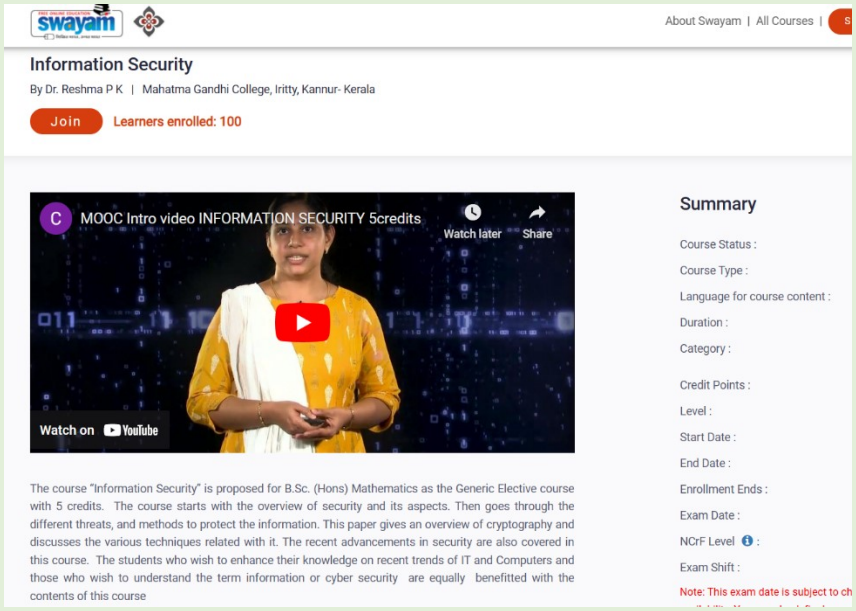
MAHATMA GANDHI COLLEGE, IRITTY

SWAYAM Courses for the Academic Year 2023-2024

During the academic year 2023-2024, faculty members of Mahatma Gandhi College, Iritty, actively contributed to various SWAYAM courses coordinated by the Consortium for Educational Communication (CEC), New Delhi, as the National Coordinator. Their roles included serving as Course Coordinators, Subject Experts, Content Editors, Video Presenters, and Video Previewers, showcasing their dedication to enhancing digital education.

1. Name of the MOOC : INFORMATION SECURITY
Link to the Course : https://onlinecourses.swayam2.ac.in/cec25_ma11/preview

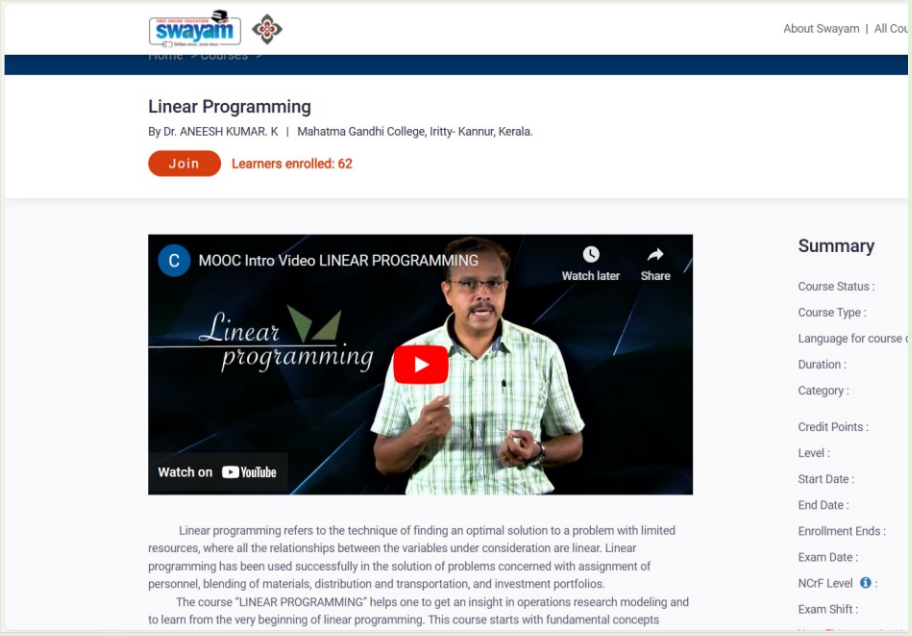


Name of the P.I /S.M.E : Dr Reshma P K, Assistant Professor, Dept. of Computer Science, Mahatma Gandhi College, Iritty

