

## COURSE EXIT SURVEY: Analysis Report

Academic Session: 2025-26

Department of Mathematics

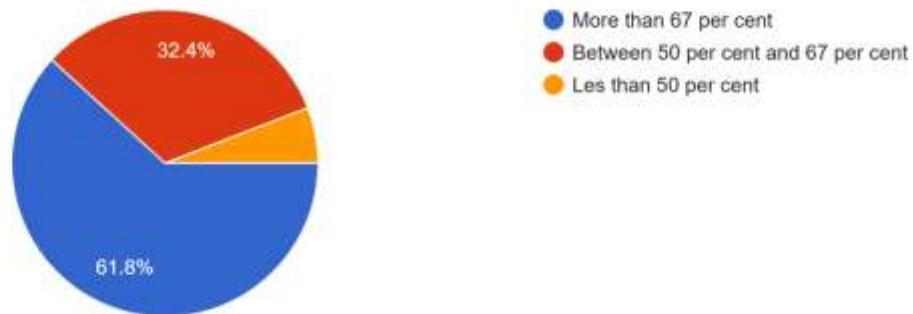
Program: B.Sc.(H) Mathematics / B. A. Major/Minor/GE/SEC/VAC

Semester: 2

Paper Name: DSC-4: Linear Algebra

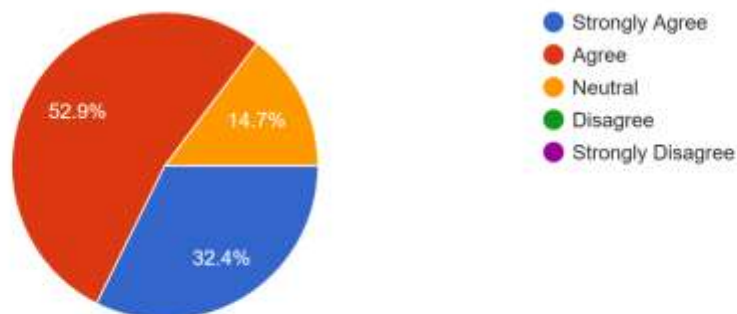
Percentage of classes attended

34 responses



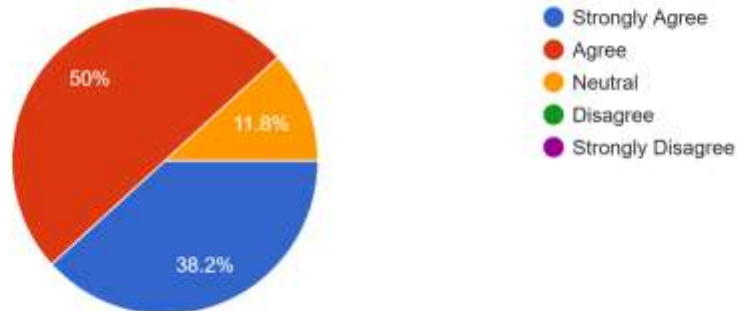
You have learned to visualize the space  $R^n$  in terms of vectors and their interrelation with matrices.

34 responses



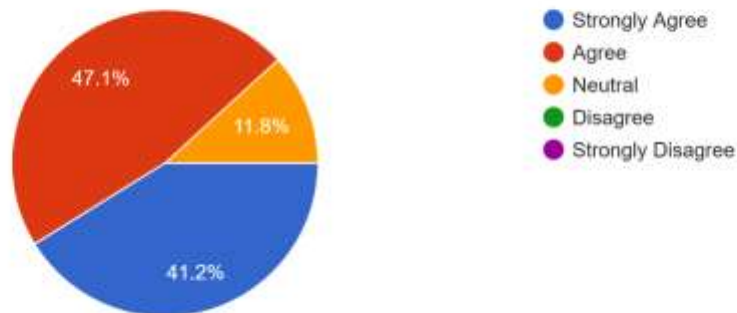
You have familiarized with basic concepts in vector spaces, linear independence and span of vectors over a field.

34 responses



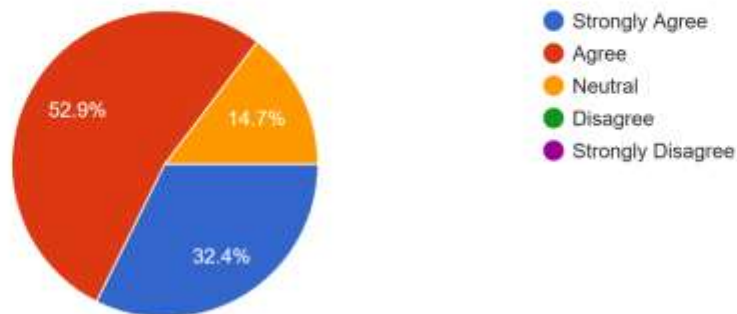
You understood the concept of basis and dimension of a vector space.

34 responses



You have learned the basic concepts of linear transformations, dimension theorem, matrix representation of a linear transformation with application to computer graphics.

34 responses



**Observations:**

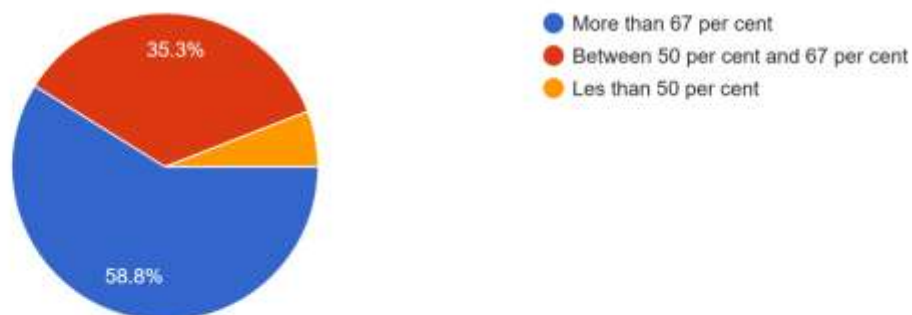
From the given responses, it is observed that above 80% students agreed that they learned to visualize the space  $R^n$  in terms of vectors and their interrelation with matrices, understood the basic concepts of vector spaces, linear independence and span of vectors over a field, basis and dimension of a vector space and concepts of linear transformations, dimension theorem, matrix representation of a linear transformation with application to computer graphics. It is also observed that students had an interest in the paper as 62% of students had more than 67% of attendance.

**Action Taken:**

For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance. Assessments would also be done at regular intervals.

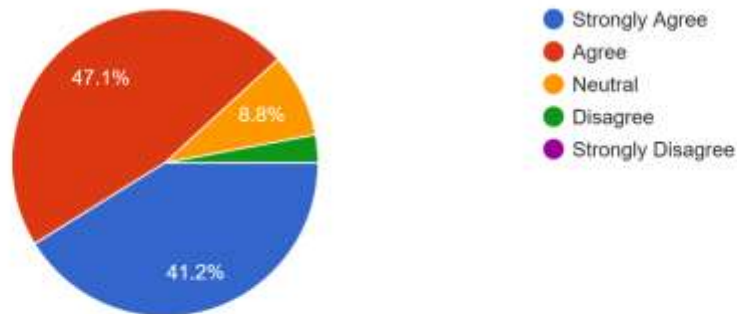
**DSC-5** **Calculus**

Percentage of classes attended  
34 responses



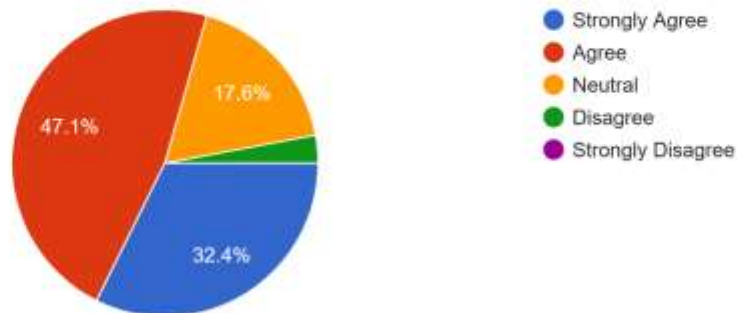
You understood the notion of limits, continuity and uniform continuity of functions.

34 responses



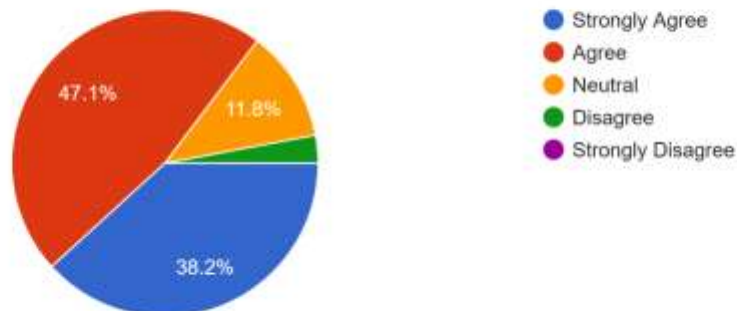
You have learned the geometrical properties of continuous functions on closed and bounded intervals.

34 responses



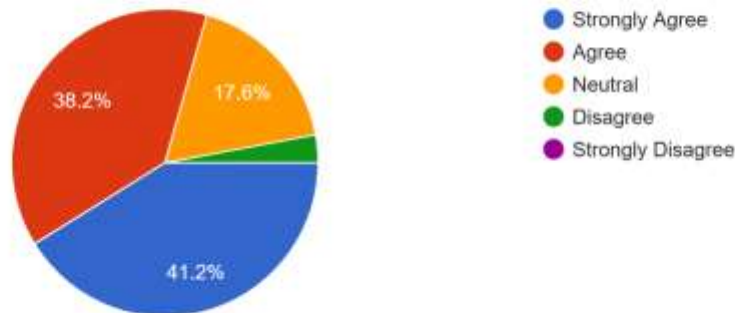
You understood the applications of derivative, relative extrema and mean value theorems.

34 responses



You learned the higher order derivatives, Taylor's theorem, indeterminate forms and tracing of curves.

34 responses



### Observations:

From the given responses, it is observed that around 75% to 85% of students agreed that they understood the notion of limits, continuity and uniform continuity of functions, geometrical properties of continuous functions on closed and bounded intervals, applications of derivative, relative extrema and mean value theorems and higher order derivatives, Taylor's theorem, indeterminate forms and tracing of curves. It is also observed that students had an interest in the paper as 59% of students had more than 67% of attendance.

### Action Taken:

For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing. Assessments would also be done at regular intervals.

## DSC-6 Ordinary Differential Equations

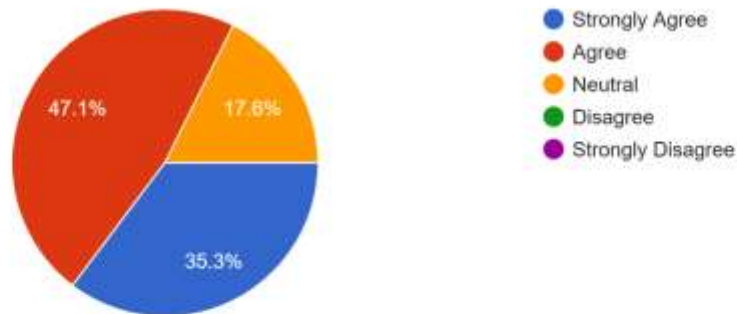
Percentage of classes attended

34 responses



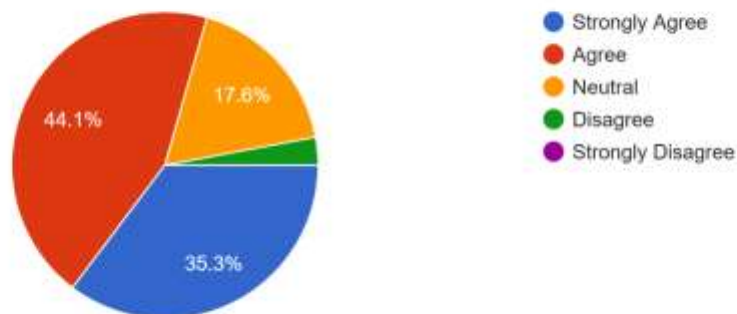
You understood the basics of differential equations and compartmental models.

34 responses



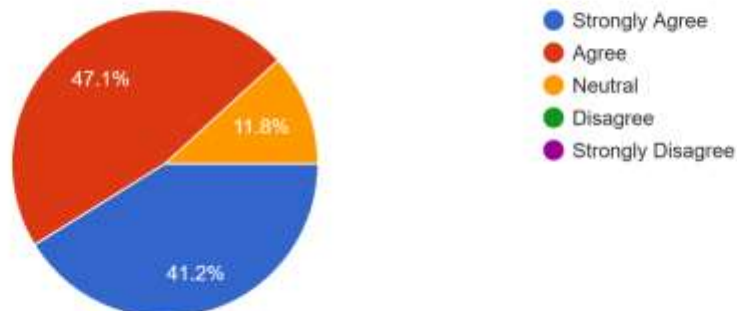
You have learned to formulate differential equations for various mathematical models.

34 responses



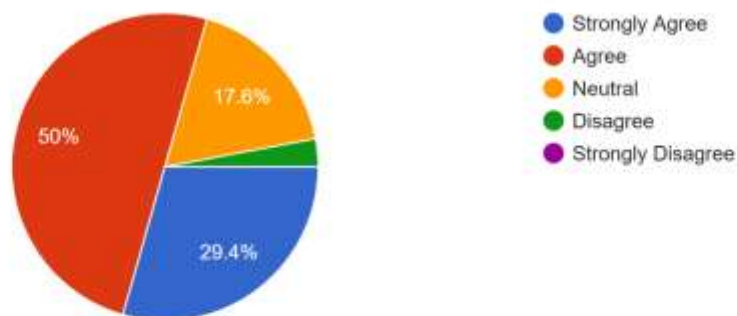
You learned to solve first order non-linear differential equations, linear differential equations of higher order and system of linear differential equations using various techniques.

34 responses



You have learned to apply these techniques to solve and analyze various mathematical models.

34 responses



### Observations:

From the given responses, it is observed that around 75% to 85% of students agreed that they understood the basics of differential equations and compartmental models, formulate differential equations for various mathematical models, solving first order nonlinear differential equations, linear differential equations of higher order and system of linear differential equations using various techniques and apply these techniques to solve and analyze various mathematical models. It is also observed that students had an interest in the paper as 65% of students had more than 67% of attendance.

### Action Taken:

For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Assessments would also be done at regular intervals.

## BA(Prog.) Major Semester-2

### DISCIPLINE SPECIFIC CORE COURSE – 2: Analytic Geometry

Percentage of classes attended

2 responses



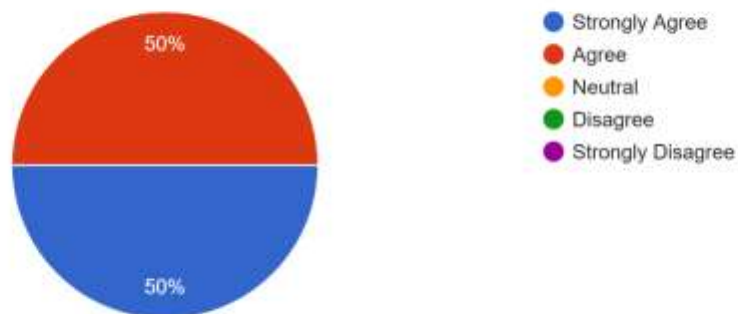
You have learnt the concepts in two-dimensional geometry.

2 responses



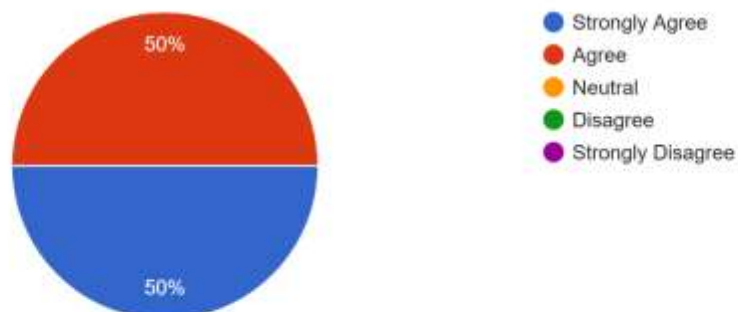
You have learnt to identify and sketch conics namely ellipse, parabola and hyperbola.

2 responses



You have learnt about 3D objects such as straight lines using vectors, spheres, cones and cylinders.

2 responses



You have learnt about 3D objects such as planes using vectors, spheres, cones and cylinders.

2 responses



### Observations:

From the given response, it is observed that the student agreed that she has learnt the concepts in two-dimensional geometry and is able to identify and sketch conics namely ellipse, parabola and hyperbola.

### Action Taken:

Measures will be taken to make the subject more popular so that more students will opt for this paper.

## SEC: IT Skills and Data Analysis II Semester-2

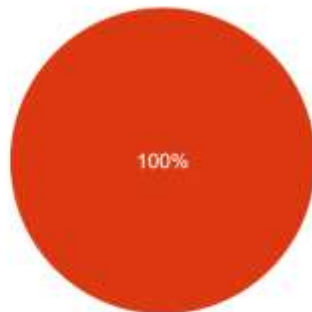
Percentage of Classes Attended

2 responses



You are able to establish relationship between variables using correlation and regression analysis.

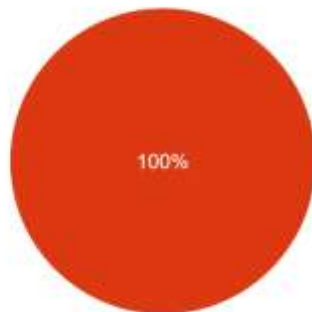
2 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

You are able to visualize functions.

2 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

You can use IT tools such as spreadsheets to visualise and analyse data.

2 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

You can differentiate between linear and non-linear functions.

