COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.Sc.(H) Mathematics**

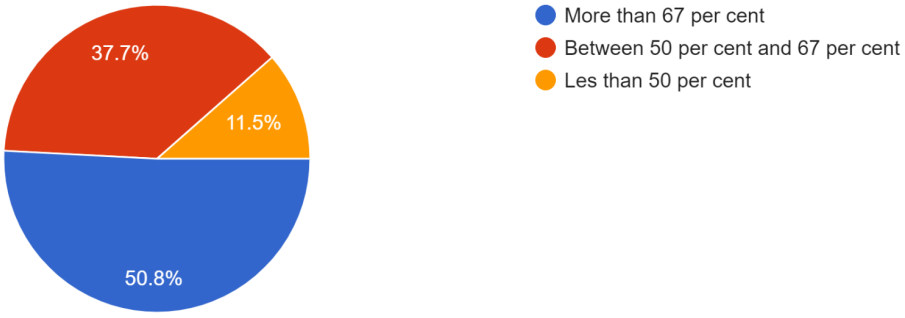
Semester: 1

Paper Name: Discipline Specific Core Course – 1: Algebra

UPC: 2352011101

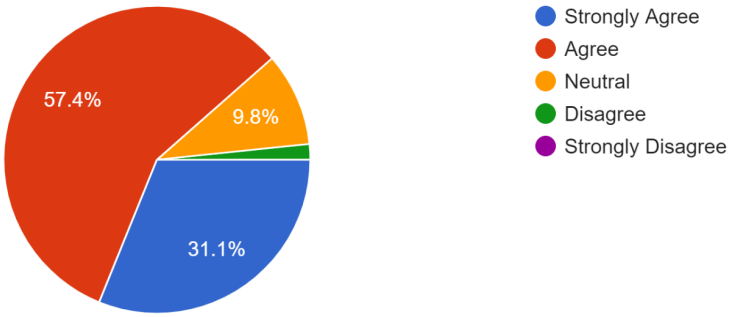
Percentage of classes attended

61 responses



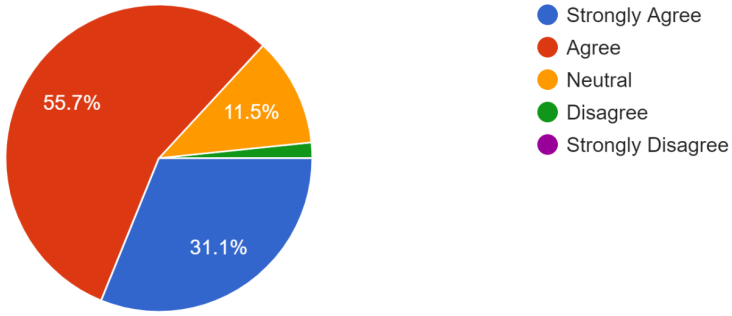
You have learned to determine number of positive/negative real roots of a real polynomial.

61 responses



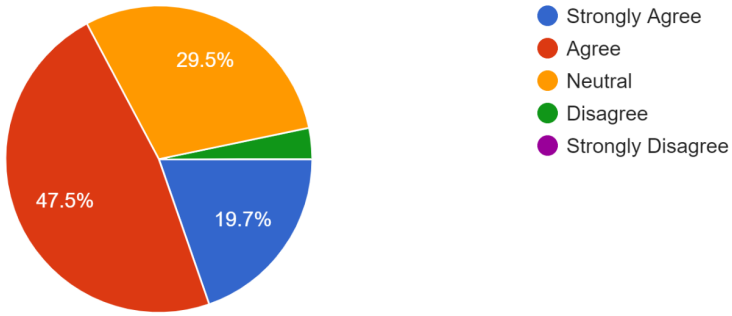
You have learned to solve cubic and quartic polynomial equations with special condition on roots and in general.

61 responses



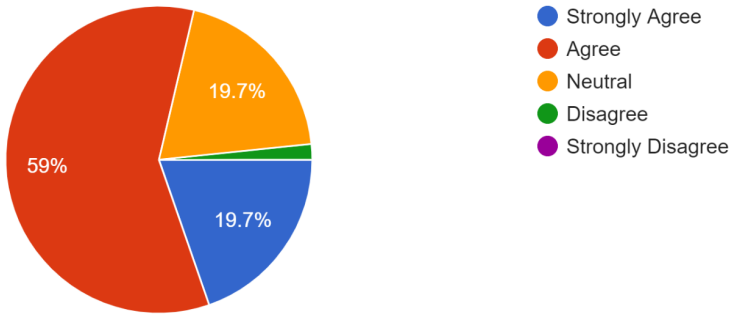
You understood to employ De-Moivre's theorem in a number of applications to solve numerical problems.