Name of the MOOC	: INFORMATION SECURITY
Name of the P.I /S.M.E	: Dr Reshma P K, Assistant Professor, Dept. of Computer Science, Mahatma Gandhi College, Iritty
Course Level	: UG
Subject	: Computer Science & Applications
Topic	: Computer Science & Applications
No. of Credits	: 5
Month & Year of the fresh course developed : January 2023	
No. of Modules	: 52
Running Status	: Rerun
Semester & Year of the present running of the course : January -May 2024	
Course Start Date	: 15.01.2024
Course End Date	: 29.04.2024
Total No. of Enrollments	: 2168
Date of Examination	: 25.05.2024

2. Name of the MOOC : Linear Programming

Link to the Course : https://onlinecourses.swayam2.ac.in/cec25_ma12/preview



Name of the P.I /S.M.E : Dr Aneesh Kumar K, Associate Professor and Head, Dept. of Statistics, Mahatma Gandhi College, Iritty

Course Level: UG

The following faculty members contributed for the MOOC Course for the Academic Year 2023-2024.

Dr Aneesh Kumar K, Associate Professor and Head, Dept. of Statistics, Mahatma Gandhi College, Iritty is the Subject Expert and Presenter of following modules:

Mathematical Formulation of Linear Programming Problems – More examples

Graphical Solution of Linear Programming Problems – More examples

Solution to Linear Programming Problem by Simplex Method – Special cases

Simplex Method – LPP with more than two variables

Additional problems on Two Phase and Big M Method

Dual Simplex Method – More Problems

Transportation Problem – Initial Basic Feasible Solution

More problems using N-W Corner, Row Minima and Least Cost Methods

Transportation Problem – Initial Basic Feasible Solution

More problems using Vogel's Approximation Method

Optimal Solution for Transportation Problems- Additional Problems -I

Optimal Solution for Transportation Problems- Additional Problems -II

More Assignment Problems

Assignment problems -Additional problems

Solving more game problems using graphical method

Linear programming formulation of game.

Mrs. Haseena C, Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Script Editor of following modules:

Mathematical Formulation of Linear Programming Problems – More examples

Graphical Solution of Linear Programming Problems – More examples

Solution to Linear Programming Problem by Simplex Method – Special cases

Simplex Method – LPP with more than two variables

Additional problems on Two Phase and Big M Method

Dual Simplex Method – More Problems

Transportation Problem – Initial Basic Feasible Solution

More problems using N-W Corner, Row Minima and Least Cost Methods

Transportation Problem – Initial Basic Feasible Solution

More problems using Vogel's Approximation Method

Optimal Solution for Transportation Problems- Additional Problems -I

Optimal Solution for Transportation Problems- Additional Problems -II

More Assignment Problems

Assignment problems -Additional problems

Solving more game problems using graphical method

Linear programming formulation of game.

Mrs. Priyanka P , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Script Editor of following modules:

Mathematical Formulation of Linear Programming Problems – More examples

Graphical Solution of Linear Programming Problems – More examples

Solution to Linear Programming Problem by Simplex Method – Special cases

Simplex Method – LPP with more than two variables

Additional problems on Two Phase and Big M Method

Dual Simplex Method – More Problems

Transportation Problem – Initial Basic Feasible Solution

More problems using N-W Corner, Row Minima and Least Cost Methods

Transportation Problem – Initial Basic Feasible Solution

More problems using Vogel's Approximation Method

Optimal Solution for Transportation Problems- Additional Problems -I

Optimal Solution for Transportation Problems- Additional Problems -II

More Assignment Problems

Assignment problems -Additional problems

Solving more game problems using graphical method

Linear programming formulation of game

Mrs. Vidya T. M., Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Video Previewr of following modules:

Mathematical Formulation of Linear Programming Problems – More examples

Graphical Solution of Linear Programming Problems – More examples

Solution to Linear Programming Problem by Simplex Method – Special cases

Simplex Method – LPP with more than two variables

Additional problems on Two Phase and Big M Method

Dual Simplex Method – More Problems

Transportation Problem – Initial Basic Feasible Solution

More problems using N-W Corner, Row Minima and Least Cost Methods

Transportation Problem – Initial Basic Feasible Solution

More problems using Vogel's Approximation Method

Optimal Solution for Transportation Problems- Additional Problems -I

Optimal Solution for Transportation Problems- Additional Problems -II

More Assignment Problems

Assignment problems -Additional problems

Solving more game problems using graphical method

Linear programming formulation of game

3. Name of the MOOC : Probability and Statistics

Name of the P.I /S.M.E : Dr Aneesh Kumar K, Associate Professor and Head, Dept. of Statistics, Mahatma Gandhi College, Iritty

Course Level: UG

The following faculty members contributed for the MOOC Course for the Academic Year 2023-2024.