2 responses



### Observations:

From the given response, it is observed that the student agreed that they learned to E-tourism, stages of ICT revolution, ICTS and new business tools, Strategic and Operational use of IT in Tourism, The Internet and tourism, Travel trade intermediaries-Features of a travel trade website, implementing a travel trade website, online travel intermediaries, E-business for Destination Management Organizations: Principles and concepts – Positioning, Social Media Marketing in Tourism - Facebook, Twitter, YouTube, WhatsApp - Travel Blogs, Artificial Intelligence- Virtual Reality - Challenges for conventional business models and Competitive strategies.

### Action Taken:

Measures will be taken to make the subject more popular so that more students will opt for this paper.

## SEC: Essentials of Python Semester-2

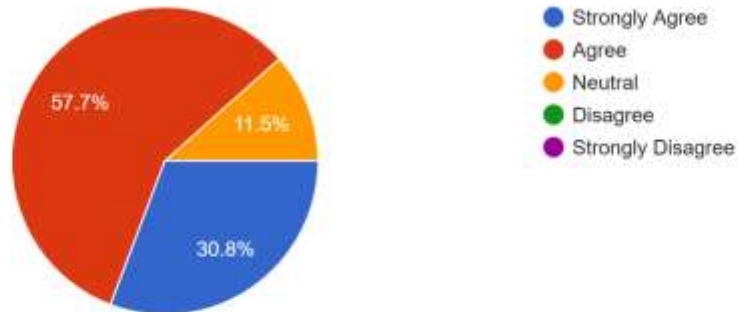
Percentage of Classes Attended

26 responses



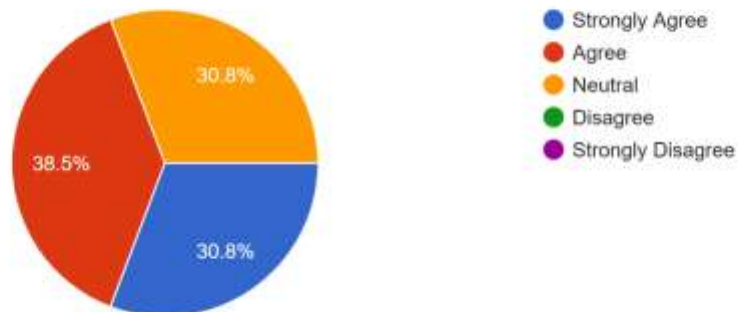
You are able to gain insight into concept of Python data structure and Data type.

26 responses



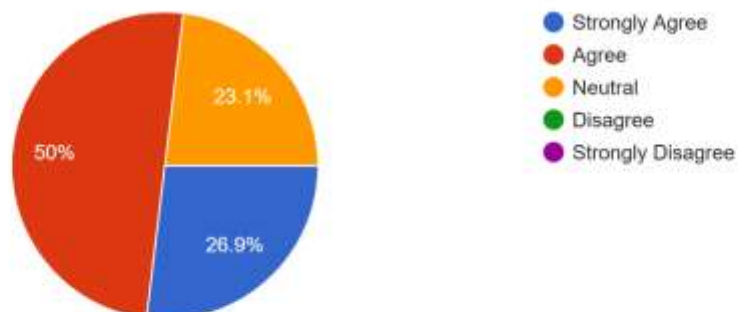
You will be able to learn and explain the Python program Flow.

26 responses



You are able to understand and implement the use of Python Function and Module.

26 responses



### Observations:

From the given responses, it is observed that 80% of the students strongly agreed and agreed that they were able to learn about Python's main features and how they make Python a great tool for financial analysts. Also they were able to use Python libraries like Pandas, NumPy, Matplotlib, Scikit-learn, and Seaborn. 76% of the students strongly agreed and agreed that they were able to get familiarized with Anaconda and Jupyter Notebook. 94.3% of the students strongly agreed and agreed that they were able to learn basics of Machine Learning. 75% of the students strongly agreed and agreed that they were able to use conditional statements and loops with basic programming in Python.

### Actions Taken

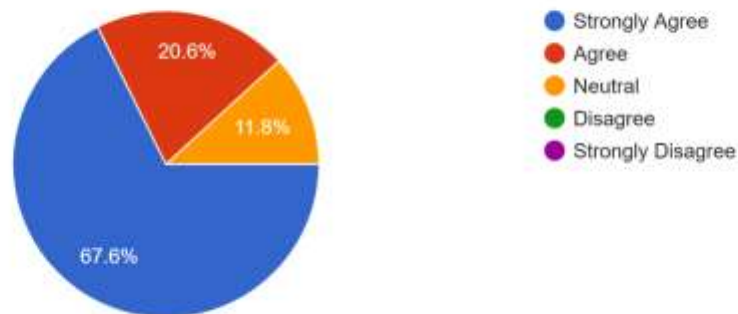
The response to this paper has been encouraging. More efforts will be made to keep students intrigued. For moderate responses, topics will be discussed more with the students in practicals. For the weaker students, special classes will be held to discuss important practicals with them. Assessments like tests, assignments, quizzes, presentations and internal practicals would also be done at regular intervals.

## Semester: 4

### DSC-10: Sequence and Series of Functions

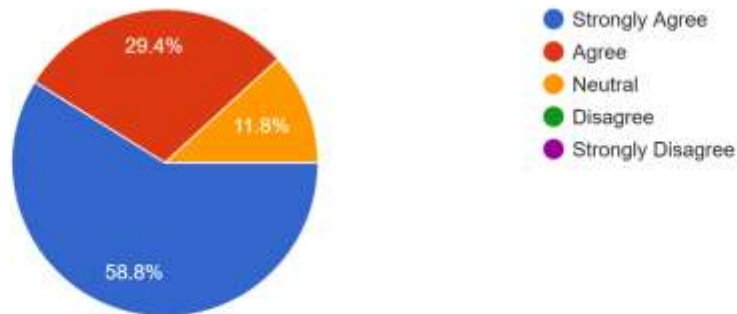
The course taught you the basic ideas of Sequences of Functions.

34 responses



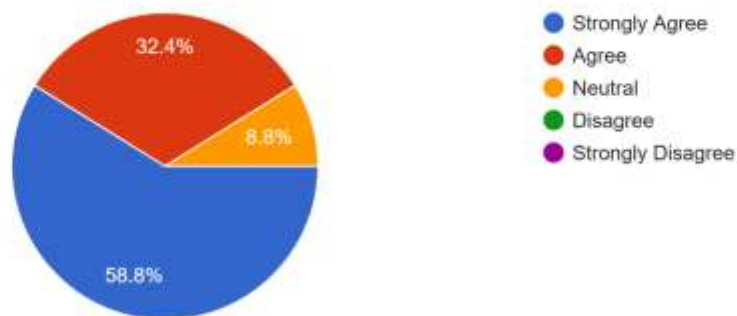
The course helped you to learn the significance of Series of Functions.

34 responses



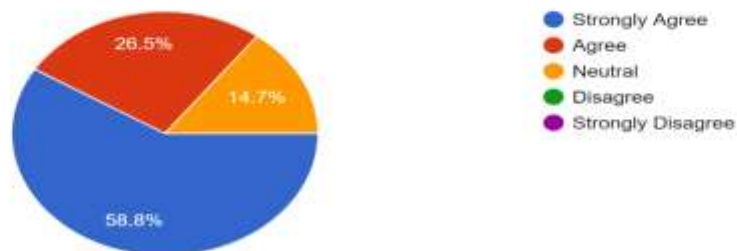
The course helped you to reframe your thinking about Definition of a power series, Radius of convergence, Absolute convergence (Cauchy-Hadamard theorem).

34 responses



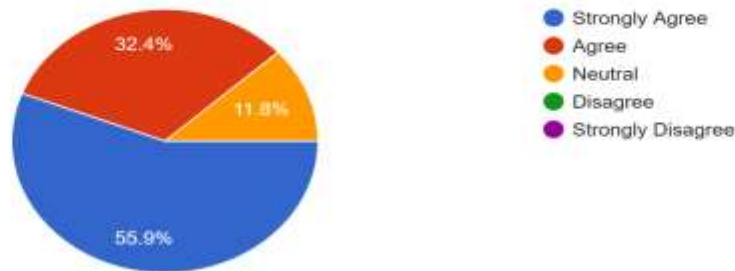
The course helped you to understand the role of Differentiation and integration of power series, Abel's theorem, Weierstrass's approximation theorem.

34 responses



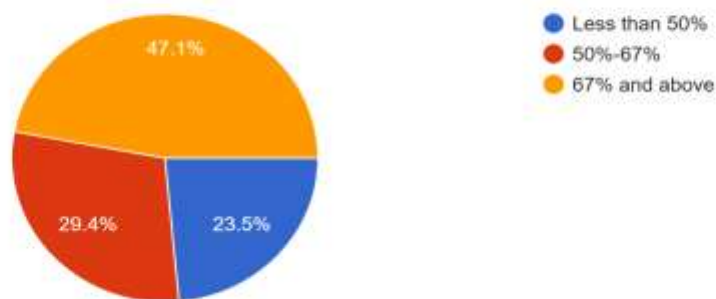
The course helped you to learn about The exponential, logarithmic and trigonometric functions: Definitions and their basic properties.

34 responses



How much was your attendance in this course?

34 responses



### Observations:

From the given responses, it is observed that around 75% to 85% of students strongly agreed and agreed that they got an understanding of some of the classes and properties of Riemann integrable functions, and the applications of the Fundamental theorems of integration, an understanding about improper integrals including, beta and gamma function, about Cauchy criterion for uniform convergence and Weierstrass M-test for uniform convergence, about the constraints for the inter-changeability of differentiability and integrability with infinite sum and about Approximate transcendental functions in terms of power series as well as, differentiation and integration of power series. It is also observed that students had keen interest in the paper as 88% of students had more than 67% of attendance.

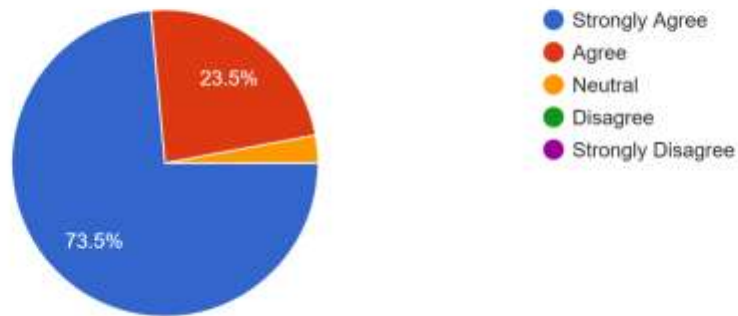
### Action Taken:

For improving attendance, the topics should be discussed with innovative ways so that students find the subject more interesting. For weaker students' topics should be discussed more with the students in tutorials. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals. Remedial classes will be taken for topics that students found a little difficult to understand.

## DSC-11: Multivariate Calculus

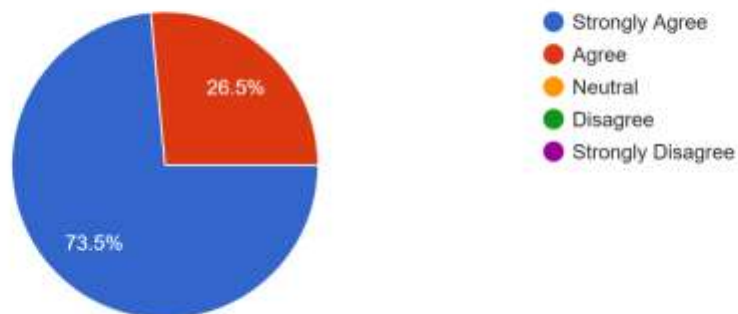
The course helped you to appreciate the significance of Calculus of Functions of Several Variables.

34 responses



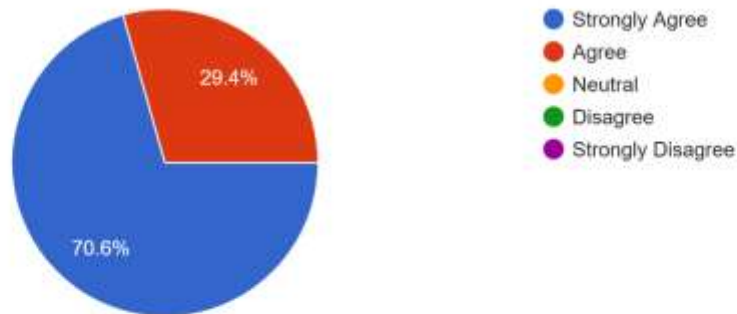
The course helped you to analyze the properties of Double and Triple Integrals.

34 responses



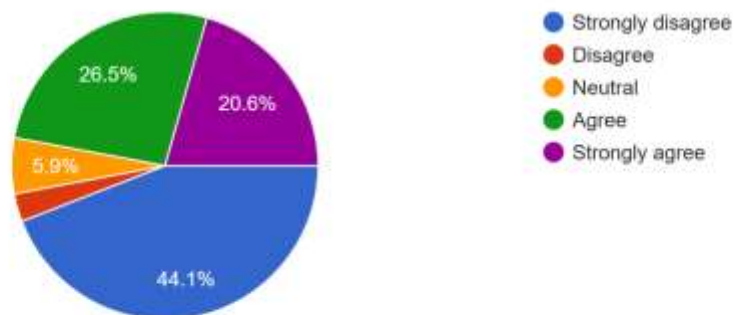
The course helped you to understand Green's, Stokes' and Gauss Divergence Theorem.

34 responses



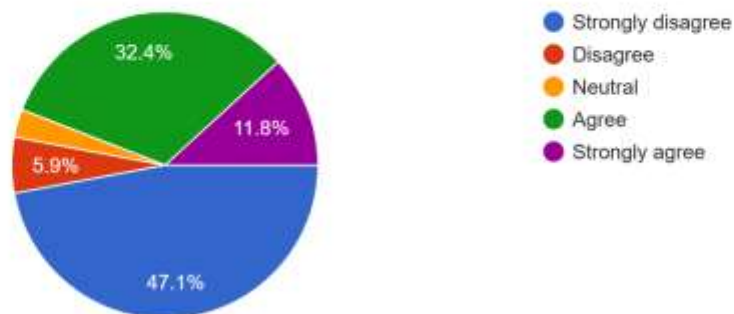
The course helped you to learn Vector field, Divergence and curl.

34 responses



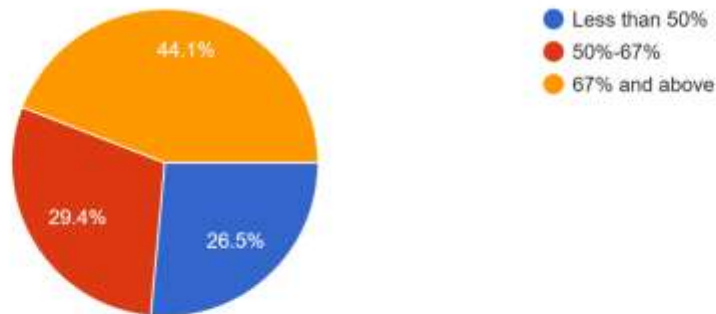
The course helped you to understand about the Conservative vector fields, Green's theorem, Area as a line integral, Surface integrals, Stokes' theorem.

34 responses



How much was your attendance in this course?

34 responses



### Observations:

From the given responses, it is observed that around 85-95 % of students strongly agreed and agreed that they were able to learn the conceptual variations when advancing in calculus from one variable to multivariable discussion. They were able to understand the maximization and minimization of multivariable functions subject to the given constraints on variables and about inter-relationship amongst the line integral, double and triple integral formulations. Students were familiarize with Green's, Stokes' and Gauss divergence theorems. It is also observed that students had an interest in the paper as 96 % of students had more than 67% of attendance.

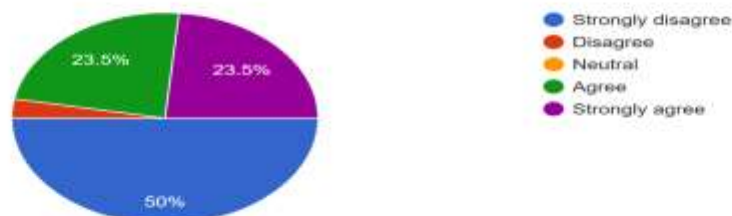
### Action Taken:

For the moderate responses, topics will be discussed more with the students. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments like quiz, presentations would also be done at regular intervals.

## DSC-12: Numerical Analysis

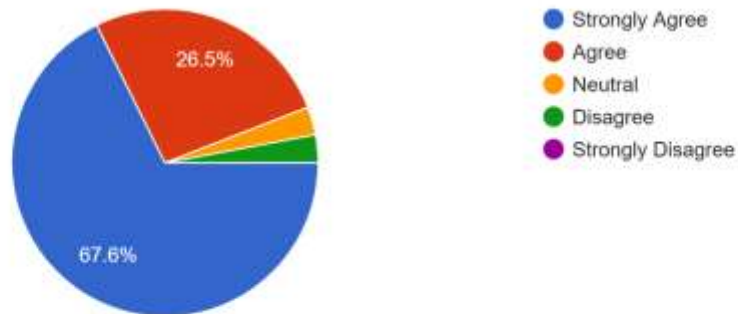
The course helped you to know the Basic concepts of Methods for Solving Algebraic and Transcendental Equations.

34 responses



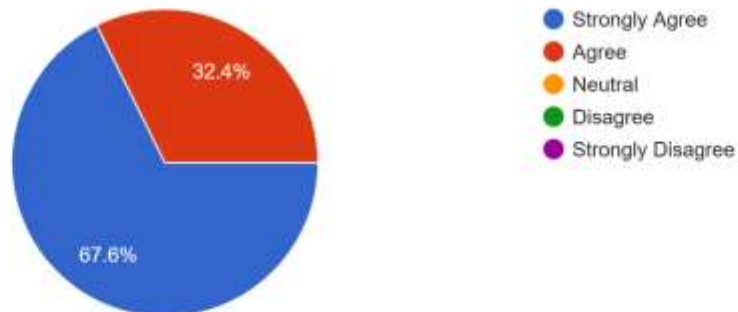
The course helped you to know the Techniques to Solve Linear Systems and Interpolation.