61 responses



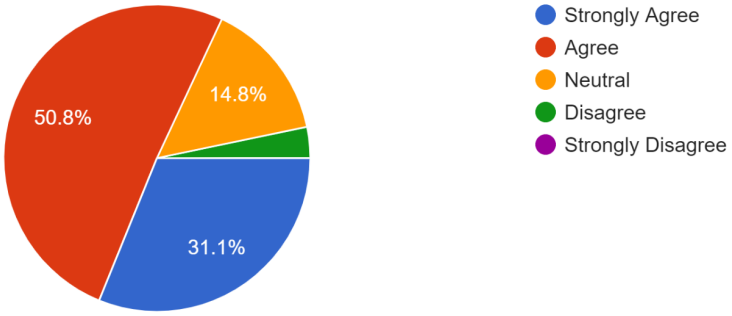
You have learned to use modular arithmetic and basic properties of congruences

61 responses



You have learned to recognize the algebraic structure, namely groups, and classify subgroups of cyclic groups.

61 responses



Observations:

From the given responses, it is observed that around 80% - 90% of students strongly agreed and agreed that they learned to determine the number of positive/negative real roots of real polynomial, cubic and quartic polynomial equations with the special conditions on roots and in general. The majority of students understood how to employ De-Moivre's theorem in a number of applications to solve numerical problems. They also learned to recognize the algebraic structure, namely groups, and classify subgroups of cyclic groups.

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.

Department: Mathematics **Program: B.Sc.(H) Mathematics**

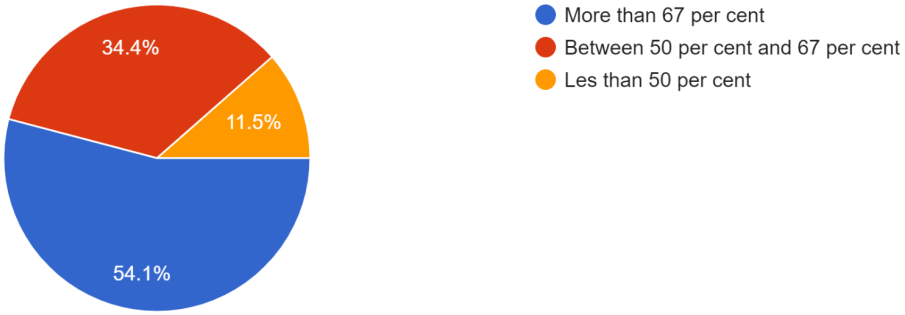
Semester: 1

Paper Name: Discipline Specific Core Course – 2: Elementary Real Analysis

UPC: 2352011102

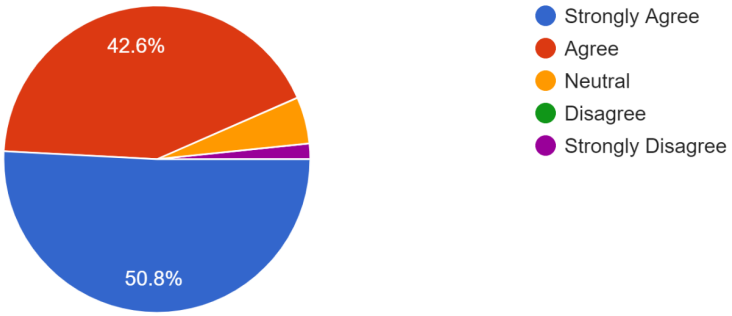
Percentage of classes attended

61 responses



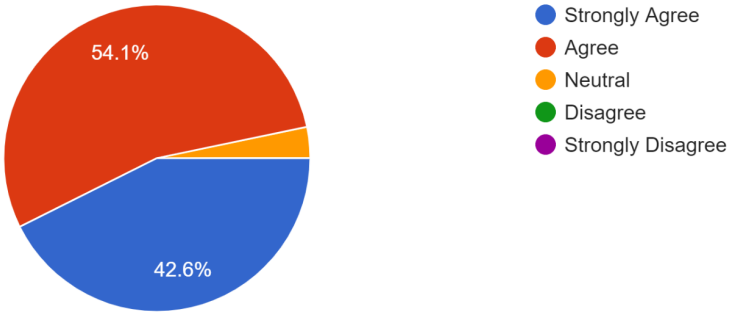
You understood the fundamental properties of the real numbers, including completeness and Archimedean, and density property of rational numbers in $\mathbb{R}$.