Dr Aneesh Kumar K, Associate Professor and Head, Dept. of Statistics, Mahatma Gandhi College, Iritty is the Subject Expert and Presenter of following modules:

- Additional Problems on Conditional Probability and Independence of events
- Additional Problems on Discrete Random Variables
- Additional Problems on Continuous Random Variables
- Additional Problems on Bivariate Random Variables
- Properties of Covariance
- Additional Problems on Conditional Expectation
- Sampling Distribution
- Chi-Square Distribution
- Student's t-Distribution
- Snedecor's F- Distribution
- Estimation of Parameters and Unbiased Estimator
- Consistent, Efficient and sufficient Estimators
- Methods of Estimation - MLE and Method of Moments
- Interval Estimation-I
- Interval Estimation-II

Mrs. Haseena C, Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Script Editor of following modules:

Additional Problems on Conditional Probability and Independence of events

Additional Problems on Discrete Random Variables

Additional Problems on Continuous Random Variables

Additional Problems on Bivariate Random Variables

Properties of Covariance

Additional Problems on Conditional Expectation

Sampling Distribution

Chi-Square Distribution

Student's t-Distribution

Snedecor's F- Distribution

Estimation of Parameters and Unbiased Estimator

Consistent, Efficient and sufficient Estimators

Methods of Estimation - MLE and Method of Moments

Interval Estimation-I

Interval Estimation-II

Mrs. Priyanka P , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Script Editor of following modules:

Additional Problems on Conditional Probability and Independence of events

Additional Problems on Discrete Random Variables

Additional Problems on Continuous Random Variables

Additional Problems on Bivariate Random Variables

Properties of Covariance

Additional Problems on Conditional Expectation

Sampling Distribution

Chi-Square Distribution

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Estimation of Parameters and Unbiased Estimator

Consistent, Efficient and sufficient Estimators

Methods of Estimation - MLE and Method of Moments

Interval Estimation-I

Interval Estimation-II

Mrs. Vidya T. M., Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Video Previewr of following modules:

Additional Problems on Conditional Probability and Independence of events

Additional Problems on Discrete Random Variables

Additional Problems on Continuous Random Variables

Additional Problems on Bivariate Random Variables

Properties of Covariance

Additional Problems on Conditional Expectation

Sampling Distribution

Chi-Square Distribution

Student's t-Distribution

Snedecor's F- Distribution

Estimation of Parameters and Unbiased Estimator

Consistent, Efficient and sufficient Estimators

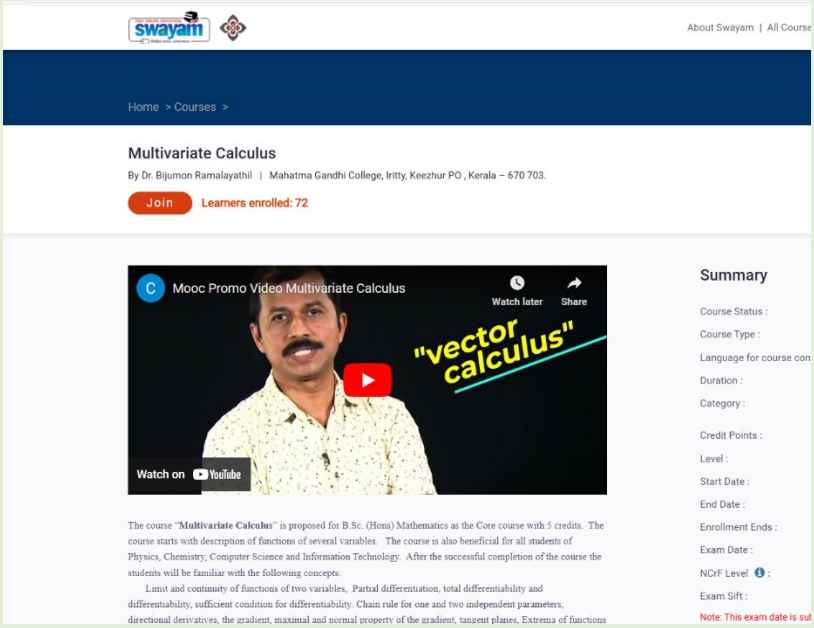
Methods of Estimation - MLE and Method of Moments

Interval Estimation-I

Interval Estimation-II

4. Name of the MOOC : Multivariate Calculus

Link to the Course https://onlinecourses.swayam2.ac.in/cec25_ma03/preview



Name of the P.I /S.M.E : Dr Bijumon Ramalayathil, Associate Professor and Head, Dept. of Mathematics, Mahatma Gandhi College, Iritty

Course Level: UG

The following faculty members contributed for the MOOC Course for the Academic Year 2023-2024.