34 responses



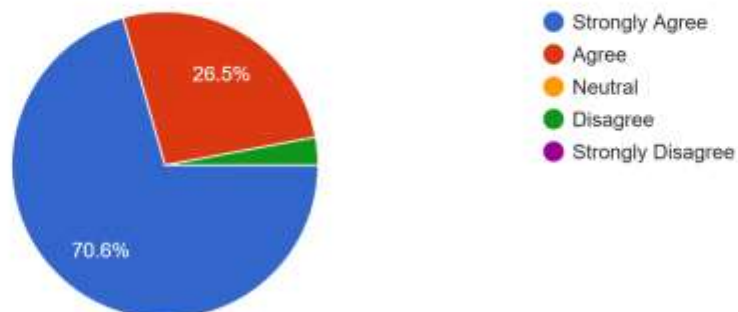
The course helped you to learn Numerical Differentiation and Integration.

34 responses



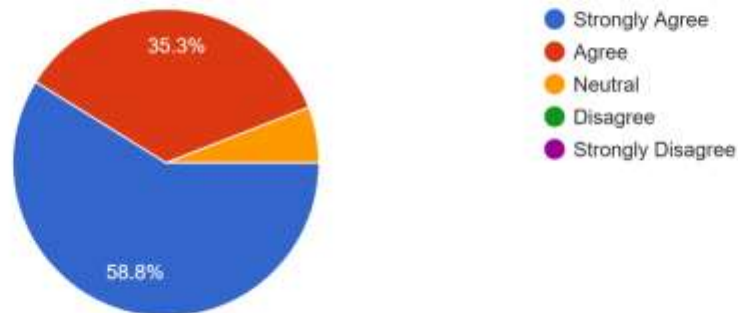
The course helped you to learn about the First and higher order approximation for the first derivative, Approximation for the second derivative.

34 responses



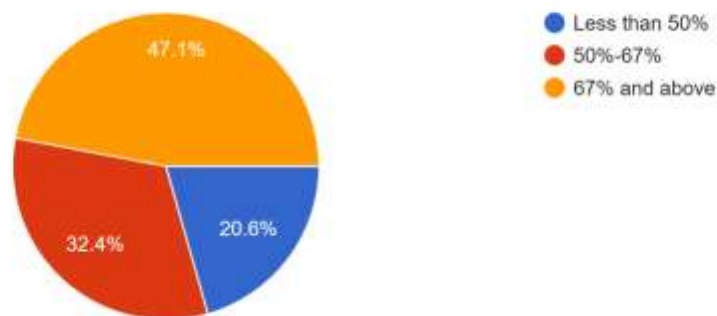
The course helped you to understand the Euler's method to solve ODE's, Modified Euler method, Runge-Kutta Method (fourth-order).

34 responses



How much was your attendance in this course?

34 responses



### Observations:

From the given responses, it is observed that more than 85-95 % of students who opted for this course strongly agreed and agreed that they got an understanding of the numerical methods to find the zeroes of nonlinear functions of a single variable and solution of a system of linear equations, up to a certain given level of precision. They got to know about methods to solve system of linear equations, such as Gauss-Jacobi, Gauss-Seidel and SOR methods. They were able to understand about Interpolation techniques to compute the values for a tabulated function at points not in the table. It is also observed that students had an interest in the paper as more than 47 % of students had more than 67% of attendance.

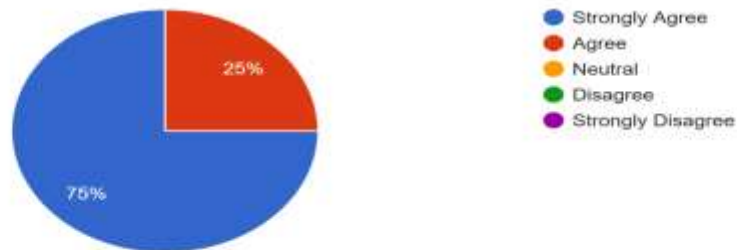
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE-2(ii): Mathematical Modeling

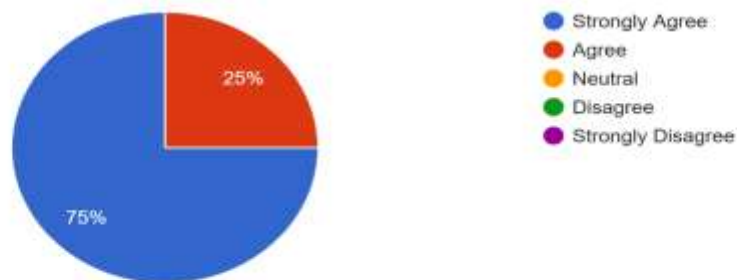
The course helped you to learn about the Mathematical Epidemiological and Dieting Models.

8 responses



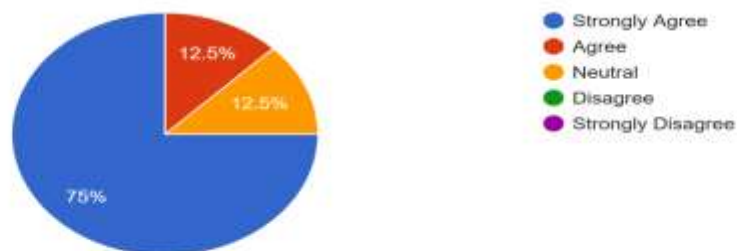
The course helped you to learn about the Modeling with Nonlinear Systems and Phenomena.

8 responses



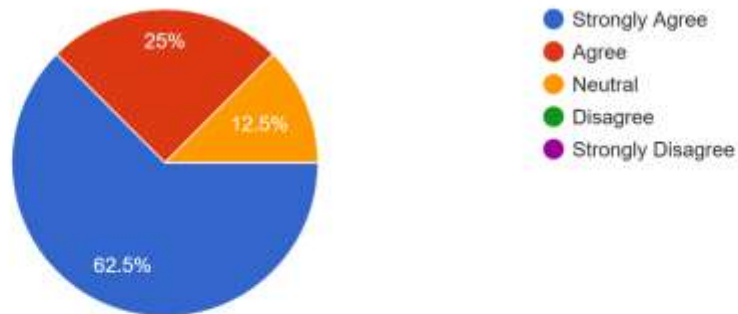
The course helped you to learn about the Critical points, Oscillating populations, Survival of single species, Peaceful coexistence of two species, Interaction of logistic populations.

8 responses



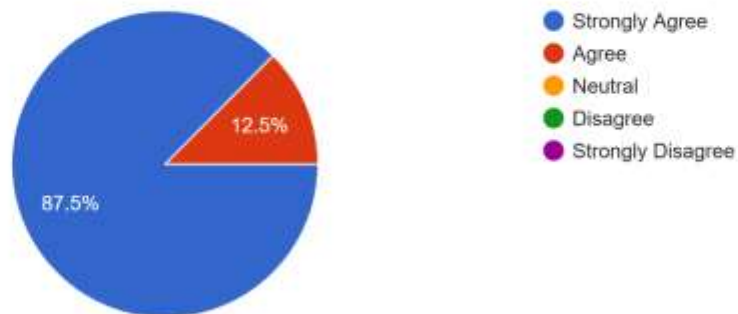
The course helped you to learn about Simulation and Optimization Modeling.

8 responses



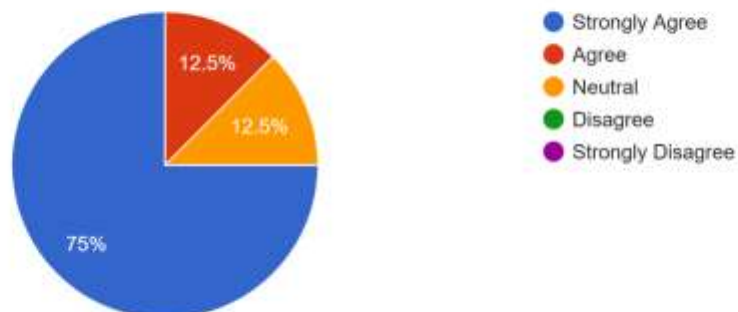
The course helped you to learn about the Linear programming model: Geometric and algebraic solutions.

8 responses



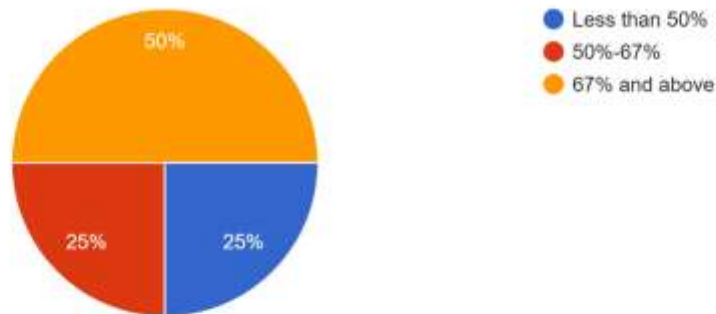
The course taught you to about the Simplex method and its tableau format, Sensitivity analysis.

8 responses



How much was your attendance in this course?

8 responses



### Observations:

From the given responses, it is observed that more than 85-95% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts about the Mathematical Epidemiological and Dieting Models, about the Modeling with Nonlinear Systems and Phenomena, about the Critical points, Oscillating populations, Survival of single species, Peaceful coexistence of two species, Interaction of logistic populations, about Simulation and Optimization Modeling and about the Linear programming model: Geometric and algebraic solutions. It is also observed that students had an interest in the paper as more than 50% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## B.A.(Prog.-Minor) II Year (Sem.- 4)

### DSC-Minor(A-4): Abstract Algebra

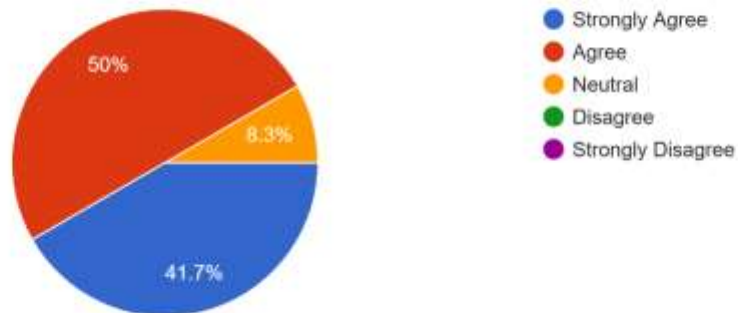
The course taught you the basic ideas of Introduction to Groups.

12 responses



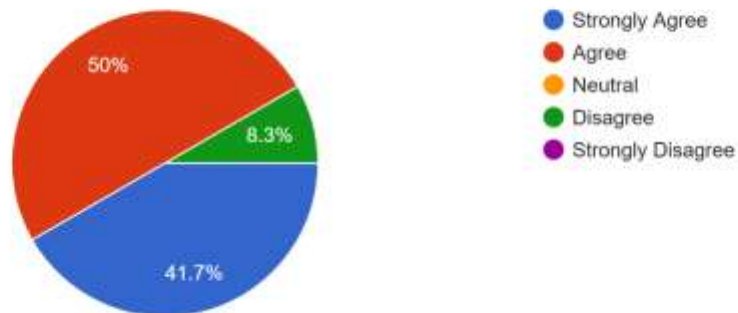
The course helped you to learn the significance of Cyclic Groups, Permutation Groups and Lagrange's Theorem.

12 responses



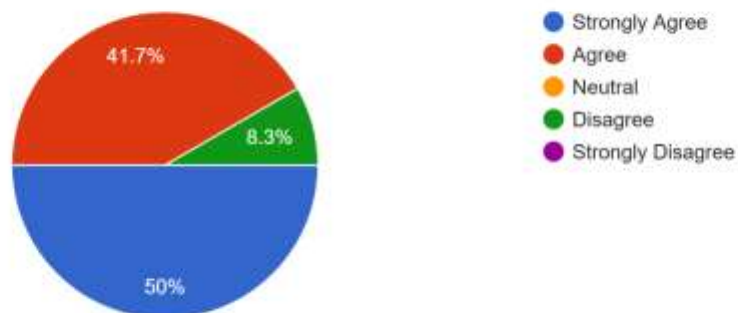
The course helped you to learn about Cyclic decomposition of permutations and its properties.

12 responses



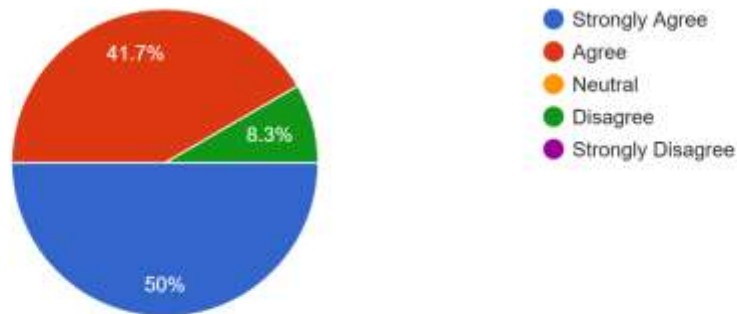
The course helped you to understand Rings, Integral Domains and Fields.

12 responses



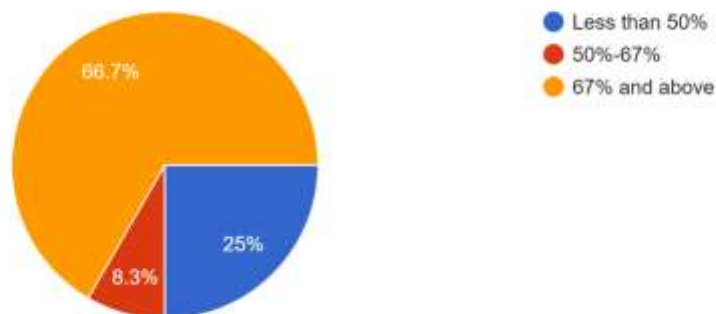
The course helped you to learn about Characteristic of a ring; Ring homomorphisms and properties.

12 responses



How much was your attendance in this course?

12 responses



### Observations:

From the given responses, it is observed that more than 80-90% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of and examples of group actions, Permutation representations, Cayley's theorem, Conjugacy classes, Class equation, Conjugacy in  $S_n$ , Simplicity of  $A_5$ . They were able to understand the  $p$ -groups, Sylow  $p$ -subgroups, Sylow's theorem, Applications of Sylow's theorem, the Finite simple groups, Non-simplicity tests, the concepts of Solvable groups and their properties, Commutator subgroups. It is also observed that students had an interest in the paper as more than 66.7% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures

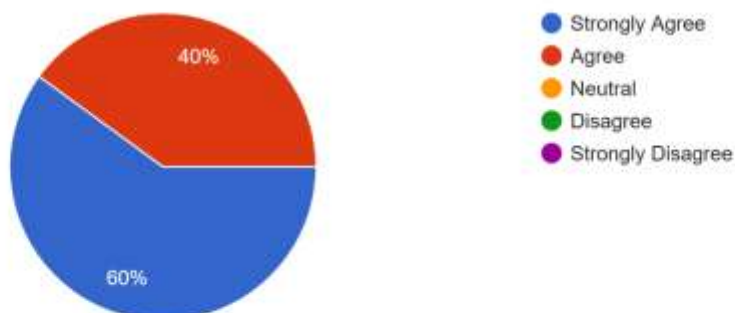
will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## GENERIC ELECTIVE (GE) Sem.- 4

### GE- 4(i): Elements of Real Analysis

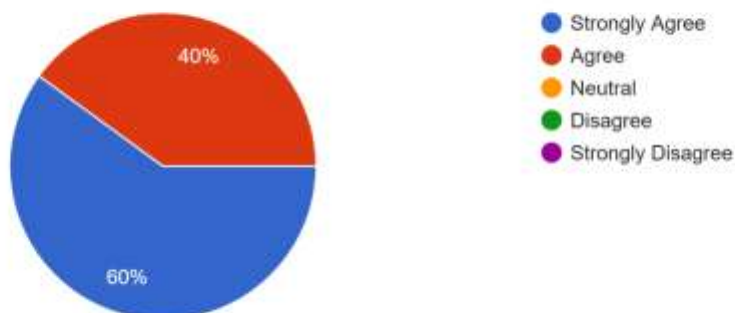
The course taught you the basic ideas of Basic Properties of the Set of Real Numbers.

5 responses



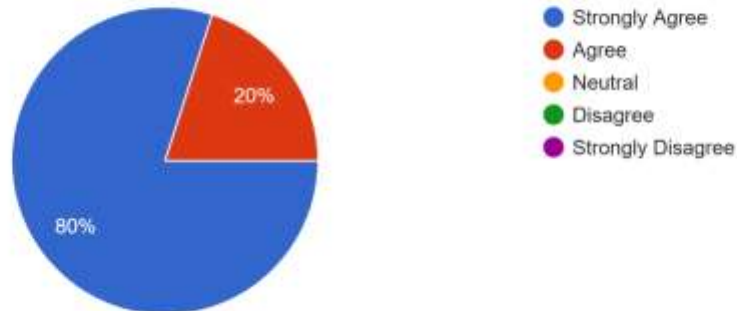
The course helped you to learn the significance of Real Sequences.