61 responses



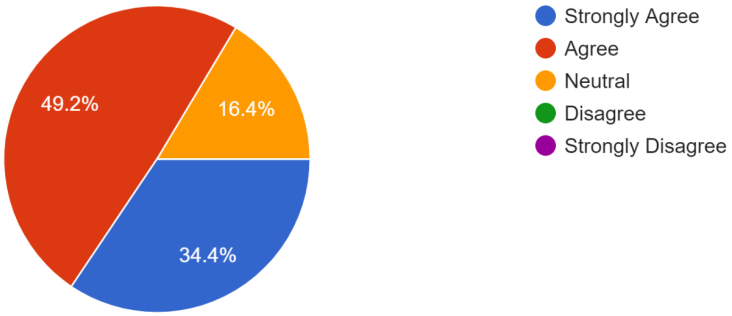
You have learned to define sequences in terms of functions from $\mathbb{N}$ to a subset of $\mathbb{R}$ and find the limit.

61 responses



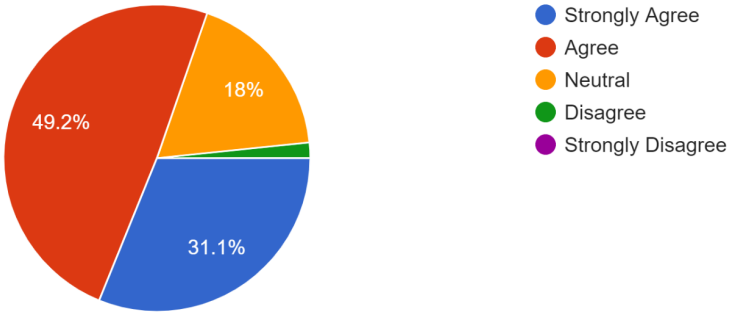
You understood the concepts of bounded, convergent, divergent, Cauchy and monotonic sequences and learned to calculate the limit superior and limit inferior of a bounded sequence.

61 responses



You have learned to apply limit comparison, ratio, root, and alternating series tests for convergence and absolute convergence of infinite series of real numbers.

61 responses



Observations:

From the given responses, it is observed that around 90% - 95% of students strongly agreed and agreed that they understood the fundamental properties of real numbers, including completeness and Archimedean, and density property of rational numbers in $\mathbb{R}$ and learned to define sequences in terms of functions from $\mathbb{N}$ to a subset of $\mathbb{R}$ and find the limit. The majority of students understood to apply limit comparison, ratio, root, and alternating series tests for convergence and absolute convergence of infinite series of real numbers.

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.

