grown up independently to study the subjects in its |

| | | |
|------|------------------------------|---|
| | | depth and apply thoughts for solving the problems in various field . |
| PO8 | Applicability of Mathematics | Develop an applicational skills in planning, monitoring, optimization, resources, money and acquire a value in return. |
| PO9 | Experimentation | Using mathematical tools or computer students are able to identify problem and the reason in constructive to make viable arguments. It may make them eager to apply mathematics in real-life problems. |
| PO10 | Employment and Carriers | Inculcate the ability to find jobs in intelligence analysis, optimization, statistical analysis, mathematical logic support, financial analysis, market research, management consultant, IT, software engineering, computer programming, Teaching, Banking, higher research in mathematics. |
| PO11 | Journey to learn in life | Accomplish a nature of life long learning to acquire the ability of grasping any scientific text in the broadest context of scientific development. |
| PO12 | Moral and ethical | Moral and Ethical To acquire the ability unbiased approach, trueness of action |

PROGRAMME SPECIFIC OUTCOME (PSO) :: GRADUATION IN PURE SCIENCE (B. Sc)

| PCO | Description |
|-------------|---|
| PCO1 | Adopted the methodology to think, assimilate and point to the concrete conclusion in every topic in a critical manner. |
| PCO2 | In a crucial and critical environment, a student get ready to provide information about any problem in view of mathematical component, be able to identify, locate, evaluate and use that information effectively. |
| PCO3 | Promote an inherent nature to formulate and develop every problem in unique theory and logic with mathematical reasoning. |
| PCO4 | Accumulate a deep knowledge for the concatenation of mathematics, statistics and computer science and understanding the advanced areas of those subjects. |
| PCO5 | Create awareness to become an enlightened citizen with commitment to deliver one's responsibilities with in the scope of bestowed rights & privileges |
| PCO6 | Boosts and carryover the use of quantitative models arising in social science, business and other contexts. |
| PCO7 | Generate the knowledge of mathematics to explain the physical phenomena |
| PCO8 | To manage a real-life problem and socio-economic hurdles, a student use his/her idea and experience of solving mathematical juggleries and riddles. In this context few mathematical topics like geometry, pure mathematics, computer programming etc. are best to overcome unexpected situation. |
| PCO9 | Interaction with teachers, friends and co-learners broadened the vision humanity to a great extent label. |

COURSE OUTCOME (CO) FOR THE ACADEMIC YEAR 2018-2019
NAME OF THE COURSE :: B. Sc. IN MATHEMATICS HONOURS

CORE COURSE : MATHEMATICS

| Semester | Paper code & Name | Outcomes |
|----------|--|---|
| I | Paper CC1 ----- Calculus, Geometry & Differential Equation | --Introduction to do higher order derivative by Leibnitz's rule and reduction formula for various type of integration. --Application of derivatives in other sciences --Concept of different curves and their pictorial representation --Enable to get idea of 2 & 3-dimensional shapes -- Enable to solve the various type of ordinary differential equations |
| | Paper CC1 --- Algebra | --Use of Complex numbers---- De Moivre's Theorem to solve various types of numerical -- Enable to get information of roots by observing the coefficients of algebraic equations --understanding of the consistent and inconsistent of system of linear equations and their solution method --To get idea of relation and partition by equivalence relation and divisibility --Enable to find eigen values and eigen vectors, to find inverse of a square matrix by using Cayley-Hamilton Theorem |
| II | Paper CC3 ----- Real Analysis | Getting the insight of real analysis, set theory line and points, different type of sets of real line --To get idea of the convergency and divergency of a sequence in R and to find their limit superior and limit inferior. --Various test of convergency, the comparison test, ratio test, root test to recognise the idea of convergency and divergency of the series of real numbers. |
| | Paper CC4 --- Differential Equations & Vector calculus | --Classification of differential equation and various techniques of their solution; ----- homogeneous and nonhomogeneous equations of higher order with constant coefficients. --To solve system of linear differential equations -- Solution by method of power series and variation of parameters. -- Scalar triple product of vectors and differentiation and integration of vector valued function. |
| III | Paper CC5 (Theory of Real Functions & Introduction to Metric Space) | To understand limit, continuity of single valued function in (\mathbb{R}, \mathbb{R}) approach. -- Concept of relative extrema, interior extremum theorem, Rolle's theorem, Mean value theorem, intermediate value property of derivatives, Darboux's theorem and Caratheodory's theorem and their applications. -- Idea about metric spaces and their properties like openness, closedness etc. |
| | Paper CC6 (Group Theory-1) | geometrical objects. -- Concept of subgroups, cyclic groups, normal subgroup and their basic properties --Concept of group homomorphism and proof of First, Second and Third isomorphism theorems |
| | | |