5 responses



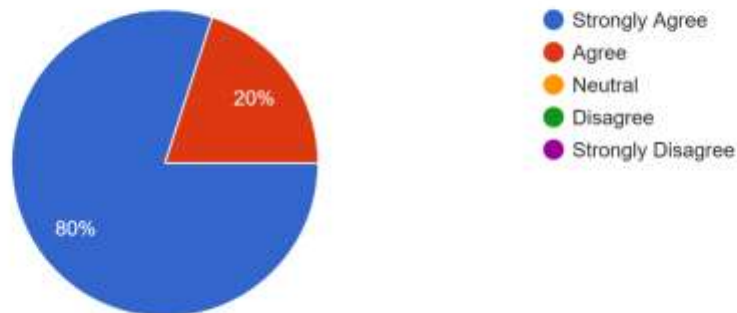
The course helped you to learn about Monotone convergence theorem and applications, Cauchy sequences, Cauchy criterion for convergence and applications.

5 responses



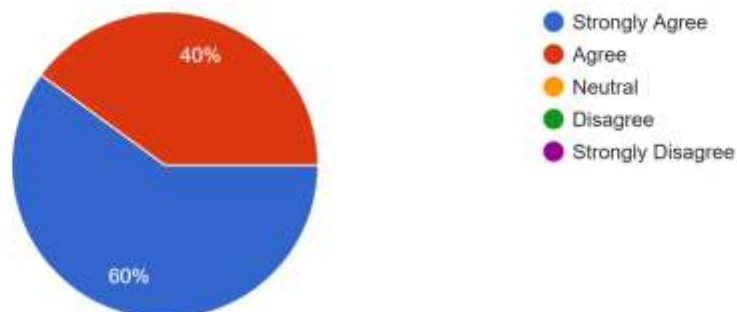
The course helped you to understand Infinite Series of Real Numbers.

5 responses



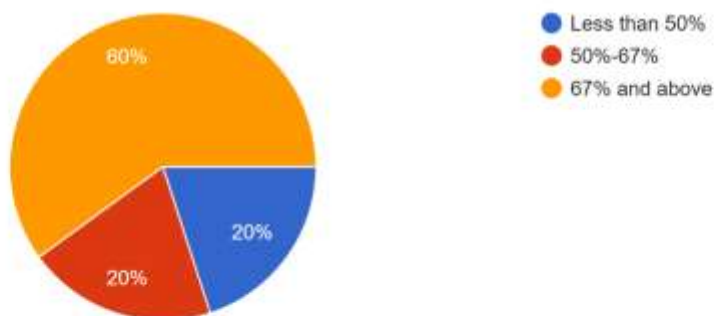
The course helped you to learn about Alternating series, Leibniz alternating series test, Absolute and conditional convergence.

5 responses



How much was your attendance in this course?

5 responses



### Observations:

From the given responses, it is observed that more than 85-95% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of the basic ideas of Basic Properties of the Set of Real Numbers, the significance of Real Sequences, about Monotone convergence theorem and applications, Cauchy sequences, Cauchy criterion for convergence and applications and to understand Infinite Series of Real Numbers. It is also observed that students had an interest in the paper as more than 60% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## SEC-Sem-4: Document Preparation and Presentation Software

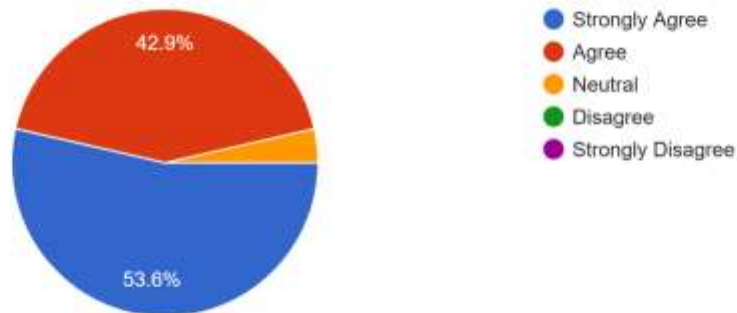
The course taught you the basic ideas of LaTeX/ LibreOffice document.

28 responses



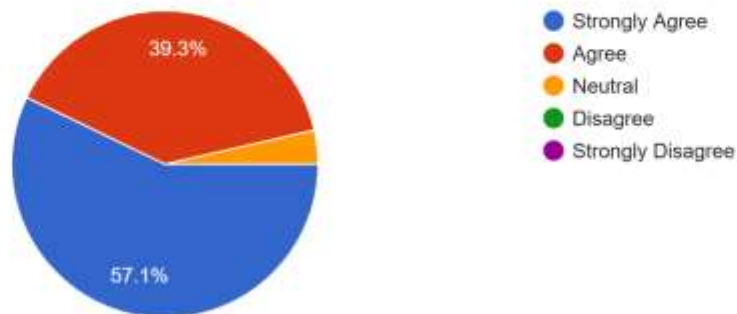
The course helped you to learn about the Loading and using packages, setting margins, header and footer, and page orientation.

28 responses



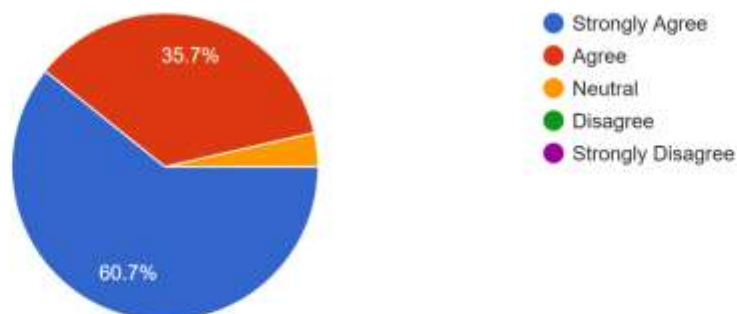
The course helped you to learn about Formatting text (styles, size, alignment), Adding colours to a block of text/ page, Adding ordered and unordered lists.

28 responses



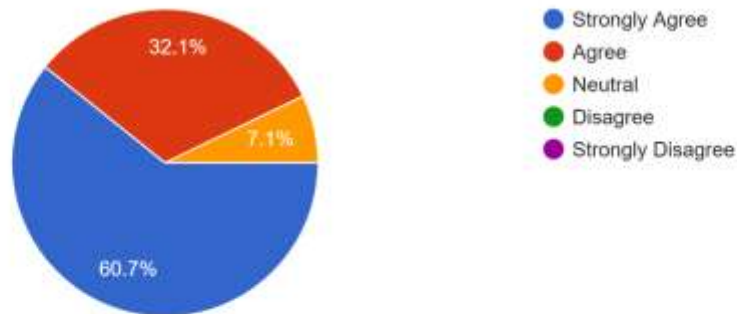
The course helped you to understand about Tables and Figures.

28 responses



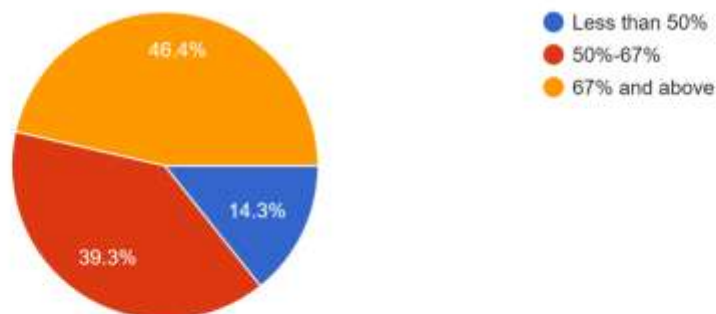
The course helped you to learn Algorithms and Equations.

28 responses



How much was your attendance in this course?

28 responses



### Observations:

From the given responses, it is observed that 85%-95% of students who opted for this course strongly agreed and agreed that they were able to understand and apply the concept of the basic ideas of LaTeX/ LibreOffice document, about the Loading and using packages, setting margins, header and footer, and page orientation, about Formatting text (styles, size, alignment), Adding colours to a block of text/ page, Adding ordered and unordered lists, o understand about Tables and Figures and to learn Algorithms and Equations. It is also observed that students had an interest in the paper as more than 46.4% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

# VAC-DIGITAL EMPOWERMENT

The course taught you the basic ideas of Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti

33 responses



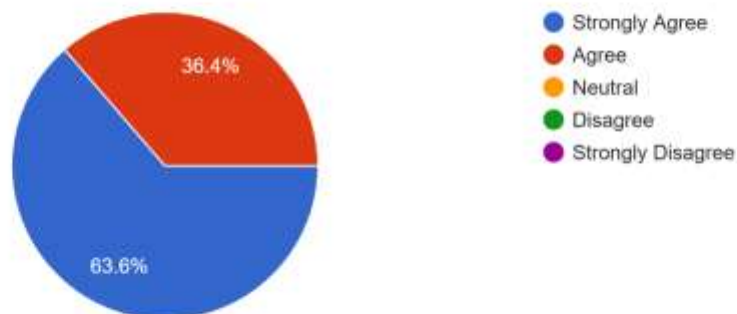
The course helped you to learn the significance of Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education.

33 responses



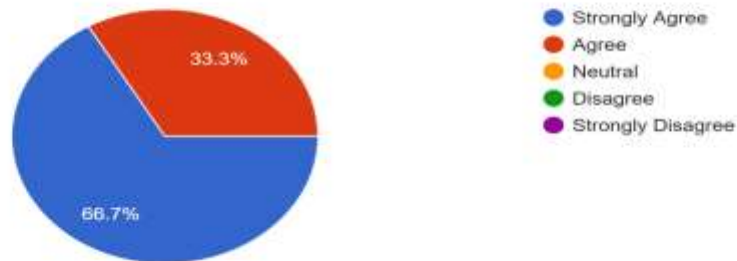
The course helped you to learn about Electronic Communication: electronic mail, biogs, social media.

33 responses



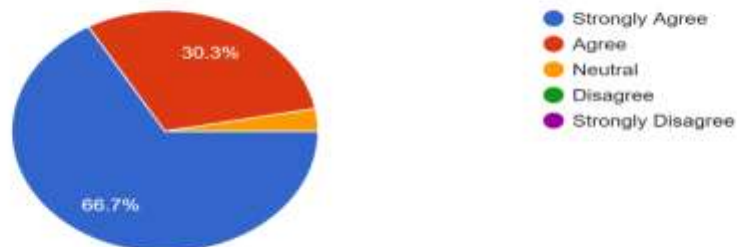
The course helped you to understand Online security and privacy , Threats in the digital world: Data breach and Cyber Attacks.

33 responses



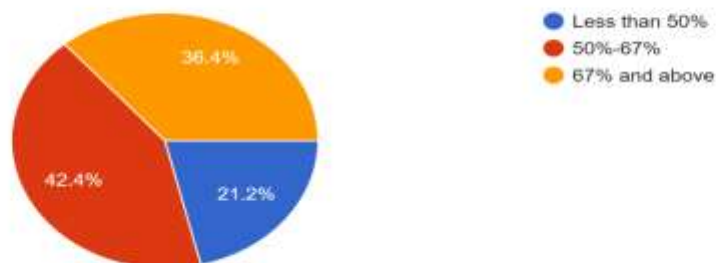
The course helped you to learn about Ethical Issues in Digital World.

33 responses



How much was your attendance in this course?

33 responses



### Observations:

From the given responses, it is observed that 85%-95% of students who opted for this course strongly agreed and agreed that they were able to understand and apply the concept of the basic ideas of Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti, the significance of Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education, about Electronic Communication: electronic mail, biogs, social media, to understand Online security and privacy , Threats in the digital world: Data breach and Cyber

Attacks and about Ethical Issues in Digital World. It is also observed that students had an interest in the paper as more than 36.4% of students had more than 67% of attendance.

### Action Taken:

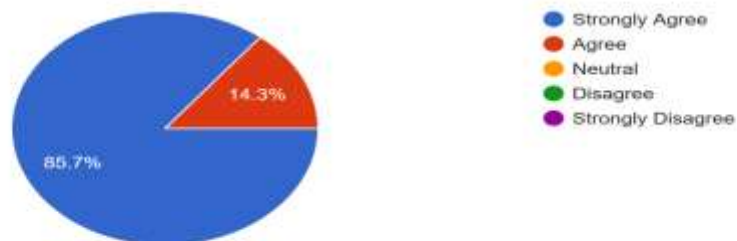
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## VAC-Vedic Mathematics-II

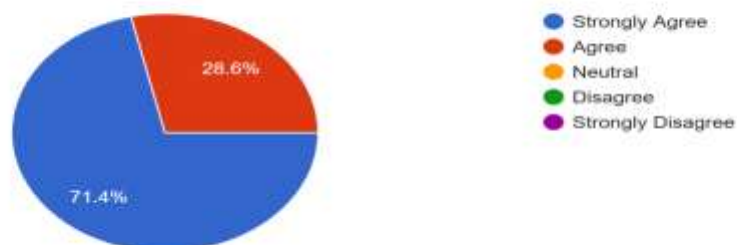
Percentage of Classes Attended  
7 responses



You are able to find the mathematical solution of algebraic expressions.  
7 responses

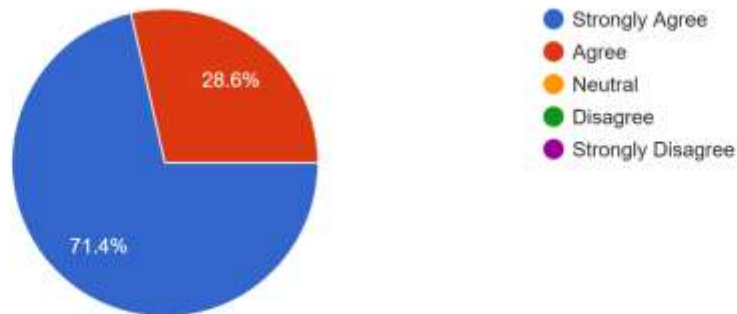


You are able to do basic maths faster and with ease.  
7 responses



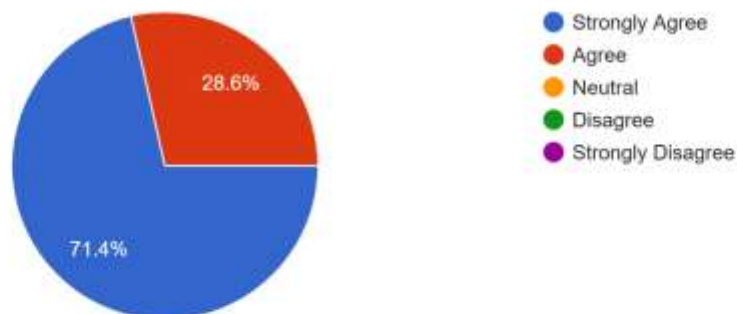
You are able to solve system of linear equations and matrices faster and with ease.

7 responses



You have developed logical and analytical thinking.

7 responses



### Observations:

From the given responses, it is observed that 85%-95% of students who opted for this course strongly agreed and agreed that they were able to understand and apply about the the mathematical solution of algebraic expressions, basic maths faster and with ease, to solve system of linear equations and matrices faster and with ease, and logical and analytical thinking. It is also observed that students had an interest in the paper as more than 42% of students had more than 67% of attendance.

### Action Taken:

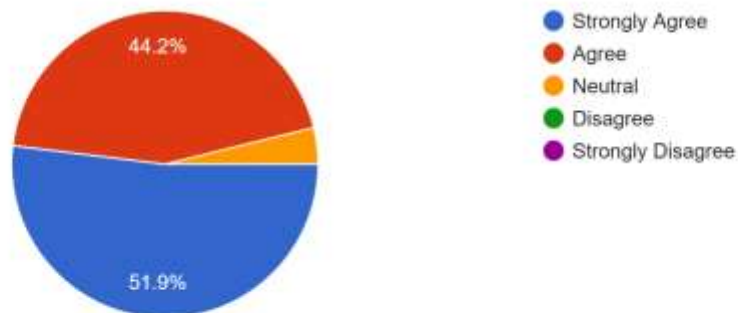
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

# Semester: 6

## DSC-18: Complex Analysis

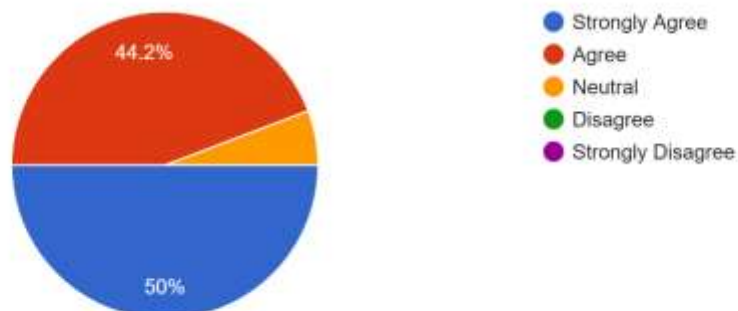
The course taught you the basic ideas of analysis for complex functions in complex variables with visualization through relevant practicals.

52 responses



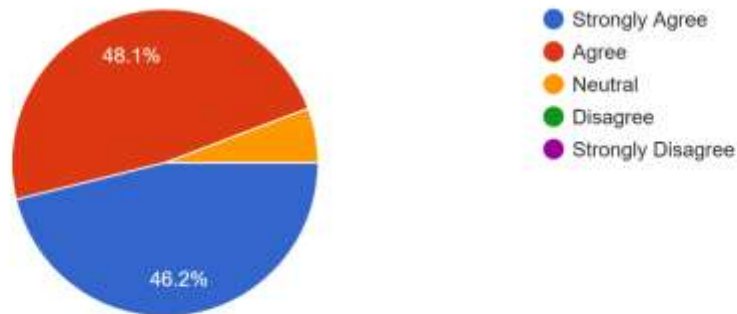
The course helped you to learn the significance of differentiability of complex functions leading to the understanding of Cauchy-Riemann equations.

52 responses



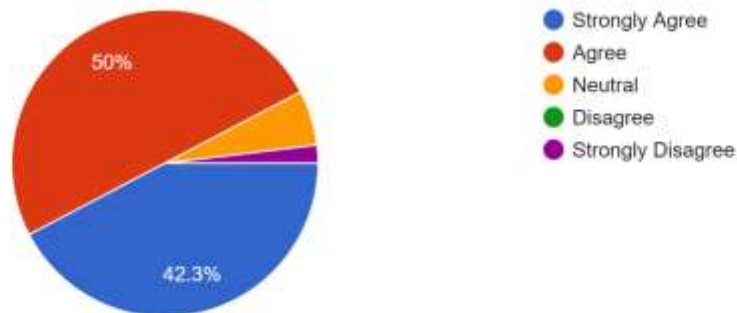
The course helped you to understand the elementary functions and evaluate the contour integrals.