Department: Mathematics **Program: B.Sc.(H) Mathematics**

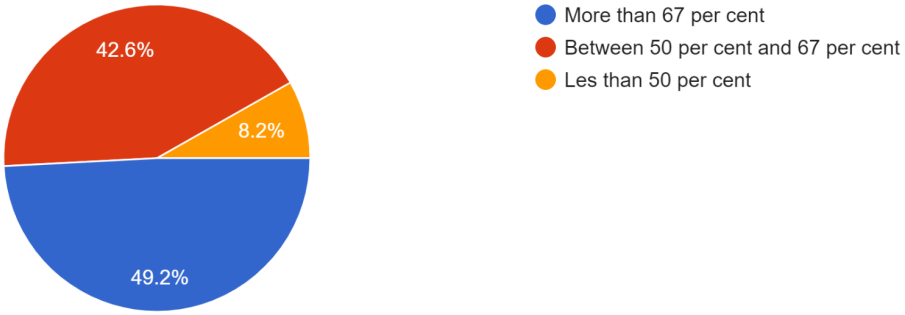
Semester: 1

Paper Name: Discipline Specific Core Course – 3: Probability And Statistics

UPC: 2352011103

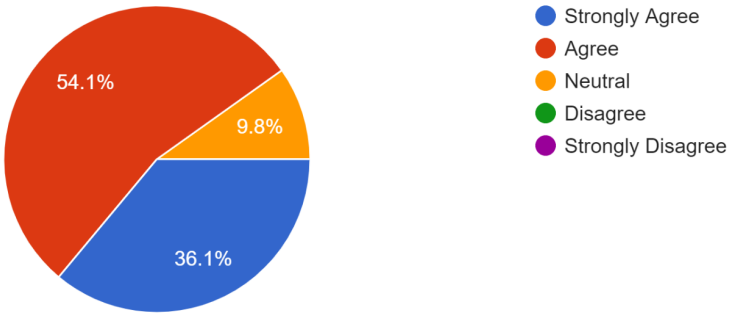
Percentage of classes attended

61 responses



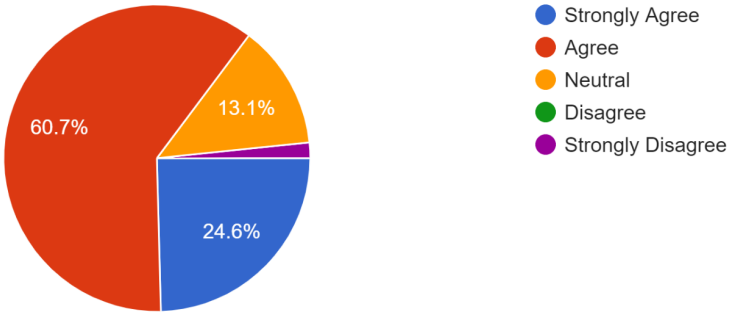
You understood some basic concepts and terminology - population, sample, descriptive and inferential statistics including stem-and-leaf plots, dotplots, histograms and boxplots.

61 responses



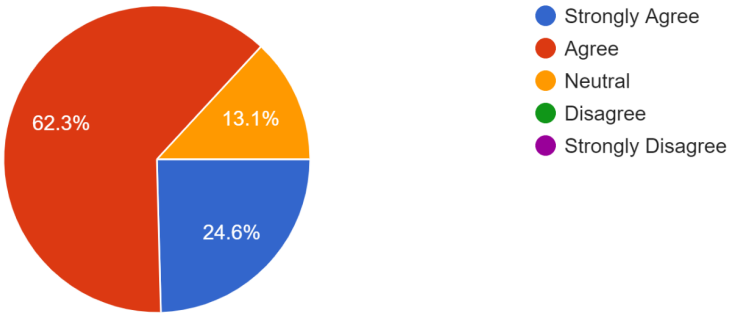
You have learned about probability density functions and various univariate distributions such as binomial, hypergeometric, negative binomial, Poisson, normal, exponential and lognormal.

61 responses



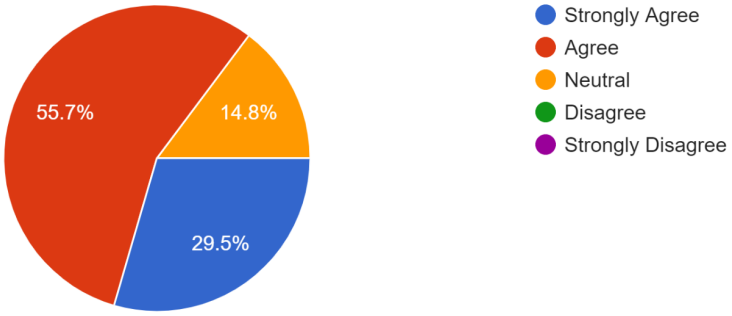
You understood the remarkable fact that the empirical frequencies of so many natural populations, exhibit bell-shaped (i.e., normal) curves, using the Central Limit Theorem.

61 responses



You have learned the method to measure the scale of association between two variables, and to establish a formulation helping to predict one variabl...f the other, i.e., correlation and linear regression.

61 responses



Observations:

From the given responses, it is observed that around 80% - 90% of students strongly agreed and agreed that they understood some basic concepts and terminology - population, sample, descriptive and inferential statistics including stem-and-leaf plots, dotplots, histograms and boxplots and also learned about probability density functions and various univariate distributions such as binomial, hypergeometric, negative binomial, Poisson, normal, exponential and lognormal. The majority of students understood the remarkable fact that the empirical frequencies of so many natural populations exhibit bell-shaped (i.e., normal) curves, using the Central Limit Theorem and concept of correlation and linear regression.