| | | |
|-----------|---|--|
| | Paper CC7 --Numerical Methods-- Theory | Learn to find the roots of algebraic and transcendental equation by numerical method such as, fixed point iteration, Newton-Raphson method -- To find the solution of system of linear equations by Gauss Jacobi method, Gauss Seidel method and their convergence analysis. --To find value of integration by Trapezoidal rule, Simpson's 1/3 rd rule etc. -- Numerical solution of differential equations by Euler's method, the modified Euler method, Runge-Kutta methods |
| | Paper CC7 --Numerical Methods-Lab | --Learning programming language C and C++ , writing ability to design C program. -- generate C programs to solve problems of numerical methods ---develop skill to write programs about string manipulation, numerical and statistical problems. |
| | SEC- --Logic & Sets | --Concept about syntax of 1 st order logic and semantics of 1 st order Languages --Idea about sets, its properties, countability, power set of a set. --Concept of relations, partitions and equivalence relations with example. |
| IV | Paper CC8 ---Riemann Integration and Series of Functions) | --Initialization of Riemann concept of integration & its applications. Fundamental Theorem of Integral Calculus, MVT in integral calculus, --Notion of convergency, absolute and uniformly convergency of sequence of function and series of functions -- evaluation of improper integration and Beta, Gamma functions -- change a function to a series by Dirichlet's condition, Fourier series & Power series and their applications |
| | Paper CC9 ---Multivariate Calculus | --Introduction to functions of several variable of calculus for the function of more than one variable. Method of Lagrange multipliers to find optimum value of a function of several variables. evaluation of line integration, double integration and triple integration and to solve different types of problems by using Stoke's and Green's Theorems. |
| | Paper CC10 --Ring Theory and Linear Algebra I | --A deeper study of abstract algebra, concept of rings and its properties. -- Concept of subrings, integral domains, fields, ideals, quotient rings, prime and maximal ideals. --Concept of ring homomorphism and proof of First, Second and Third isomorphism theorems -- Concept of vector space and linear transformations |
| | SEC-2 --Graph Theory | --Concept of graph theory with applications. --Idea of modelling and activity network. --Use of optimum time and space complexity methods |
| V | Paper CC11 (Partial Differential Equations & Applications) | --Learn about partial differential equations, its classification, construction and geometrical interpretation. -- Derivation of heat equation, wave equation and Laplace equation. --Study of central force, constrained motion, varying mass. Kepler's law of planetary motion. |
| | Paper CC12 (Group Theory- II) | --Learn about automorphism groups, external & internal direct product of groups, group actions and Sylow's theorems |
| | DSE-I (Linear Programming) | --Introduction of Linear Programming Problems (LPP) and various methods for its solutions. --Idea about Game Theory: formulation of two person zero sum games and its solutions |