52 responses



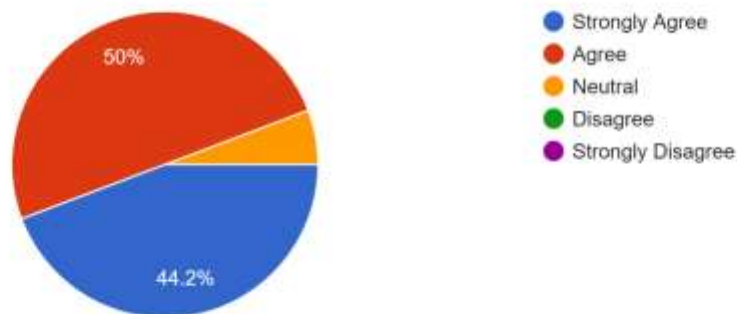
The course helped you to understand the role of Cauchy-Goursat theorem and the Cauchy integral formula.

52 responses



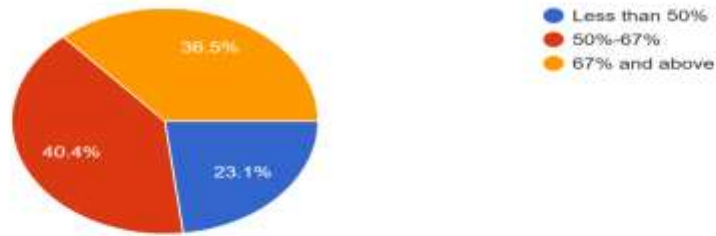
The course helped you to learn the expansion of simple functions as their Taylor and Laurent series, classify the nature of singularities, find residues ... apply Cauchy Residue theorem to evaluate integrals.

52 responses



How much was your attendance in this course?

52 responses



### Observations:

From the given responses, it is observed that around 90% - 95% of students strongly agreed and agreed that they got an understanding of the concept of Complex analysis from start to end. They were able to analyze how to use the concept of Complex analysis for solving the rare and simple integration and how to use the different types of theorems and formulas in Integrations. The majority of students understood the concept of two important theorems, namely Cauchy Goursat theorem, Cauchy Integral formula, Cauchy Residue Theorem etc.. It is also observed that students had an interest in the paper as 36.5 % of students had more than 67% of attendance.

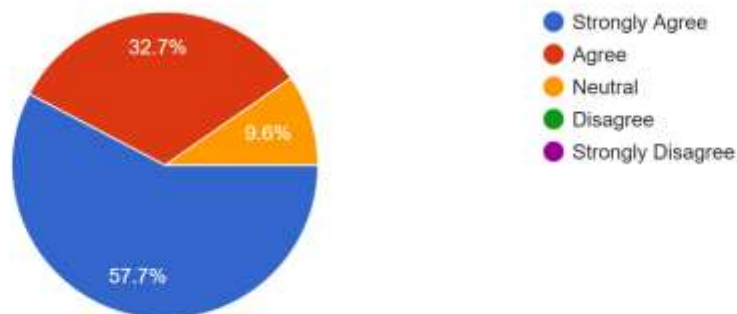
### Action Taken:

For moderate responses, topics will be discussed more with the students in extra classes. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

### DSC-17: Advanced Linear Algebra

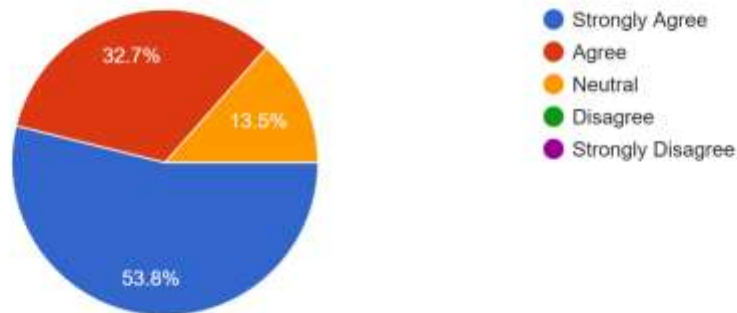
The course helped you to appreciate the significance of Eigenvalues, eigenvectors, eigenspaces and the characteristic polynomial of a linear operator.

52 responses



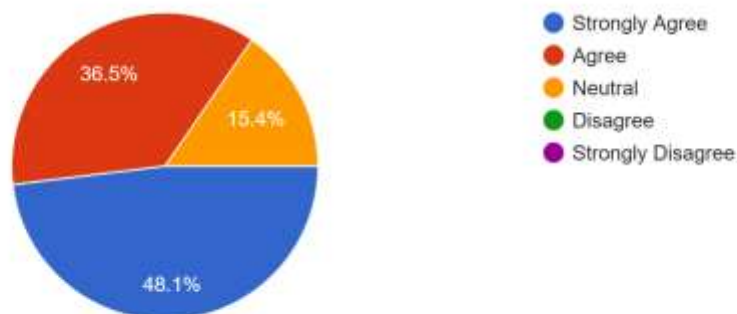
The course helped you to compute the Cayley-Hamilton theorem; The Jordan canonical form and the minimal polynomial of a linear operator.

52 responses



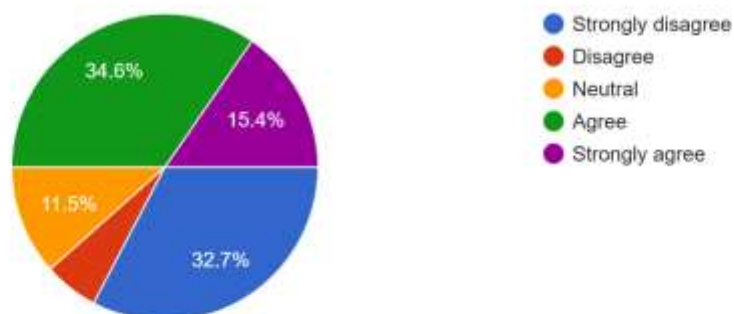
The course helped you to understand and compute Inner products and norms, Orthonormal basis, Gram-Schmidt orthogonalization process.

52 responses



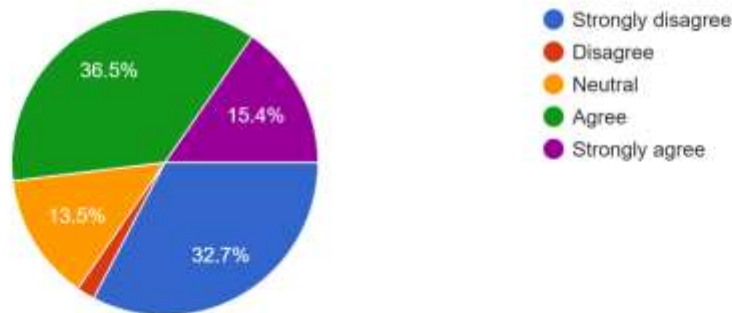
The course helped you to learn least squares approximation and minimal solutions to systems of linear equations.

52 responses



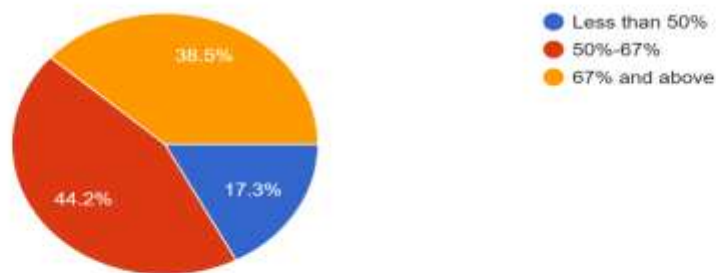
The course helped you to find the Normal, self-adjoint, unitary and orthogonal operators and their properties; Orthogonal, projections and the spectral theorem

52 responses



How much was your attendance in this course?

52 responses



### Observations:

From the given responses, it is observed that around 90% - 95% of students strongly agreed and agreed that they got an understanding about the significance of Eigenvalues, eigenvectors, eigenspaces and the characteristic polynomial of a linear operator, to compute the Cayley-Hamilton theorem; The Jordan canonical form and the minimal polynomial of a linear operator, to understand and compute Inner products and norms, Orthonormal basis, Gram-Schmidt orthogonalization process and to find the Normal, self-adjoint, unitary and orthogonal operators and their properties; Orthogonal, projections and the spectral theorem. It is also observed that students had an interest in the paper as 38.5% of students had more than 67% of attendance.

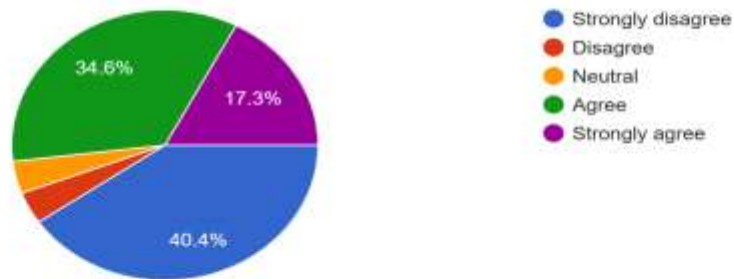
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

**DSC-16: Advanced Group Theory**

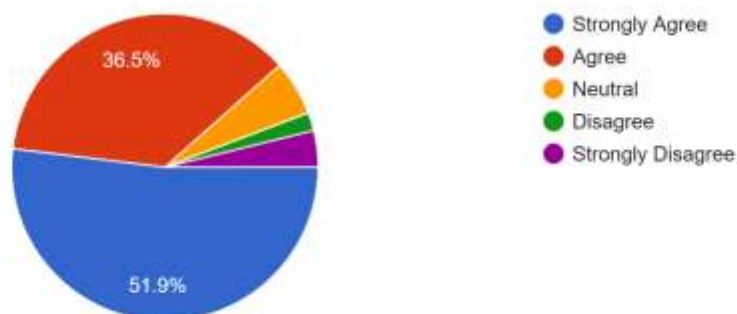
The course helped you to know the basic concepts of and examples of group actions, Permutation representations.

52 responses



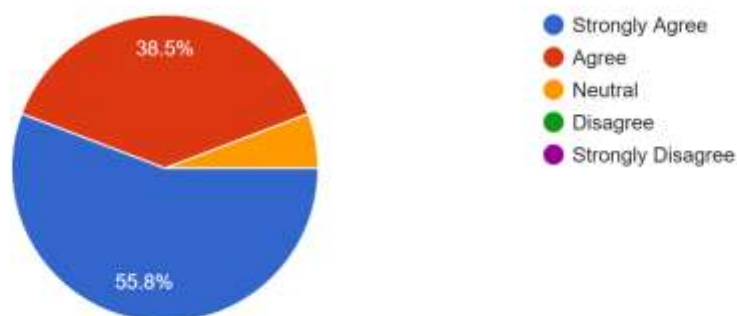
The course helped you to know about Cayley's theorem, Conjugacy classes, Class equation, Conjugacy in  $S_n$ , Simplicity of  $A_5$ .

52 responses



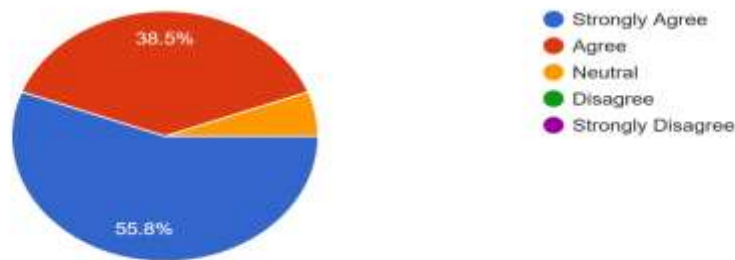
The course helped you to learn about the  $p$ -groups, Sylow  $p$ -subgroups, Sylow's theorem, Applications of Sylow's theorem.

52 responses



The course helped you to learn about the Finite simple groups, Non-simplicity tests.

52 responses



The course helped you to understand the concepts of Solvable groups and their properties, Commutator subgroups.

52 responses



How much was your attendance in this course?

52 responses



### Observations:

From the given responses, it is observed that more than 85% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of and examples of group actions, Permutation representations, Cayley's theorem, Conjugacy classes, Class equation, Conjugacy in  $S_n$ , Simplicity of  $A_5$ . They were able to understand the  $p$ -groups, Sylow  $p$ -subgroups, Sylow's theorem, Applications of Sylow's theorem, the Finite simple groups, Non-simplicity tests, the concepts of Solvable groups and their properties, Commutator subgroups. It is

also observed that students had an interest in the paper as more than 40.4% of students had more than 67% of attendance.

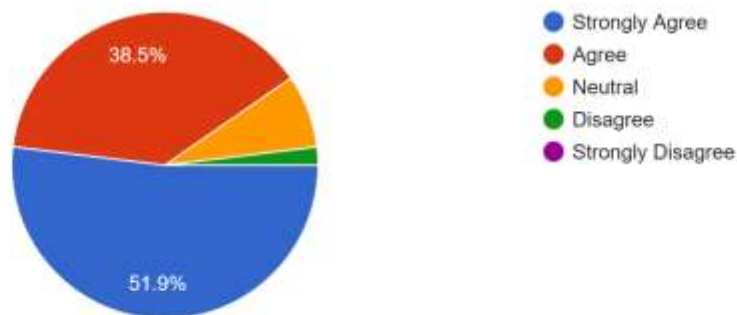
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE-4 (iii): Research Methodology

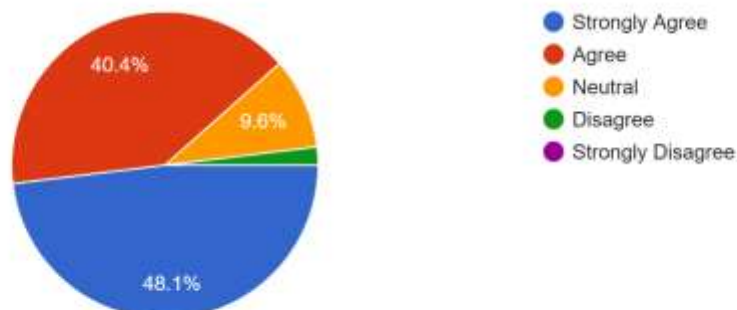
The course helped you to learn about the Goals of mathematical writing, general principles of mathematical writing, avoiding errors, writing mathematical solutions.

52 responses



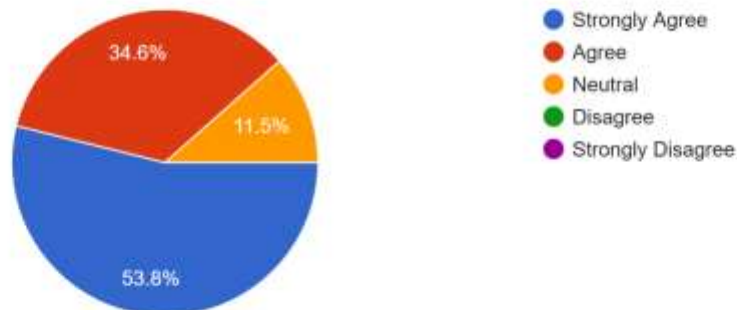
The course helped you to learn about the finding a research topic, Literature survey, Research Criteria, Format of a research article.

52 responses



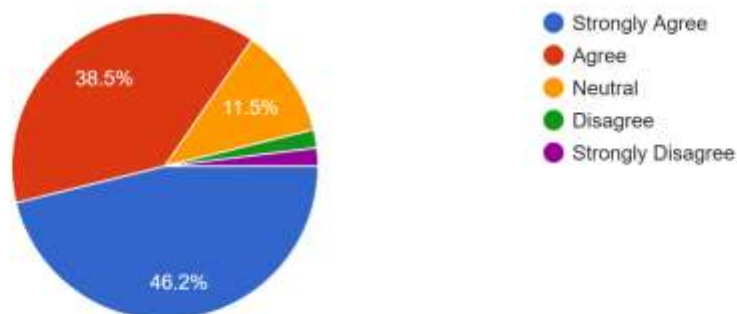
The course helped you to learn about the Preparing a mathematical talk, Oral presentation, Use of technology which includes LaTeX, PSTricks and Beamer; Poster presentation.

52 responses



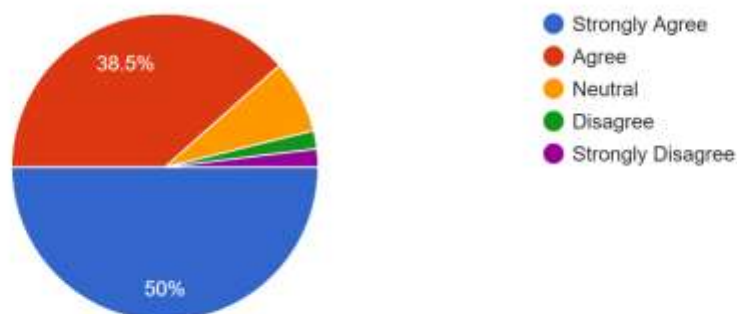
The course helped you to learn about Web resources- MAA, AMS, SIAM, arXiv, ResearchGate; Journal metrics

52 responses



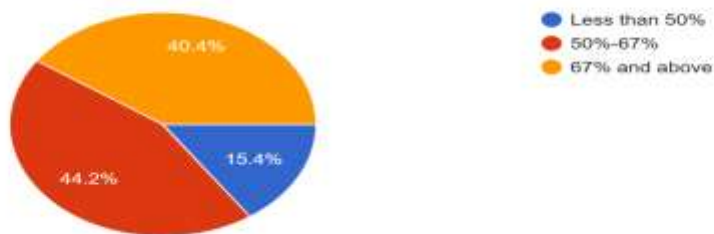
The course helped you to learn about the Impact factor of journal as per JCR, MCQ, SNIP, SJR, Google Scholar metric; Challenges of journal metrics

52 responses



How much was your attendance in this course?