Dr Bijumon Ramalayathil, Associate Professor and Head, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

Surface Integrals when Surfaces are given by Cartesian Equations

Orientation of Surfaces

Flux of a Vector Field through a Surface

Parametrized Surfaces

Surface Area of Parametrized Surfaces

Surface Integral of Parametrized Surfaces

Stokes' Theorem Part A

Stokes' Theorem Part B

The Divergence Theorem of Gauss

The Divergence Theorem for General Regions

Dr Bijumon Ramalayathil, Associate Professor and Head, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Presenter of following modules:

Cylinders

Quadric Surfaces

Functions of Several Variables (Domain, Range, and Graph of Functions of Several Variables)

Graph of Functions of Several Variables

Level Curves and Contour Lines of Functions of Several Variables AND Limit Along Curves of Functions of Two Variables

Limit and Continuity of Functions of Several Variables

Partial Differentiation

Partial Differentiation of Higher Order

Differentiability and Linearization of Functions of Two Variables

Total Differentials of Functions of Two Variables AND Differentiability, Linearization and Total Differential of Functions of Three Variables

Chain Rules for Functions of Several Variables

Applications of The Chain Rule - Implicit Differentiation

Directional Derivative of Functions of Two variables

Directional Derivative of Functions of Three Variables

Extreme values of Functions of Several Variables and Saddle Points

Absolute maxima and minima on closed bounded regions

Lagrange Multipliers with One Constraint

Lagrange Multipliers with Two Constraints

Double Integration over Rectangular Regions

Double Integration in Non-Rectangular Regions

Double Integrals by Reversing the Order of Integration and Area by Double Integrals

Double Integration in Polar Coordinates

Triple Integration in Cartesian Coordinates, Triple Integrals over General Surfaces in Cartesian Coordinates AND Triple Integrals in Cartesian Coordinates (Changing the Order of Integration)

Cartesian and Cylindrical Coordinate Systems

Spherical Coordinate System in Three Dimensional Space

Triple Integrals in Cylindrical Coordinates

Triple Integrals in Spherical Coordinates

Change of Variables in Double and Triple Integrals - Jacobians

Arc Length-Arcs given by Vector Valued Functions AND Arc Length Parameter, Speed and Unit Tangent Vector

Line Integrals - Integration Along Curves

Evaluation of Line Integrals

Applications of Line Integrals - Finding Centre of Mass

Vector Valued Functions, Vector Fields, Divergence and Curl

Line Integral of Vector Valued Functions

The Work Done by a Force Over a Curve in Space

Path Independence of Line Integrals - Fundamental Theorem of Line Integrals

The Divergence of a Vector Field AND k-component of Curl of a Vector Field

Green's Theorem - Normal Form

Green's Theorem - Tangential Form

Surface Area of Surfaces in Cartesian Form

Surface Integrals when Surfaces are given by Cartesian Equations

Surface Integrals when Surfaces are given by Cartesian Equations

Orientation of Surfaces

Flux of a Vector Field through a Surface

Parametrized Surfaces

Surface Area of Parametrized Surfaces

Surface Integral of Parametrized Surfaces

Stokes' Theorem Part A

Stokes' Theorem Part B

The Divergence Theorem of Gauss

The Divergence Theorem for General Regions

Dr Bijumon Ramalayathil, Associate Professor and Head, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer of following modules:

Cylinders

Quadric Surfaces

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Partial Differentiation of Higher Order

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Total Differentials of Functions of Two Variables AND Differentiability, Linearization and Total Differential of Functions of Three Variables

Chain Rules for Functions of Several Variables

Applications of The Chain Rule - Implicit Differentiation

Directional Derivative of Functions of Two variables

Directional Derivative of Functions of Three Variables

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Absolute maxima and minima on closed bounded regions

Lagrange Multipliers with One Constraint

Lagrange Multipliers with Two Constraints

Double Integration over Rectangular Regions

Double Integration in Non-Rectangular Regions

Double Integrals by Reversing the Order of Integration and Area by Double Integrals