| | | |
|-----------|--|---|
| | DSE-I (Point Set Topology) | --Concept of Number system , Cantor's theorem, axioms of Choice, - -Idea about Topological space, homomorphism, product , quotient and metric Topology, theorems (Baire Category) --Concept of connectedness and compactness of a Topological Space |
| | DSE-2 (Probability and Statistics) | --Concept of Random Variables and corresponding Sample Space. --Learn the different distributions and measure the central tendency of them. |
| VI | Paper CC13 (Metric Spaces and Complex Analysis) | --Learn the concept of Metric space, Mapping ,compactness and connectedness, Heine-Borel property, contraction , Banach fixed point Theorem related to Metric space. --Concept of various property of Complex Number , Differentiability and Analyticity of Complex Valued function , Formation of Cauchy- Reimann equation. --Idea about Contour and Contour Integral, Learn related theorem like Cauchy- Goursat theorem and Cauchy Integral formulae. --Apply Lioville's theorem in fundamental theorem of algebra. --Learn the Taylor series, Laurent Series and convergence of power series. |
| | Paper CC14 (Ring Theory and Linear Algebra- II) | --Study of polynomial rings, division algorithm and consequences. -- Idea about dual spaces, dual basis, Cayley-Hamilton theorem and minimal polynomial for a linear operator. Inner product space and its properties |
| | DSE-3 (MechanicsDSE- 3 (Number Theory | Idea about virtual work, centre of gravity , equilibrium conditions of a particle on a rough curve, its stability. --Understand different type of equation of motion like motion of projectile in resisting medium, under inverse square law, artificial satellite, etc. --understand the concept of inertia, degree of freedom of rigid body and product of inertia, D'Alembert's principle. --Learn about Compound pendulum and impulsive forces, conservation of momentum and energy |
| | DSE-3 (Number Theory | --Learn about linear Diophantine equation, prime counting function, Goldbach conjecture, Chinese Remainder theorem, Fermat's and little son theorem --Concept of Dirichlet's Product, Mobius Inversion formulae, Euler phi function and residues. --Learn about integer modulo n, Legendre Symbol, Femat's Last Theorem. |
| | DSE-4 (Mathematical Modelling) | --Learn Legendre and Bessel's equation and find their power series solution. --Learn about Laplace transform, inverse Laplace transform and its applications to second order PDE and ODE. --Concept of simulation used in Monte Carlo Simulation Modelling, Over viewing optimization modelling, Learn LPP model and use sensitivity analysis. |
| | DSE-4 (Differential Geometry) | --Learn space curve, planar curves, curvature, torsion, Serret-Frenet formula, evolutes and involutes of curves --Understand Parametric curves on surfaces, direction coefficients, principal and Gaussian curvatures, Geodesics curvature, Euler's theorem, Gauss bonnet theorem |

PROGRAM OUTCOME (CO) OF POST-GRADUATION

| PO | Summary | |
|-----|--|--|
| PO1 | Mathematical Knowledge | Apply the knowledge of mathematics to the solution of problems. |
| PO2 | Problem analysis | Identify, formulate, analyze/solve problems leading to the solution. |
| PO3 | Design/development of solutions | Design and develop methods and procedures for solving problems in industry, academia and real life. |
| PO4 | Conduct investigations of complex problems | Use research-based knowledge and research methods including the synthesis of the information to provide valid conclusions. |
| PO5 | Modern tool usage | Create, select, and use modern mathematical tools including prediction and understanding of the limitations. |
| PO6 | Individual and team work | Function effectively as an individual, and as a member of a team. |
| PO7 | Communication | Communicate effectively on technical and scientific community and with the society at large, submit reports, documentation, make effective presentations, and write technical reports. |
| PO8 | Life-long learning | Recognize the need for, and have the preparation and ability to engage in continuing and self-directed learning in the context of scientific & technological change. |

COURSE OUTCOME (CO) FOR THE ACADEMIC YEAR 2018-2019

NAME OF THE COURSE :: M.Sc. In Applied Mathematics with

Oceanology and Computer Programming

| Semester | Paper code & Name | |
|----------|--|--|
| I | MTM-101 REAL ANALYSIS | --To understand the compactness, completeness and connectedness of metric spaces. --To verify whether a function is a function of bounded variation and get acquainted with the theory of Lebesgue measure. --To understand the fundamentals of measure theory and be acquainted with the theory of Lebesgue integration. --To develop a perspective on the broader impact of measure theory and the ability to apply it. |
| | MTM-102 | --To understand the fundamental concepts of complex analysis and their importance. --To learn accurate and efficient use of complex analysis techniques. --Mathematical reasoning through analyzing, proving and explaining concepts from complex analysis. --To develop problem-solving ability using complex analysis techniques applied to real-world problems. |