52 responses



### Observations:

From the given responses, it is observed that more than 85% of students who opted for this course strongly agreed and agreed that they were able to understand and apply the Goals of mathematical writing, general principles of mathematical writing, avoiding errors, writing mathematical solutions, the finding a research topic, Literature survey, Research Criteria, Format of a research article, the Preparing a mathematical talk, Oral presentation, Use of technology which includes LaTeX, PSTricks and Beamer; Poster presentation, Web resources- MAA, AMS, SIAM, arXiv, ResearchGate; Journal metrics. They were able to about the Impact factor of journal as per JCR, MCQ, SNIP, SJR, Google Scholar metric; Challenges of journal metrics. It is also observed that students had an interest in the paper as more than 40.4% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## B.A.(Prog.-Major) III Year (Semester 6)

### DSC-6: Elementary Mathematical Analysis

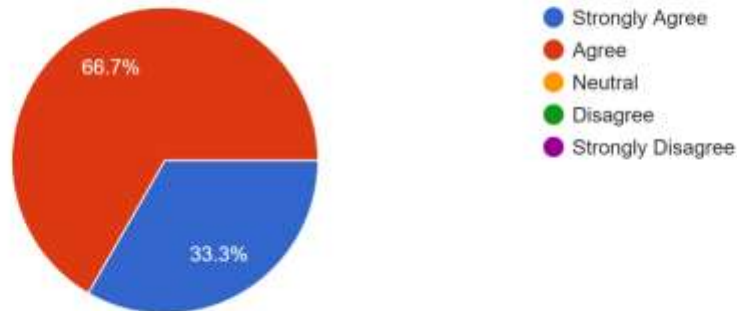
The course taught you the basic ideas of Sequential criterion for limits and continuity of functions, Continuity on intervals, Intermediate value theorem and applications; Uniform continuity.

3 responses



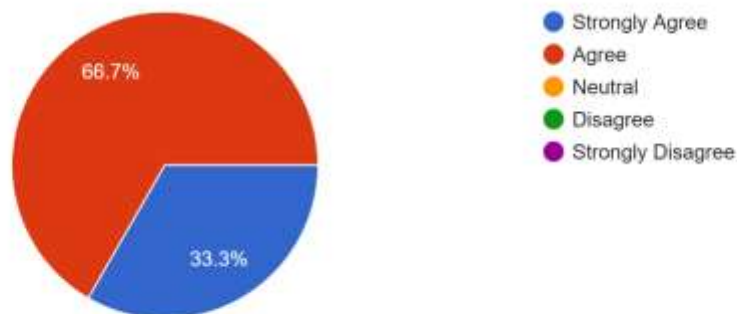
The course helped you to learn the significance of the Riemann integration, criterion for integrability and examples; Integrability of continuous and monotone functions.

3 responses



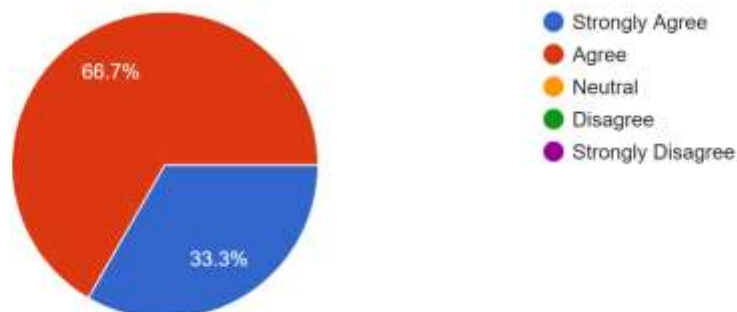
The course helped you to reframe your thinking about Algebraic properties of the Riemann integral, Fundamental theorem of calculus (first form).

3 responses



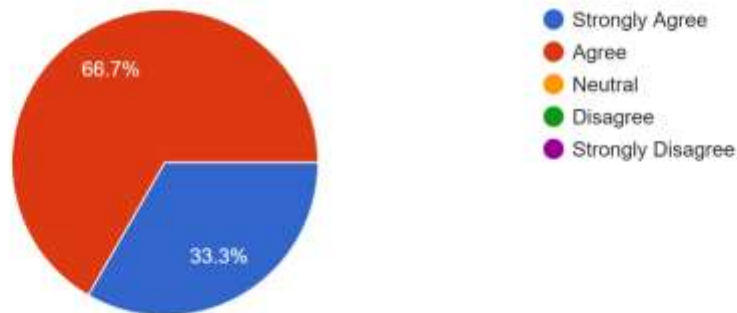
The course helped you to understand Sequences and series of functions: Pointwise and uniform convergence, Uniform Cauchy criterion, Weierstrass M-test.

3 responses



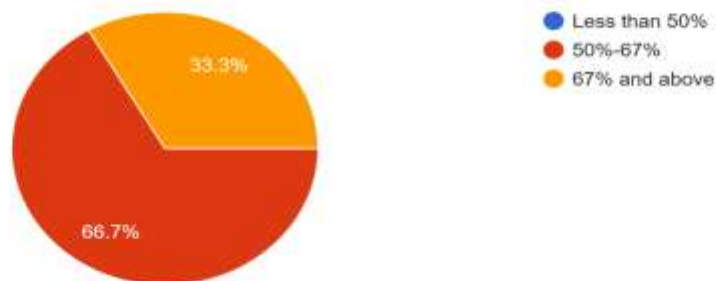
The course helped you to learn Power series, Radius and interval of convergence, Applications of Abel's theorem for power series.

3 responses



How much was your attendance in this course?

3 responses



### Observations:

From the given responses, it is observed that more than 90% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of the basic ideas of Sequential criterion for limits and continuity of functions, Continuity on intervals, Intermediate value theorem and applications; Uniform continuity, the significance of the Riemann integration, criterion for integrability and examples; Integrability of continuous and monotone functions, about Algebraic properties of the Riemann integral, Fundamental theorem of calculus (first form) and to understand Sequences and series of functions: Pointwise and uniform convergence, Uniform Cauchy criterion, Weierstrass M-test. It is also observed that students had an interest in the paper as more than 33.3 % of students had more than 67% of attendance.

### Action Taken:

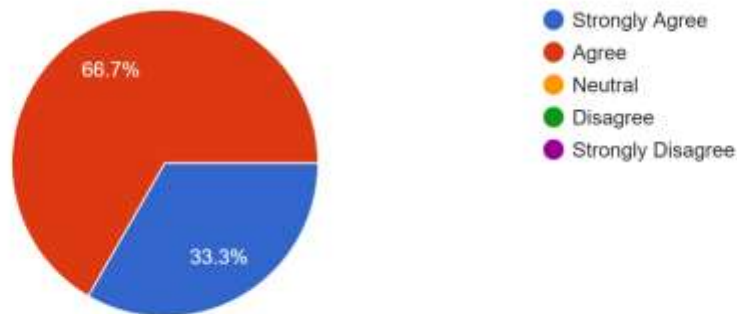
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures

will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE 2(iii): Research Methodology

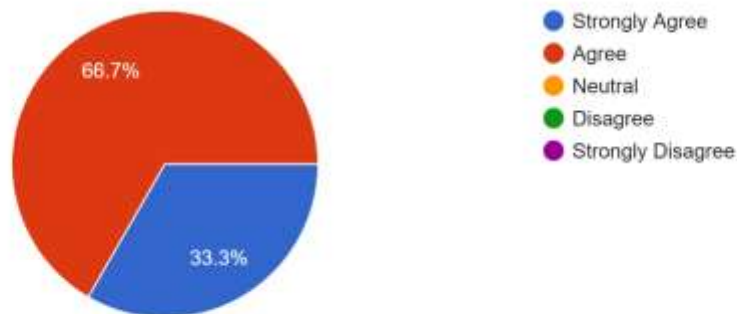
The course helped you to appreciate the significance of How to learn mathematics, How to write mathematics: Goals of mathematical writing, genera...rrors, writing mathematical solutions and proofs.

3 responses



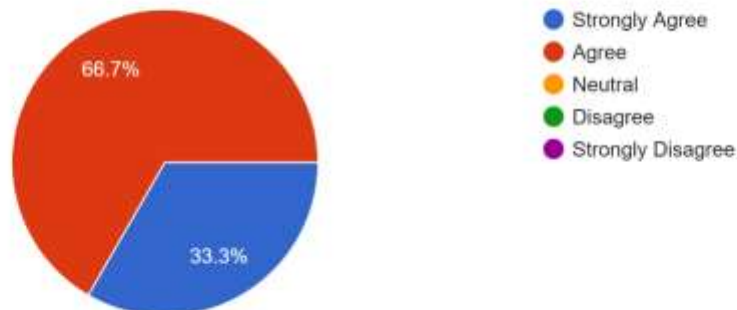
The course helped you to analyze What is mathematical research, finding a research topic, Literature survey, Research Criteria.

3 responses



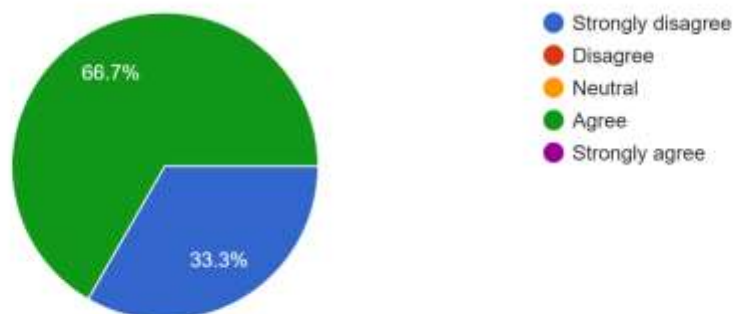
The course helped you to understand How to present mathematics: Preparing a mathematical talk, Oral presentation, Use of technology which includes LaTeX, PSTricks and Beamer; Poster presentation.

3 responses



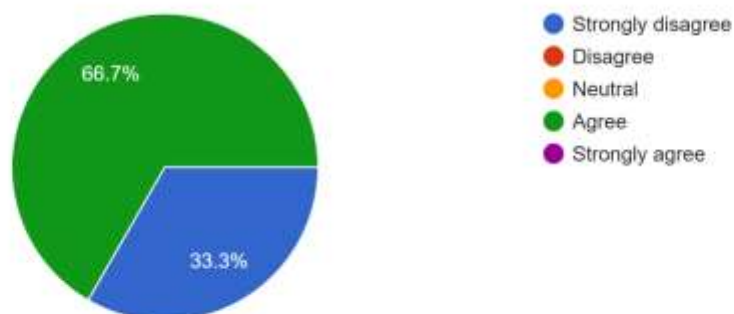
The course helped you to learn Web resources- MAA, AMS, SIAM, arXiv, ResearchGate; Journal metrics: Impact factor of journal as per JCR, MCQ, SNIP, SJR, Google Scholar metric.

3 responses



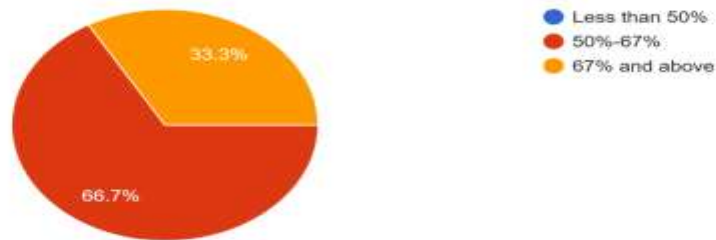
The course helped you to understand about Challenges of journal metrics; Reviews/Databases: MathSciNet, zbMath, Web of Science, Scopus; Ethic...using software like URKUND/Ouriginal by Turnitin.

3 responses



How much was your attendance in this course?

3 responses



### Observations:

From the given responses, it is observed that more than 90% of students who opted for this course strongly agreed and agreed that they were able to understand the significance of How to learn mathematics, How to write mathematics: Goals of mathematical writing, general principles of mathematical writing, avoiding errors, writing mathematical solutions and proofs, to analyze What is mathematical research, finding a research topic, Literature survey, Research Criteria and to understand How to present mathematics: Preparing a mathematical talk, Oral presentation, Use of technology which includes LaTeX, PSTricks and Beamer; Poster presentation. It is also observed that students had an interest in the paper as more than 33.3 % of students had more than 67% of attendance.

### Action Taken:

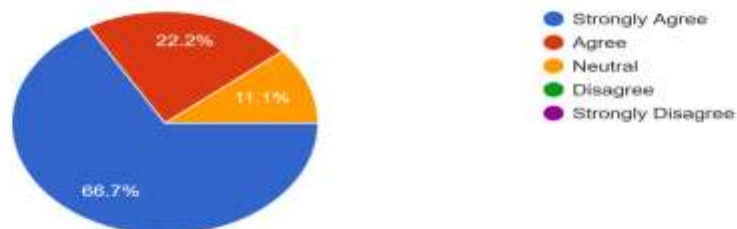
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## B.A.(Prog.-Minor) III Year (Semester 6)

### DSC-6: Probability and Statistics

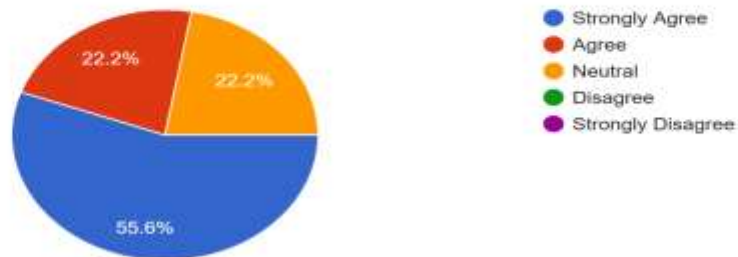
The course taught you the basic ideas of Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dotplots, Histograms, Qualit...ures of location, Measures of variability, Boxplots.

9 responses



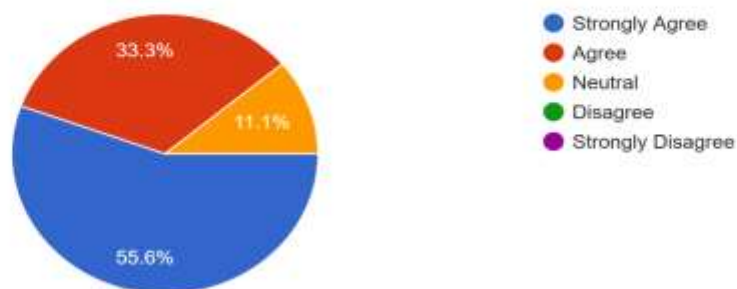
The course helped you to learn Sample spaces and events, Probability axioms and properties, Conditional probability, Bayes' theorem, and independent events.

9 responses



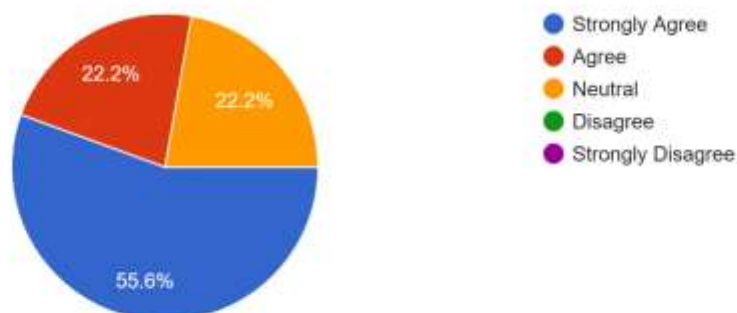
The course helped you to learn about Discrete random variables & probability distributions, Expected values; Probability distributions: Binomial, Poisson, and Poisson distribution as a limit.

9 responses

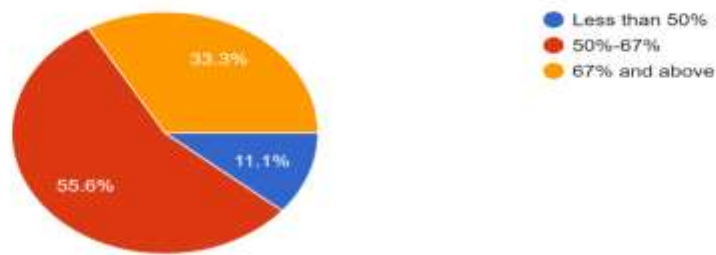


The course helped you to understand Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values.

9 responses



How much was your attendance in this course?  
9 responses



### Observations:

From the given responses, it is observed that more than 85 % of students strongly agreed and agreed that they have understood the basic concept of the basic ideas of Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dotplots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots, Sample spaces and events, Probability axioms and properties, Conditional probability, Bayes' theorem, and independent events and about Discrete random variables & probability distributions, Expected values; Probability distributions: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit. It is also observed that students had an interest in the paper as about 33.3% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## GENERIC ELECTIVES (GE)

### GE6: Abstract Algebra

The course taught you the basic ideas of Definition and examples of groups, Elementary properties of groups, Order of a group and order of an element of a group; Subgroups and its examples.  
2 responses



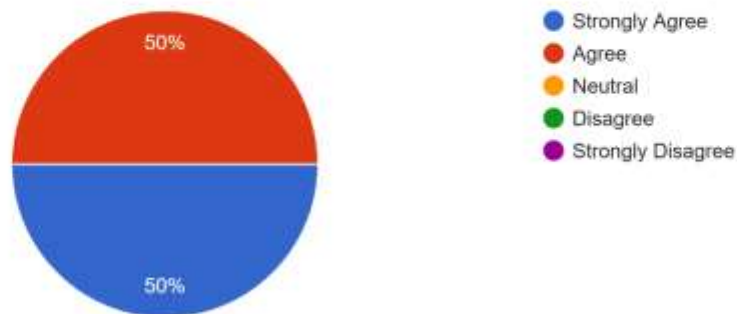
The course helped you to learn the Cyclic groups and its properties, Generators of a cyclic group; Group of symmetries; Permutation groups, Cyclic decomposition of permutations and its properties.