Double Integration in Polar Coordinates

Triple Integration in Cartesian Coordinates, Triple Integrals over General Surfaces in Cartesian Coordinates AND Triple Integrals in Cartesian Coordinates (Changing the Order of Integration)

Cartesian and Cylindrical Coordinate Systems

Spherical Coordinate System in Three Dimensional Space

Triple Integrals in Cylindrical Coordinates

Triple Integrals in Spherical Coordinates

Change of Variables in Double and Triple Integrals - Jacobians

Arc Length-Arcs given by Vector Valued Functions AND Arc Length Parameter, Speed and Unit Tangent Vector

Line Integrals - Integration Along Curves

Evaluation of Line Integrals

Applications of Line Integrals - Finding Centre of Mass

Vector Valued Functions, Vector Fields, Divergence and Curl

Line Integral of Vector Valued Functions

The Work Done by a Force Over a Curve in Space

Path Independence of Line Integrals - Fundamental Theorem of Line Integrals

The Divergence of a Vector Field AND k-component of Curl of a Vector Field

Green's Theorem - Normal Form

Green's Theorem - Tangential Form

Surface Area of Surfaces in Cartesian Form

Mrs. Haseena C, Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

Evaluation of Line Integrals

Applications of Line Integrals - Finding Centre of Mass

Vector Valued Functions, Vector Fields, Divergence and Curl

Line Integral of Vector Valued Functions

The Work Done by a Force Over a Curve in Space

Mrs. Haseena C, Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer of following modules:

Cylinders

Quadric Surfaces

Functions of Several Variables (Domain, Range, and Graph of Functions of Several Variables)

Graph of Functions of Several Variables

Level Curves and Contour Lines of Functions of Several Variables AND Limit Along Curves of Functions of Two Variables

Limit and Continuity of Functions of Several Variables

Partial Differentiation

Partial Differentiation of Higher Order

Differentiability and Linearization of Functions of Two Variables

Total Differentials of Functions of Two Variables AND Differentiability, Linearization and Total Differential of Functions of Three Variables

Surface Integrals when Surfaces are given by Cartesian Equations

Orientation of Surfaces

Flux of a Vector Field through a Surface

Parametrized Surfaces

Surface Area of Parametrized Surfaces

Surface Integral of Parametrized Surfaces

Stokes' Theorem Part A

Stokes' Theorem Part B

The Divergence Theorem of Gauss

The Divergence Theorem for General Regions

Mrs. Haseena C, Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer (Video) of following modules:

Chain Rules for Functions of Several Variables

Applications of The Chain Rule - Implicit Differentiation

Directional Derivative of Functions of Two variables

Directional Derivative of Functions of Three Variables

Extreme values of Functions of Several Variables and Saddle Points

Absolute maxima and minima on closed bounded regions

Lagrange Multipliers with One Constraint

Lagrange Multipliers with Two Constraints

Double Integration over Rectangular Regions

Double Integration in Non-Rectangular Regions

Mrs. Priyanka P , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

Path Independence of Line Integrals - Fundamental Theorem of Line Integrals

The Divergence of a Vector Field AND k-component of Curl of a Vector Field

Green's Theorem - Normal Form

Green's Theorem - Tangential Form

Surface Area of Surfaces in Cartesian Form

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Parametrized Surfaces

Surface Area of Parametrized Surfaces

Surface Integral of Parametrized Surfaces

Stokes' Theorem Part A

Stokes' Theorem Part B

The Divergence Theorem of Gauss

The Divergence Theorem for General Regions

Mrs. Priyanka P , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer (Video) of following modules:

Double Integrals by Reversing the Order of Integration and Area by Double Integrals

Double Integration in Polar Coordinates

Triple Integration in Cartesian Coordinates, Triple Integrals over General Surfaces in Cartesian Coordinates AND Triple Integrals in Cartesian Coordinates (Changing the Order of Integration)

Cartesian and Cylindrical Coordinate Systems

Spherical Coordinate System in Three Dimensional Space

Triple Integrals in Cylindrical Coordinates

Triple Integrals in Spherical Coordinates

Change of Variables in Double and Triple Integrals - Jacobians

Arc Length-Arcs given by Vector Valued Functions AND Arc Length Parameter, Speed and Unit Tangent Vector

Line Integrals - Integration Along Curves

Mrs. Jimly Manuel , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

Cylinders

Quadric Surfaces

Functions of Several Variables (Domain, Range, and Graph of Functions of Several Variables)

Graph of Functions of Several Variables

Level Curves and Contour Lines of Functions of Several Variables AND Limit Along Curves of Functions of Two Variables