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.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Program: B.A. (H)

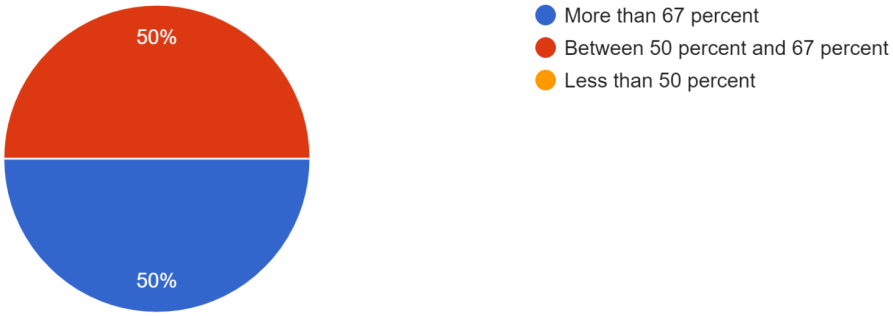
Semester: I

Paper Name: GE I-Fundamentals of Calculus

UPC: 2354001001

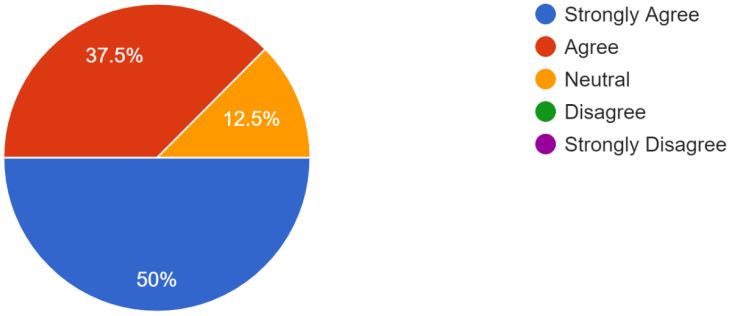
Percentage of Classes Attended

8 responses



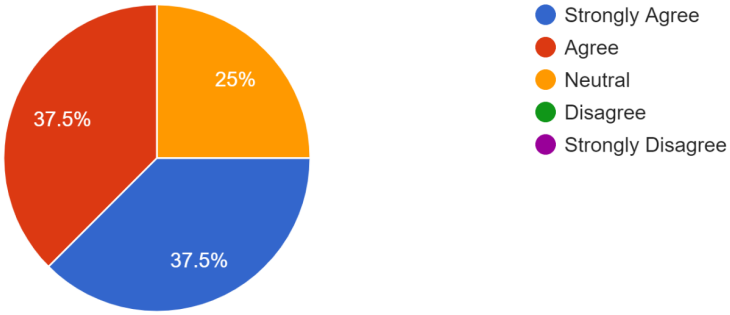
You got to learn about the continuity and differentiability in terms of limits.

8 responses



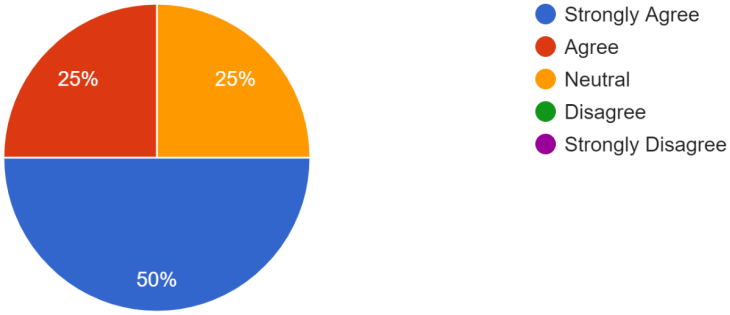
You have learned to describe asymptotic behavior in terms of limits involving infinity.

8 responses



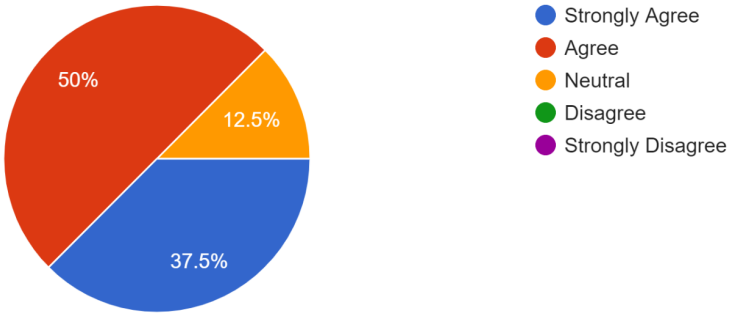
You were able to understand the importance of mean value theorems and its applications.