2 responses



The course helped you to learn about Cosets and Lagrange's theorem; Definition and examples of normal subgroups, Quotient groups; Group homomorphisms and properties.

2 responses



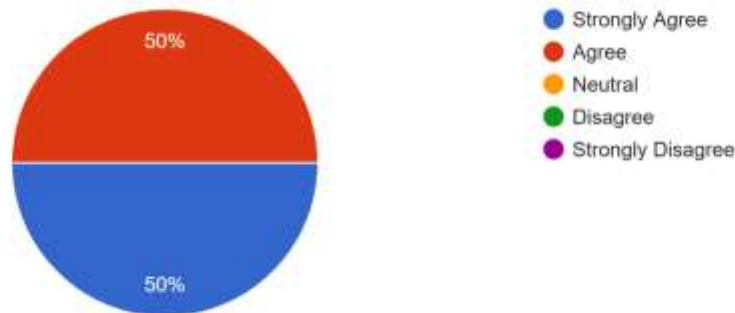
The course helped you to understand Definition, examples and properties of rings, subrings, integral domains.

2 responses



The course helped you to learn fields, ideals and factor rings; Characteristic of a ring; Ring homomorphisms and properties.

2 responses



How much was your attendance in this course?

2 responses



### Observations:

From the given responses, it is observed that more than 85% students agreed that they learned to Elementary properties of groups, Order of a group and order of an element of a group; Subgroups, Cyclic groups and its properties, Generators of a cyclic group; Group of symmetries; Permutation groups, alternating group; Cosets and Lagrange's theorem, normal subgroups, Quotient groups; Group homomorphisms, properties of rings, subrings, integral domains, fields, ideals and factor rings. It is also observed that students had an interest in the paper as 100% of students had more than 67% of attendance.

### Action Taken:

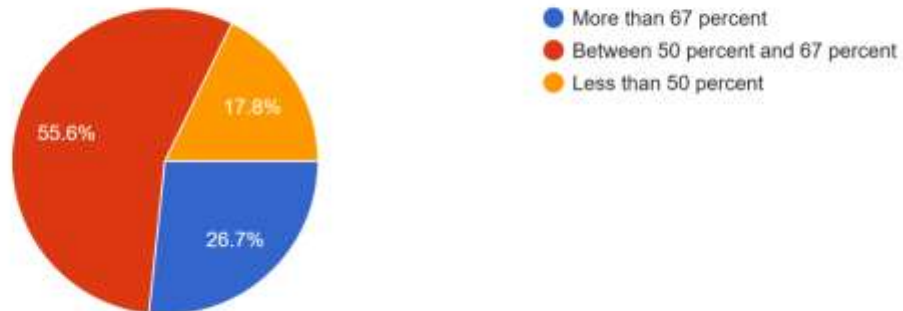
For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance. Assessments would also be done at regular intervals.

## SEC: I Cyber Sphere and Security: Global Concerns

## SEC: Cyber Sphere and Security: Global Concerns

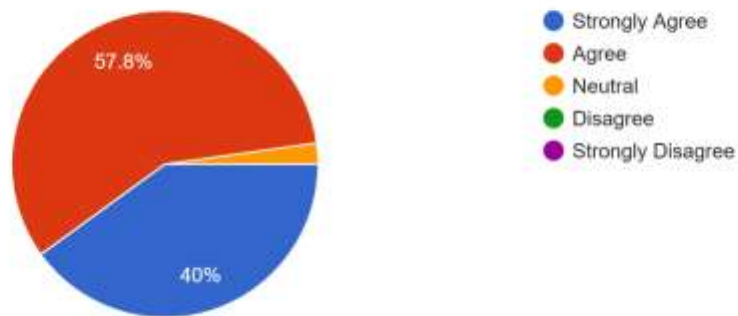
### Percentage of Classes Attended

45 responses



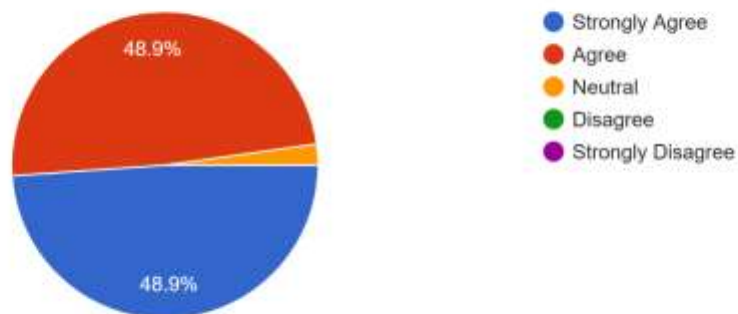
### You learned about Cyber Sphere and Security.

45 responses



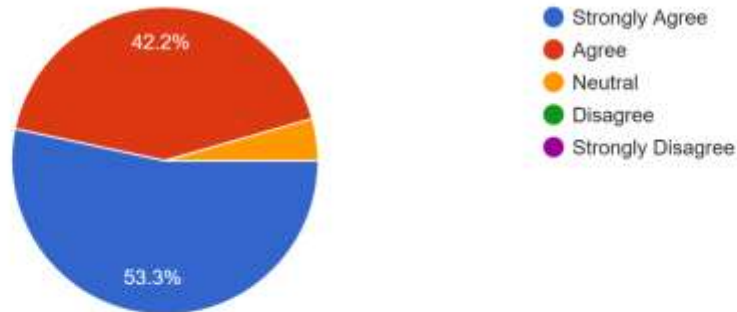
### You gained knowledge about Cyber Crime.

45 responses



You understood the concept of Cyber Polices and Cyber Law.

45 responses



You understood the concept of security tools and usage.

45 responses



### Observations:

From the given responses, it is observed that more than 85% of students who opted for this course strongly agreed and agreed that they were able to understand about Cyber Sphere and Security, knowledge about Cyber Crime, the concept of Cyber Polices and Cyber Law, the concept of security tools and usage. It is also observed that students had an interest in the paper as more than 55.6 % of students had more than 67% of attendance.

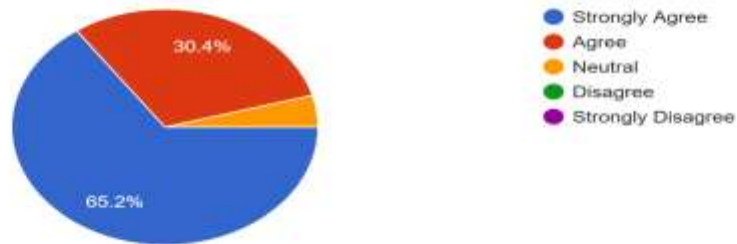
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## SEC: Document Preparation and Presentation Software

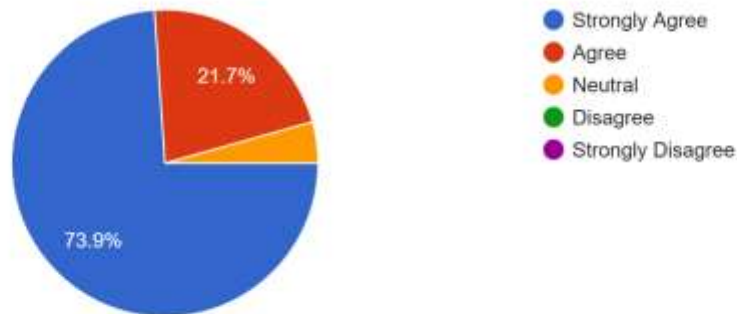
The course taught you the basic ideas of LaTeX/ LibreOffice document having several paragraphs, including comments in LaTeX.

23 responses



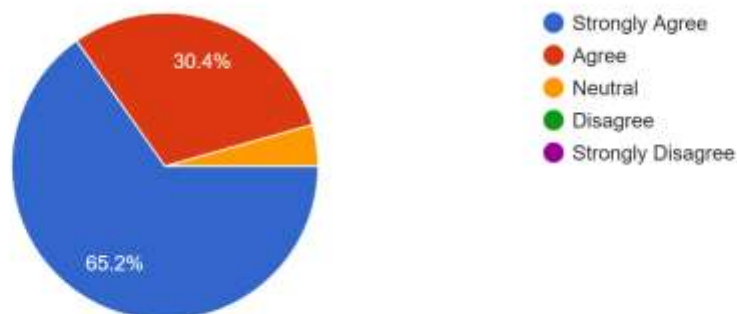
The course helped you to learn about the Organize content into sections, including preface/abstract. Using the article and book class of LaTeX. Handling errors.

23 responses



The course helped you to learn about Loading and using packages, setting margins, header and footer, and page orientation.

23 responses



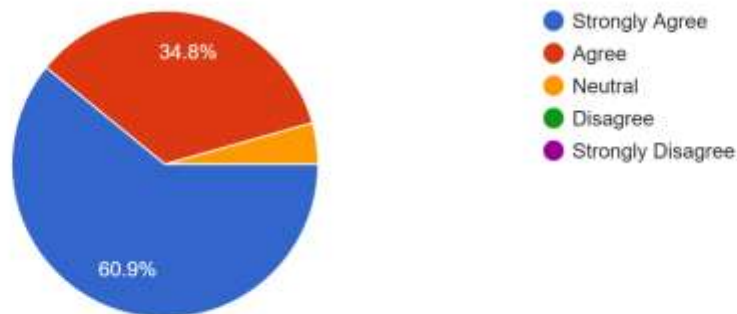
The course helped you to understand Inserting mathematical expressions – subscripts, superscripts, fractions, binomials, aligning equat...and mathematical symbols, and mathematical fonts.

23 responses



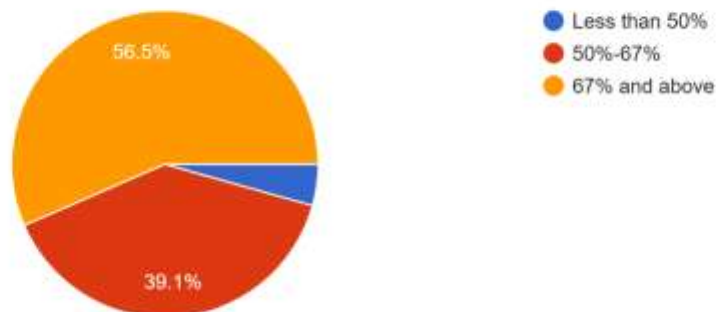
The course helped you to learn Create basic tables, Adding different types of borders to a table, Merging rows and columns and Splitting tables across multiple pages.

23 responses



How much was your attendance in this course?

23 responses



**Observations:**

From the given responses, it is observed that more than 85% students agreed that they learned the basic ideas of LaTeX/ LibreOffice document having several paragraphs, including comments in LaTeX, about the Organize content into sections, including preface/abstract. Using the article and book class of LaTeX. Handling errors, about Loading and using packages, setting margins, header and footer, and page orientation and to understand Inserting mathematical expressions – subscripts, superscripts, fractions, binomials, aligning equations, operators, Greek and mathematical symbols, and mathematical fonts. It is also observed that students had an interest in the paper as 56.5% of students had more than 67% of attendance.

**Action Taken:**

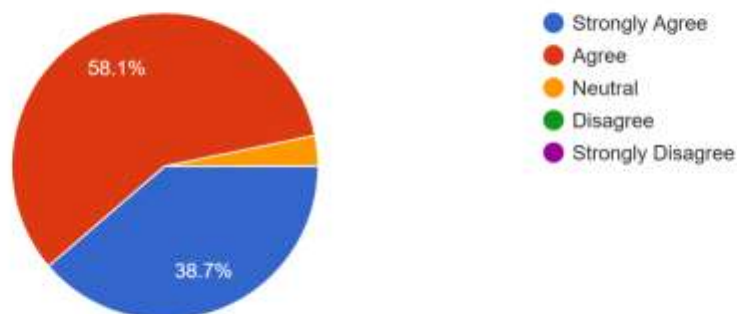
For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance. Assessments would also be done at regular intervals.

## Semester: 8

### DSC-20: Field Theory and Galois Extension

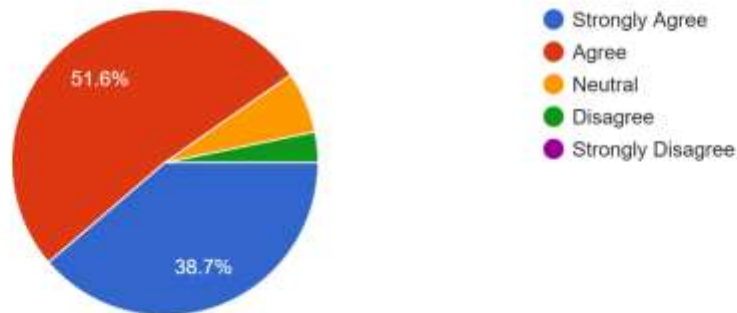
The course taught you the basic ideas of Field Extensions.

31 responses



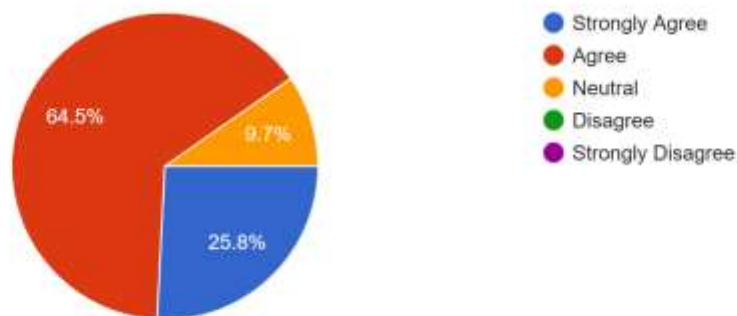
The course helped you to learn the significance of Galois Extensions and the Fundamental Theorem.

31 responses



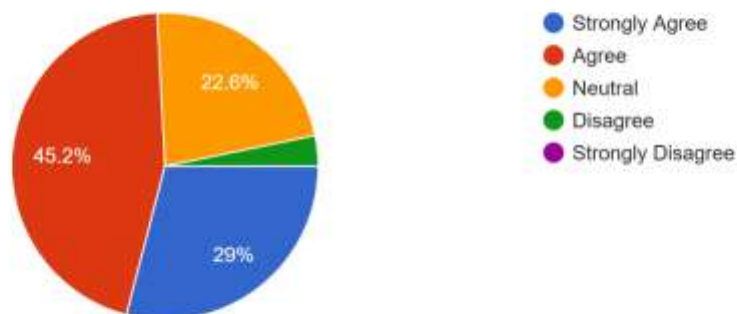
The course helped you to reframe your thinking about Galois extensions, Automorphism/Galois groups and fixed fields, Galois theory of polynomials.

31 responses



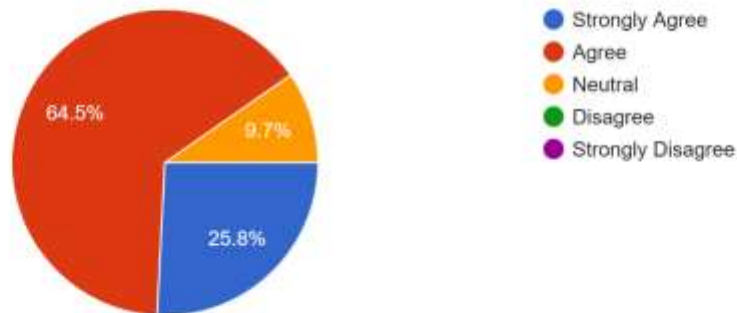
The course helped you to understand the role of Some Applications and Solvability by Radicals.

31 responses



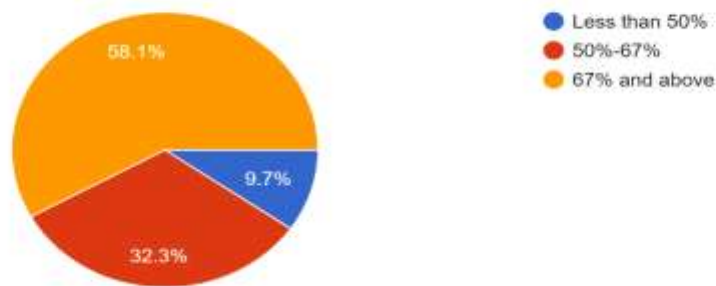
The course helped you to learn another term Existence and Uniqueness of finite fields, Simple extensions, and the primitive element theorem.

31 responses



How much was your attendance in this course?

31 responses



### Observations:

From the given responses, it is observed that more than 90% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of the basic ideas of Field Extensions, the significance of Galois Extensions and the Fundamental Theorem, about Galois extensions, Automorphism/Galois groups and fixed fields, Galois theory of polynomials, the role of Some Applications and Solvability by Radicals and Existence and Uniqueness of finite fields, Simple extensions, and the primitive element theorem. It is also observed that students had an interest in the paper as more than 58.1% of students had more than 67% of attendance.

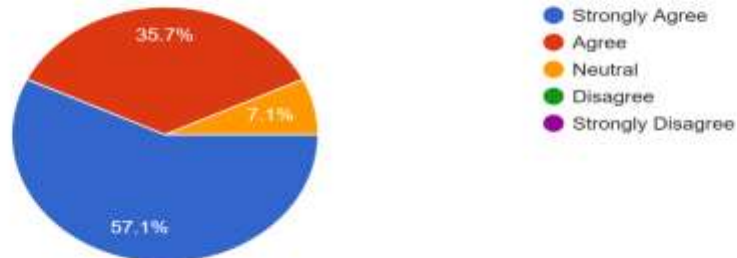
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE-6 (ii): Cryptography

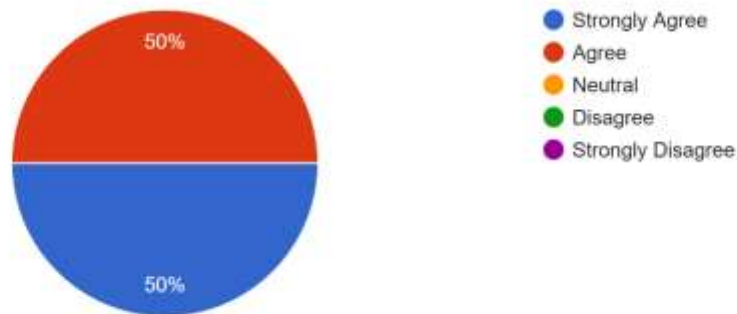
The course helped you to appreciate the significance of Classical Cryptosystems and Review of Finite Fields.