Limit and Continuity of Functions of Several Variables

Partial Differentiation

Partial Differentiation of Higher Order

Differentiability and Linearization of Functions of Two Variables

Total Differentials of Functions of Two Variables AND Differentiability, Linearization and Total Differential of Functions of Three Variables

Mrs. Jimly Manuel , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer of following modules:

Double Integrals by Reversing the Order of Integration and Area by Double Integrals

Double Integration in Polar Coordinates

Triple Integration in Cartesian Coordinates, Triple Integrals over General Surfaces in Cartesian Coordinates AND Triple Integrals in Cartesian Coordinates (Changing the Order of Integration)

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Triple Integrals in Cylindrical Coordinates

Triple Integrals in Spherical Coordinates

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Arc Length-Arcs given by Vector Valued Functions AND Arc Length Parameter, Speed and Unit Tangent Vector

Line Integrals - Integration Along Curves

Mrs. Jimly Manuel , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer (Video) of following modules:

Surface Integrals when Surfaces are given by Cartesian Equations

Orientation of Surfaces

Flux of a Vector Field through a Surface

Parametrized Surfaces

Surface Area of Parametrized Surfaces

Surface Integral of Parametrized Surfaces

Stokes' Theorem Part A

Stokes' Theorem Part B

The Divergence Theorem of Gauss

The Divergence Theorem for General Regions

Mrs. Maya P. V. , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

Chain Rules for Functions of Several Variables

Applications of The Chain Rule - Implicit Differentiation

Directional Derivative of Functions of Two variables

Directional Derivative of Functions of Three Variables

Extreme values of Functions of Several Variables and Saddle Points

Absolute maxima and minima on closed bounded regions

Lagrange Multipliers with One Constraint

Lagrange Multipliers with Two Constraints

Double Integration over Rectangular Regions

Double Integration in Non-Rectangular Regions

Mrs. Maya P. V. , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer of following modules:

Evaluation of Line Integrals

Applications of Line Integrals - Finding Centre of Mass

Vector Valued Functions, Vector Fields, Divergence and Curl

Line Integral of Vector Valued Functions

The Work Done by a Force Over a Curve in Space

Path Independence of Line Integrals - Fundamental Theorem of Line Integrals

The Divergence of a Vector Field AND k-component of Curl of a Vector Field

Green's Theorem - Normal Form

Green's Theorem - Tangential Form

Surface Area of Surfaces in Cartesian Form

Mrs. Maya P. V. , Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer (Video) of following modules:

- Cylinders
- Quadric Surfaces
- Functions of Several Variables (Domain, Range, and Graph of Functions of Several Variables)
- Graph of Functions of Several Variables
- Level Curves and Contour Lines of Functions of Several Variables AND Limit Along Curves of Functions of Two Variables
- Limit and Continuity of Functions of Several Variables
- Partial Differentiation
- Partial Differentiation of Higher Order
- Differentiability and Linearization of Functions of Two Variables
- Total Differentials of Functions of Two Variables AND Differentiability, Linearization and Total Differential of Functions of Three Variables

Mrs. Vidya T. M., Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Subject Expert of following modules:

- Double Integrals by Reversing the Order of Integration and Area by Double Integrals
- Double Integration in Polar Coordinates
- Triple Integration in Cartesian Coordinates, Triple Integrals over General Surfaces in Cartesian Coordinates AND Triple Integrals in Cartesian Coordinates (Changing the Order of Integration)
- Cartesian and Cylindrical Coordinate Systems
- Spherical Coordinate System in Three Dimensional Space

Triple Integrals in Cylindrical Coordinates

Triple Integrals in Spherical Coordinates

Change of Variables in Double and Triple Integrals - Jacobians

Arc Length-Arcs given by Vector Valued Functions AND Arc Length Parameter, Speed and Unit Tangent Vector

Line Integrals - Integration Along Curves

Mrs. Vidya T. M., Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer of following modules:

Chain Rules for Functions of Several Variables

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Lagrange Multipliers with Two Constraints

Double Integration over Rectangular Regions

Double Integration in Non-Rectangular Regions

Mrs. Vidya T. M., Assistant Professor, Dept. of Mathematics, Mahatma Gandhi College, Iritty is the Academic Reviewer (Video) of following modules:

Evaluation of Line Integrals

Applications of Line Integrals - Finding Centre of Mass

Vector Valued Functions, Vector Fields, Divergence and Curl

Line Integral of Vector Valued Functions

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