8 responses



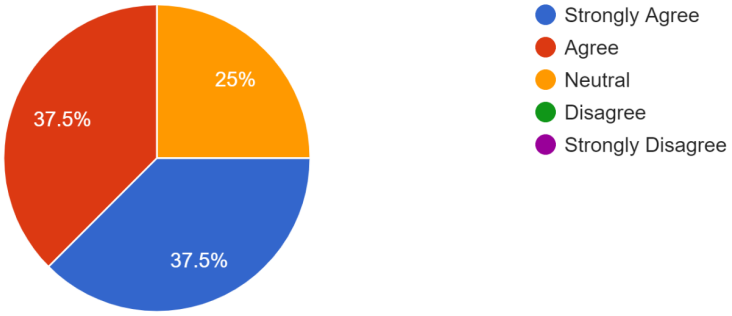
You have learned about Maclaurin's series expansion of elementary functions.

8 responses



You have learned to use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the polynomial and rational functions.

8 responses



Observations: From the given responses, it is observed that around 80-90 % of students strongly agreed or agreed that they were able to learn the concept of continuity and differentiability of functions, tracing of curves, Mean Value Theorems and their applications.

It is also observed that students need to be motivated to attend the course as 50% students had more than 67% of attendance.

Action Taken: Measures will be taken to make the subject more interesting to the students to ensure higher attendance.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Semester-1(NEP-2020)

Year-1

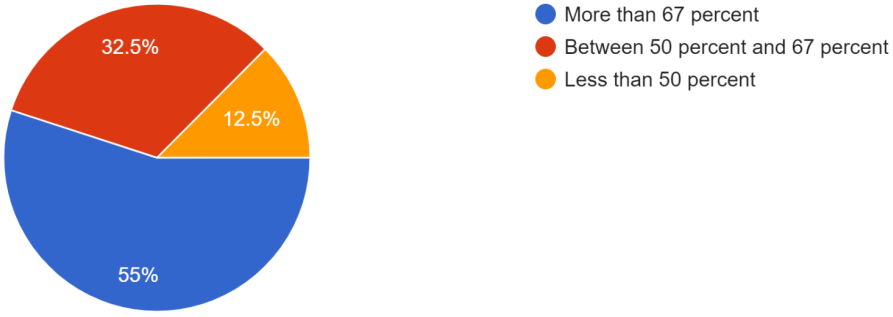
Paper Name: Programming using Python

Paper Type: SEC

UPC: 2346000011

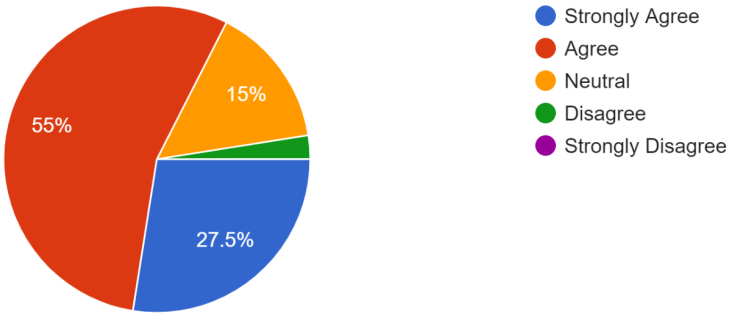
Percentage of Classes Attended

40 responses



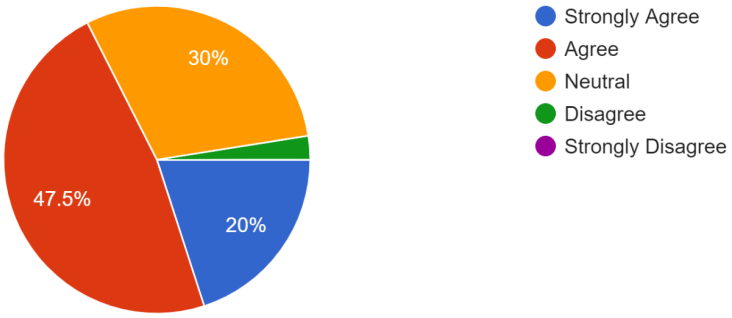
You are able to interpret the basic representation of the data structures and sequential programming .