| | | |
|--|---|---|
| | <p>COMPLEX ANALYSIS</p> | |
| | <p>MTM-103</p> <p>ORDINARY DIFFERENTIAL EQUATIONS AND SPECIAL FUNCTIONS</p> | <p>--Many real-life problems are redesigned based on the ordinary differential equations with eigen function that can help a lot to solve real-life problems.</p> <p>--To learn Green's function which is an effective technique for solving complex</p> <p>--Nowadays complex real-life problems cannot be designed on single differential equations</p> <p>--In this content, learners mainly achieve the solution procedure of special type differential equations</p> |
| | <p>MTM-104</p> <p>ADVANCED PROGRAMMING IN C AND MATLAB</p> | <p>--To get idea about features of numeric computation, advanced graphics and visualization</p> <p>--To use arrays and matrices to solve the various types of problems such as algebraic, differential equations</p> <p>--To use pointers in function, structure, union, dynamic memory management to construct</p> <p>--To apply how to create a data file in which input data and output data can be stored</p> |
| | <p>MTM-105</p> <p>CLASSICAL MECHANICS AND NON-LINEAR DYNAMICS</p> | <p>--To use the Lagrangian formulation for analyzing problems in Mechanics and describing</p> <p>--To deconstruct complex problems into their building blocks. Translate physical</p> <p>--To demonstrate the ability to apply basic methods of classical mechanics towards solving</p> <p>--To learn technique for solving mathematical problems using vibrational principle.</p> <p>--To use Lorentz transformation for describing the physical situations in inertial frames</p> <p>--To gain knowledge above special theory of relativity frames of reference using Lorentz</p> <p>--To understand fundamental problems of non-linear dynamics.</p> |
| | <p>MTM-106</p> <p>GRAPH THEORY</p> | <p>--To understand and apply the fundamental concepts in graph theory.</p> <p>--To describe and solve some real-time problems using concepts of graph theory.</p> <p>--Discuss the concept of graph, tree, Euler graph, cut set and Combinatorics.</p> <p>--Apply graph theory based tools in solving practical problems in science, business and industry</p> |
| | <p>MTM-197</p> <p>LAB-1: (COMPUTATIONAL METHODS: USING MATLAB)</p> | <p>--An introduction to MATLAB and it is based on interactive examples and hands-on</p> <p>--The utility of basic MATLAB and its demonstration.</p> <p>--Matrix manipulations, plotting of functions and data implementation of algorithms.</p> <p>--Applications in various disciplines such as engineering, science, and economics.</p> |

| | | |
|-----------|---|---|
| II | MTM-201 FLUID MECHANICS | --To describethemotionoffluidsandidentifythederivation --To makedimensionalanalysisandsimilitude. --To knowboundarylayertheory. --Findingtheexact/analyticalSolutionofNavier-Stokeseq --To knowthepreliminarycomputationaltechniquesforth |
| | MTM-202 NUMERICAL ANALYSIS | --Thenumericalmethodsforinterpolation(splineinterpolation). --Functionapproximationbyleastsquaremethodandusingorthogonalpolynomial --Thesolutionofordinarydifferentialequations(RK-methods,predictor-correcto --Thesolutionof systemoflinearandnon-linearequations andmatrixinversionw --Computationofeigenvaluesandeigenvectorsofamatrix. --The solution of partial differential equations (finite difference method) and --Some computer programs will learn in this course. The programming skill will |
| | MTM-203 I. ABSTRACT ALGEBRA II. LINEAR ALGEBRA | UNIT-I --To analyzeanddemonstrateexamplesofquotientgroups --To usetheconceptsof isomorphismandhomomorphism --To understandtheimportanceofclassequation,Cauchy' --To analyzeanddemonstrateexamplesofideals,quotient UNIT-II --To gain knowledge on advanced concept of Linear Tr --To learn how to apply linear algebra for solving many --More concepts on eigen values and eigen vectors whi |
| | MTM-204A STATISTICAL AND NUMERICAL METHODS | --To apply method of interpolation and extrapolation fo --To recognize theerrorinthenumbergeneratedbythesolut --Processtocalculateandapplymeasuresoflocationandme --Computeandinterprettheresultsofbivariateandmultivar |
| | MTM-204B HISTORY OF MATHEMATICS | --Ageneralideaoftheevolutionofsomeofthemajorconcept --To understandbasic,fundamental arguments thatwere o --To understand conceptsfromgeometry(suchasEuclid's --Solve different problems to differentiate functions usi |
| | MTM-205 GENERAL THEORY OF | --Theconceptofstraindeformationofanobjectasacontinuu --Theknowledgeaboutstressvectorwhichisappliedonmat --Therelationshipbetweenstraintensorandstresstensorsin --Fundamentalphysicallawssuchasthe conservationofm describingthebehaviourofsuchobjects,andsomeinformat |