14 responses



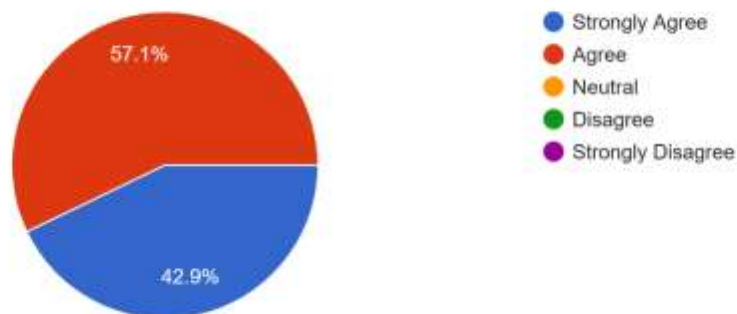
The course helped you to analyze the Euclidean Algorithm, Modular Arithmetic, Statement of Fermat's, Euler's and Chinese Remainder theorems, Discrete logarithm.

14 responses



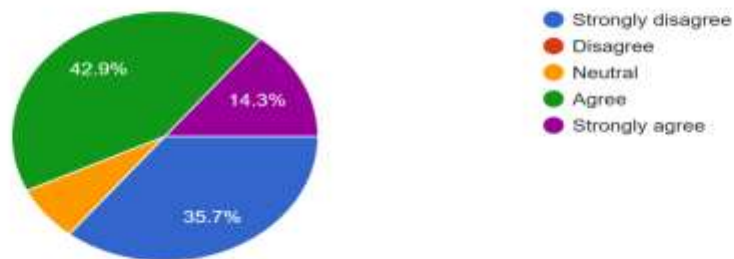
The course helped you to understand Modern Block Ciphers.

14 responses



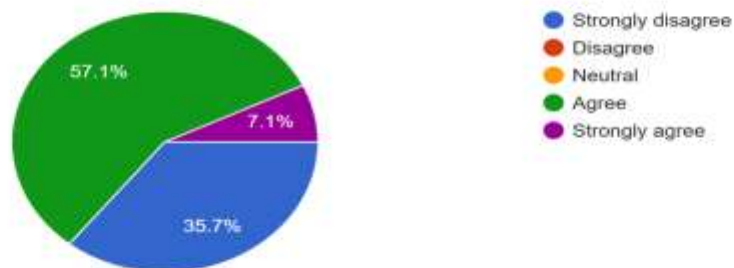
The course helped you to learn Public-key Cryptography, Hash Functions, Digital Signatures and Post Quantum Cryptography.

14 responses



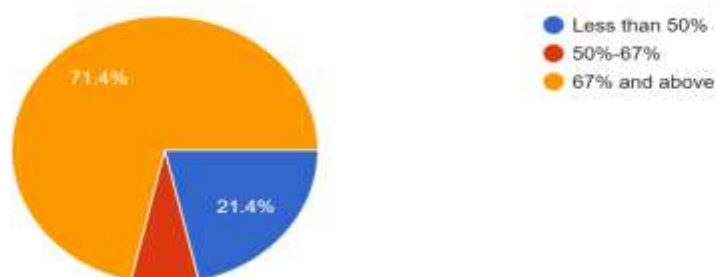
The course helped you to understand about the Introduction to post quantum cryptography, Linear codes, Generating matrix, Parity check matrix, McEliece cryptosystem.

14 responses



How much was your attendance in this course?

14 responses



## Observations:

From the given responses, it is observed that more than 90% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of the significance of Classical Cryptosystems and Review of Finite Fields, the Euclidean Algorithm, Modular Arithmetic, Statement of Fermat's, Euler's and Chinese Remainder theorems, Discrete logarithm,

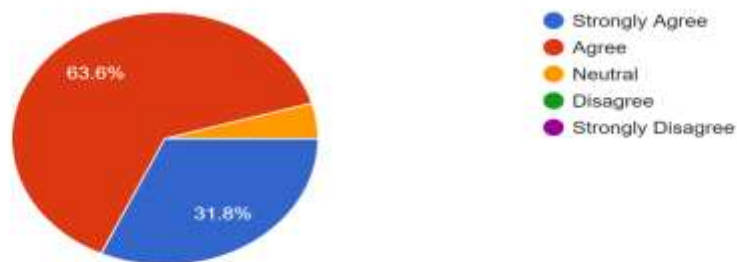
to understand Modern Block Ciphers and Public-key Cryptography, Hash Functions, Digital Signatures and Post Quantum Cryptography. It is also observed that students had an interest in the paper as more than 71.4 % of students had more than 67% of attendance.

### Action Taken:

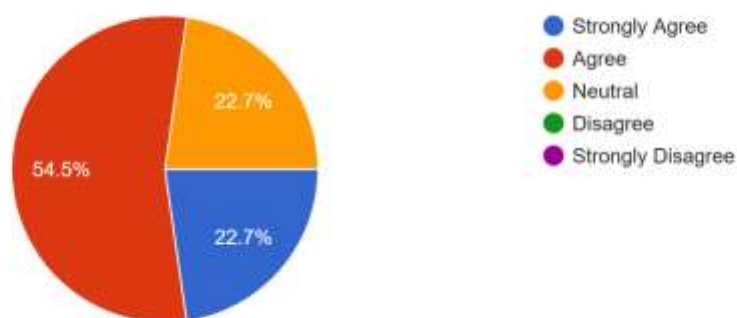
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE-6 (iv): Geometry of Curves and Surfaces

The course helped you to learn about the Geometry of Curves.  
22 responses

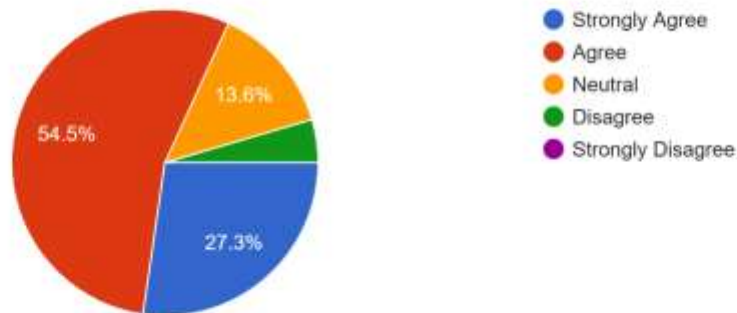


The course helped you to learn about the Local Theory of Surfaces in the Space.  
22 responses



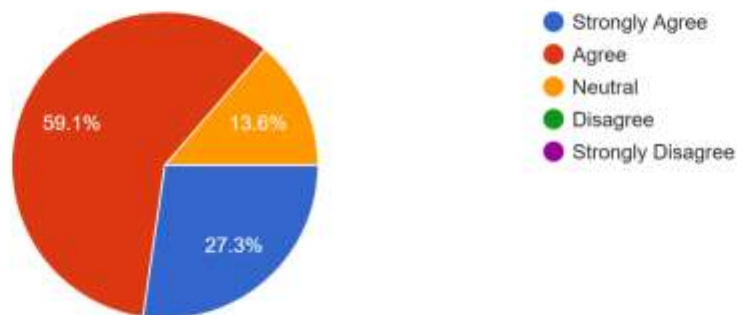
The course helped you to learn about the Orthonormal frames, Exterior differential forms in two variables and their uses.

22 responses



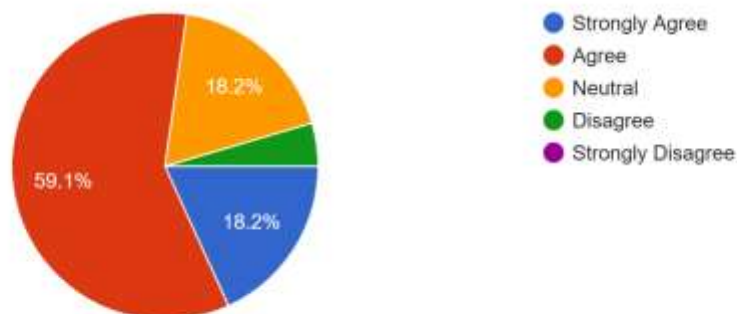
The course helped you to learn about Geometry of Surfaces.

22 responses



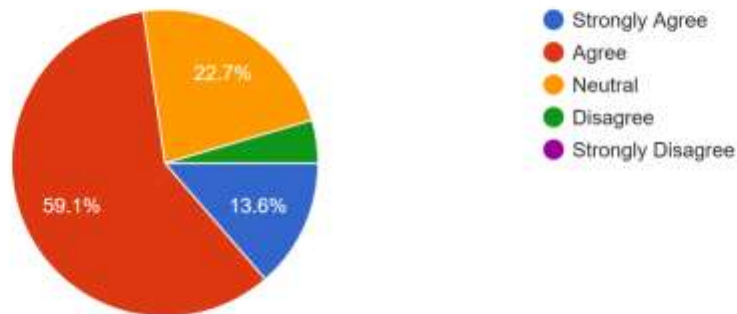
The course helped you to learn about the Concept of geodesic, Integration of exterior differential forms, Gauss-Bonnet theorem.

22 responses



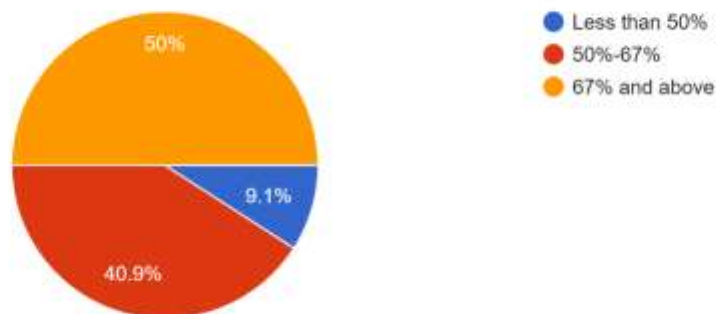
The course taught you to about the Riemannian metric on a surface, Vector fields.

22 responses



How much was your attendance in this course?

22 responses



### Observations:

From the given responses, it is observed that more than 90% of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of about the Geometry of Curves, about the Local Theory of Surfaces in the Space, about the Orthonormal frames, Exterior differential forms in two variables and their uses, about Geometry of Surfaces, about the Concept of geodesic, Integration of exterior differential forms, Gauss-Bonnet theorem and about the Riemannian metric on a surface, Vector fields. It is also observed that students had an interest in the paper as more than 50% of students had more than 67% of attendance.

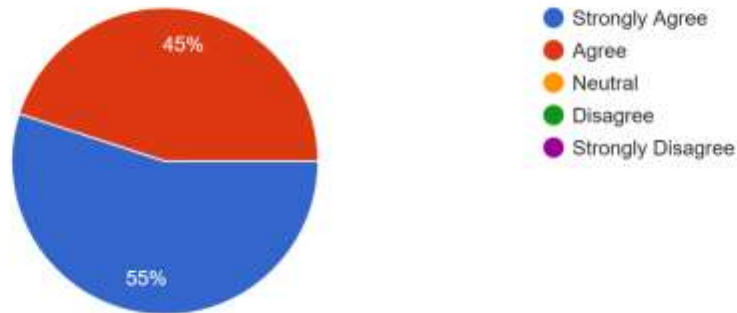
### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.

## DSE-6 (V): Integral Equations and Calculus of Variations

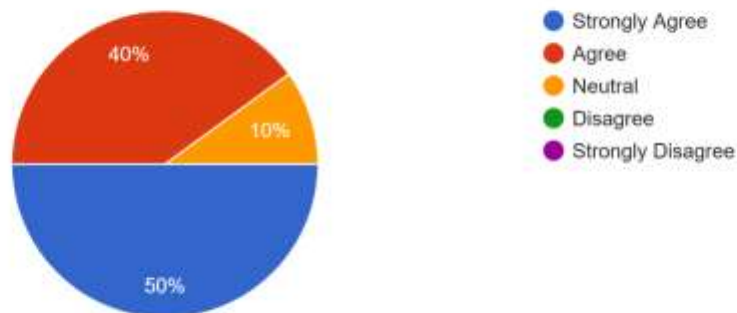
The course helped you to learn the Volterra Integral Equations.

20 responses



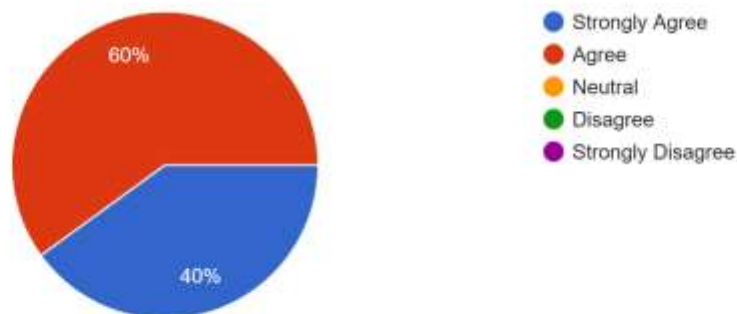
The course helped you to learn about Fredholm Integral Equations.

20 responses



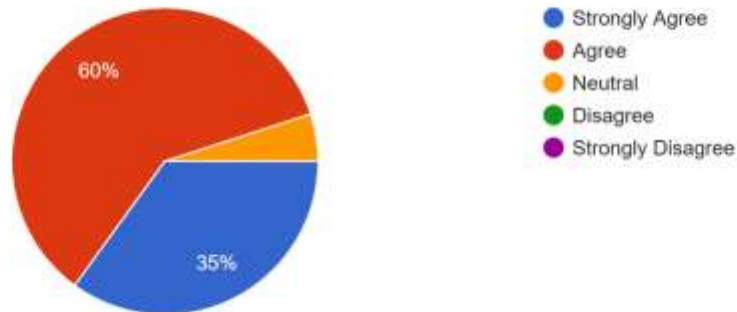
The course helped you to learn about Hilbert-Schmidt theorem, Nonhomogeneous Fredholm integral equation with symmetric kernel, Fredholm alternative.

20 responses



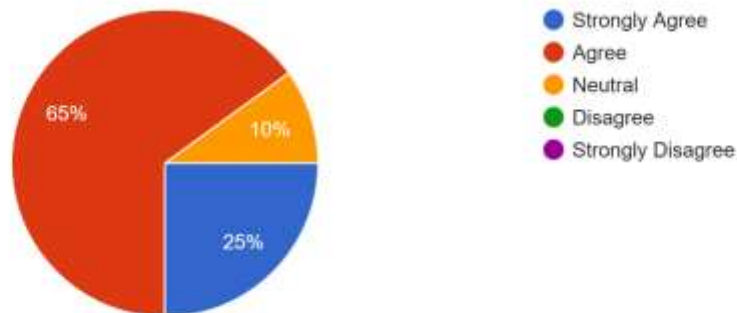
The course helped you to learn about Calculus of Variations.

20 responses



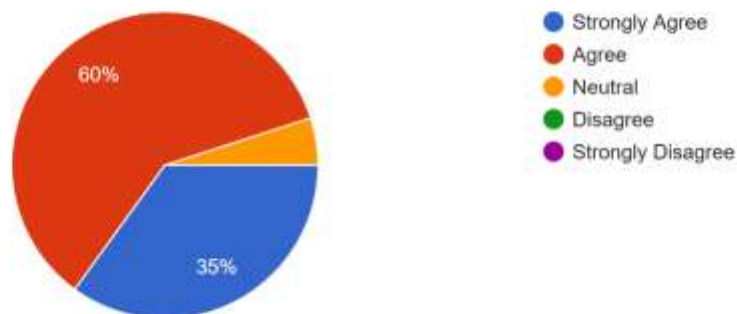
The course helped you to learn about General variation of a functional and variable end point problem, sufficient conditions for the extremum of a functional.

20 responses



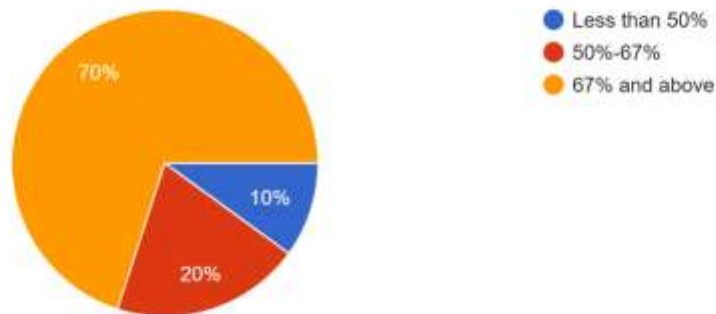
The course taught you to know writing Method of successive approximations.

20 responses



How much was your attendance in this course?

20 responses



### Observations:

From the given responses, it is observed that more than 90 % of students who opted for this course strongly agreed and agreed that they got an understanding of concepts of the Volterra Integral Equations, about Fredholm Integral Equations, about Hilbert-Schmidt theorem, Nonhomogeneous Fredholm integral equation with symmetric kernel, Fredholm alternative, about Calculus of Variations and about General variation of a functional and variable end point problem, sufficient conditions for the extremum of a functional. It is also observed that students had an interest in the paper as more than 70% of students had more than 67% of attendance.

### Action Taken:

For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance on their part. Assessments would also be done at regular intervals.