| | | |
|------------|--|---|
| | CONTINUUM MECHANICS | |
| | MTM-206 | <ul style="list-style-type: none"> --Howthetopologyonaspaceisdeterminedbythecollection --Subspace topology, ordertopology, producttopology, me --Whatitmeansforafunctiontobecontinuous. --UrysohnlemmaandtheTietzeextensiontheorem,andcan |
| | GENERAL TOPOLOGY | |
| | MTM-297 | <ul style="list-style-type: none"> --Interactiveexamplesandhands-onproblemsolvingenvir --Thecourseistodemonstratesearching,sortingandstrings --DemonstratenumericalandstatisticalproblemsinC. --Applicationsinvariousdisciplinessuchasengineering,so |
| | LAB-2: (LANGUAGE: C-PROGRAMMING WITH NUMERICAL METHODS) | |
| III | MTM-301 | <ul style="list-style-type: none"> --To usetheknowledgeoffirstandsecondorderpartialdifferentialequations(PDEs),th --To classifyPDEs,applyanalyticalmethods,andphysical --To solve practical PDE problems (Wave,Heat& Lapla --Find solution of Dirichlet's and Neumann's problem |
| | MTM-302 | <ul style="list-style-type: none"> --LaplaceandFouriertransformsarethepowerfultoolsforsolvingrealist --PDEisverydifficulttosolvedirectlybutusingthesetransforms,PDEisreducedtoan C --Wavelet transform is anothertransform technic thesolution.Specificallly,scientistandengineersusethewavelettransfor --Integral equation is an important concept in Applied Mathematics |
| | TRANSFORMS AND INTEGRAL EQUATIONS | |
| | MTM-303 | <ul style="list-style-type: none"> --Numericalmodeling ofoceancurrentsand transport,ana --Fieldobservations ofcurrents,internal waves andoptica --Modelling anduse of observati changeandairpollution,cloudphysicsandrelationsbetwee --Numerical weather forecasting and studies of process |
| | I. DYNAMICAL OCEANOLOGY AND METEOROLOGY | <ul style="list-style-type: none"> --Demonstrateandsolvethedifferenttypesofdeterministic --Cansolvetheproblemsinvolvingqueuingssystem. |

| | | |
|-----------|---|--|
| | II. OPERATIONS RESEARCH | --Demonstratesinglevariableandmultivariableoptimization |
| | MTM-304 DISCRETE MATHEMATICS | -- Simplifyandevaluatebasiclogicstatementsincludingcombinatorics --Represent a graph using an adjacency list andan adjacency matrix --Determine if a graph is a binary tree,Euler or a Hamiltonian graph --EvaluateBoolean functions andsimplify expression using Boolean algebra |
| | MTM-305A SPECIAL PAPER-OR: DYNAMICAL OCEANOLOGY | --TheRoleoftheNon-linearTermsandtheMagnitudesofTerms in the Non-linear Terms --To understand howtosolveaphysicalproblemofOceanography --Differentsubareas of Oceanology wheres/hecanpursue research |
| | MTM-305B SPECIAL PAPER-OR: ADVANCED OPTIMIZATION AND OPERATIONS RESEARCH | --To identifyanddevelopoperationalresearchmodelsfrom real life situations --To understandthematematicaltoolsthat are needed to solve the proposed model --To useofmathematicalsoftware to solve the proposed model --To develop a report that describes the making processes in Management Engineering. |
| | MTM-306A SPECIAL PAPER-OR: DYNAMICAL METEOROLOGY-I | --Differentthermodynamicslawstobeappliedintheatmosphere --Theunderstandingofthebasicphysicalprocessesoccurring in the atmosphere --To gain someknowledgeaboutglobalcirculationintheatmosphere --Theprimaryscientificbasisforweatherandclimateprediction |
| | MTM-306B SPECIAL PAPER-OR: OPERATIONAL RESEARCH MODELING-I | --To formulatemathematicalmodelsforuncertaininventory control --To understandthetechniqueslike dynamicprogramming --Cansolve linearandnon-linearoptimizationproblems. --Applicationofsimulationtosolveproblemsininventory control |
| IV | MTM-401 FUNCTIONAL | --To understand howfunctionalanalysisusesandunifies the concepts of linear algebra and calculus --Applications of fundamental theorems like the Weierstrass approximation theorem, and the Uniform Boundedness principle. --To apply ideas from the theory of Hilbert space to other areas of mathematics --To apply Hilbert space theory, including Riesz representation theorem |

| | | |
|--|--|--|
| | ANALYSIS | |
| | MTM-402 I. FUZZY MATHEMATICS WITH APPLICATIONS II. SOFT COMPUTING | --To get somefundamentalknowledgeoffuzzysets,numbers,matrix,ordinarydi --To acquireknowledgeofvariousoperationsonabovefuzzysets. --Solvingthefuzzyordinarydifferentialequation,fuzzylinearprogrammingprobl --To acquire somefundamentaluncertainprogrammingsolvingskillwhichoccur --Understandingthebasicconcepts Softcomputinglikeho --Understanding thebasicneuralnetworkmodelsandillust --To understandthefuzzylogicandsystemcontrolwithhelp --To understandgeneticalgorithmmandhandsonsolvingopt |
| | MTM-403 I. MAGNETO HYDRO-DYNAMICS II. STOCHASTIC PROCESS AND REGRESSION | --Thebasicconceptsandtheequationsofflowofviscousfluid --Abilitytotranslateamagnetichydrodynamicproblemna --Skillsinanalysisandsynthesis;theapplicationofknowled --Systemofequationscanbeappliedtodifferentastrophysic --To definebasicconceptsfromthetheory ofMarkov chain --To compute probabilities oftransitionbetweenstates an --To derivedifferentialequationsfortimecontinuousMark --To formulate simple stochastic process models in the --To acquiremoredetailedknowledgeaboutPoissonproce --To derivetheexpressionforthreeormoredimensionalcur |
| | MTM-404A SPECIAL PAPER-OM: COMPUTATIONAL OCEANOLOGY | --Solving simple equations for the motion in the ocean --Differentcomputationalmethodologywheres/hecanpur |
| | MTM-404B SPECIAL PAPER- | --There are several advancedconcepts on Non-linearOp Game,Stochastic Programming,Multi-ObjectiveProgran --To helpthe learners for solving complex mathematica --TouseethegeometricprogrammingforsolvingEngineerin |

| | |
|--|--|
| OR: NON-LINEAR OPTIMIZATION | --Tackling of random parameters in optimization problems |
| MTM-405A SPECIAL PAPER-OM: DYNAMICAL METEOROLOGY - II | --The concept of front which is very useful in prediction. --The idea of global circulation in the atmosphere. --The phenomena of numerical prediction in the atmosphere. --The some basic idea of turbulent motion in the atmosphere. |
| MTM-405B SPECIAL PAPER-OR: OPERATIONAL RESEARCH MODELING -II | --Have the knowledge of role of O.R. in solving real life problems. --Prepare and motivate future specialists to continue in their field. --Understand the technique to solve the problem using O.R. --Thorough understanding of reliability of a component. --Understanding of information theory and sources and causes of errors. --Entropy and its measurement and properties. --Knowledge of Shannon-Fano Encoding procedure and network coding. |
| MTM-406 DISSERTATION PROJECT WORK | --Identify key research questions within the field of Demography. --Demonstrate appropriate referencing and develop skills in using references. --Demonstrate knowledge and understanding of report writing. --Apply the demographic/statistical research training acquired. --Use and develop written and oral presentations skills. --Identify, summarise and critically evaluate relevant literature. --Identify, analyse and interpret suitable data to enable the research. --Understand and apply the theoretical frameworks to the chosen research. --Describe the process of carrying out independent research. --Analyse and synthesise research findings. |
| MTM-495A SPECIAL PAPER-OM: LAB. (DYNAMICAL METEOROLOGY) | --Determining of relative humidity, mixing ratio, virtual temperature, potential temperature. --Applications of thermodynamic diagram to analysis the stability in the atmosphere. |
| MTM-495B SPECIAL PAPER-OR: LAB. (OR METHODS USING MATLAB AND LINGO) | --Collecting data from different sources for the real-life applications. --In a nutshell, the learners will handle the real-life applications. |