40 responses



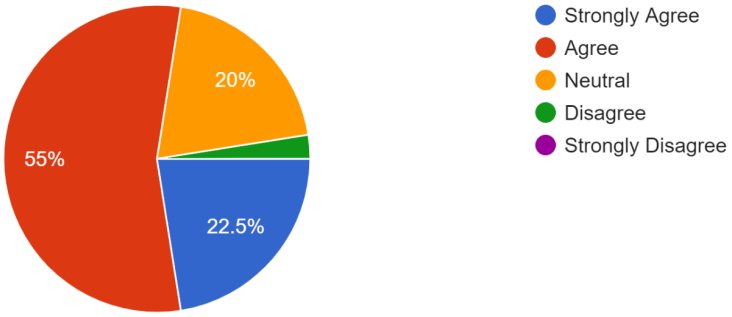
You have gained knowledge and ability to use control framework terminologies.

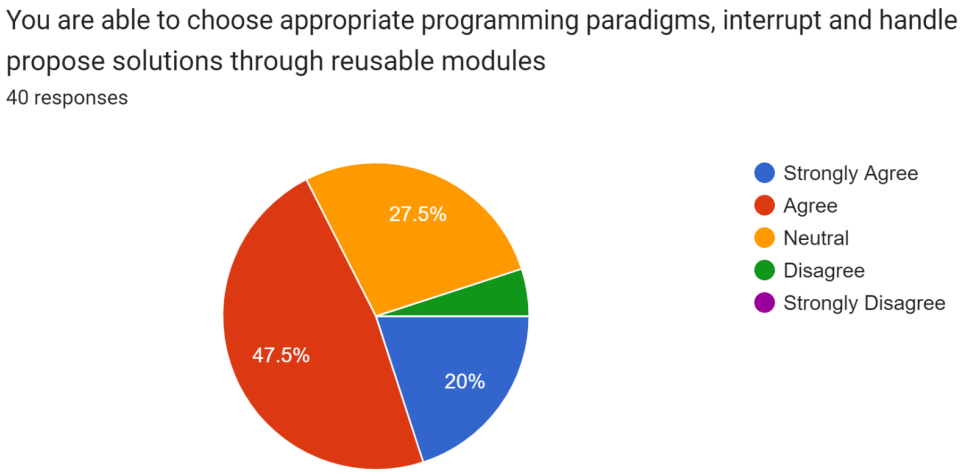
40 responses



You are able to work out using the core data structures as lists, dictionaries, tuples, and sets

40 responses





Observations:

From the given responses, it is observed that 82.5% 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 workout using the core data structure as lists, dictionaries,tuples and sets.About 67.5% of the students gained knowledge and can use control framework terminologies.

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.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

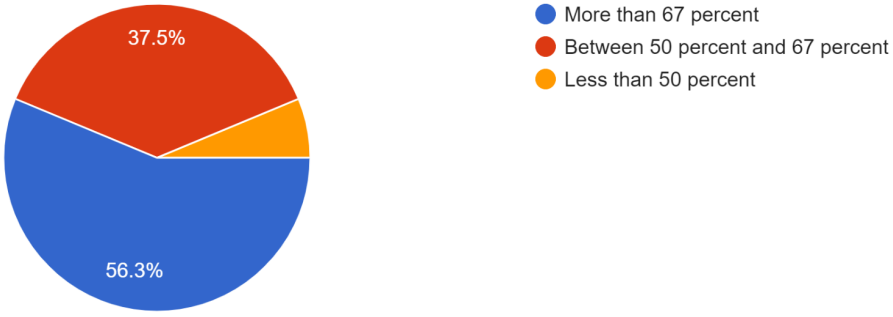
Semester: 1

Paper Name: SEC: Statistics with R

UPC: 2926001005

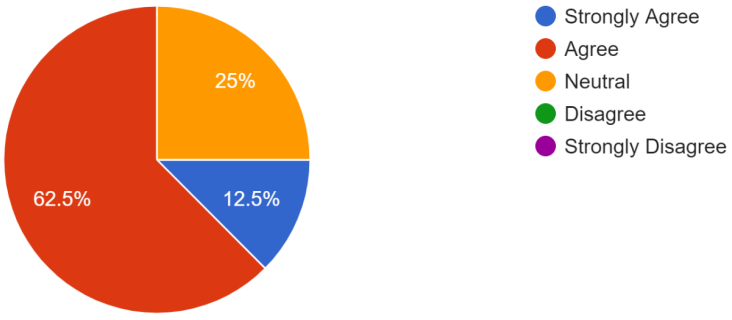
Percentage of Classes Attended

16 responses



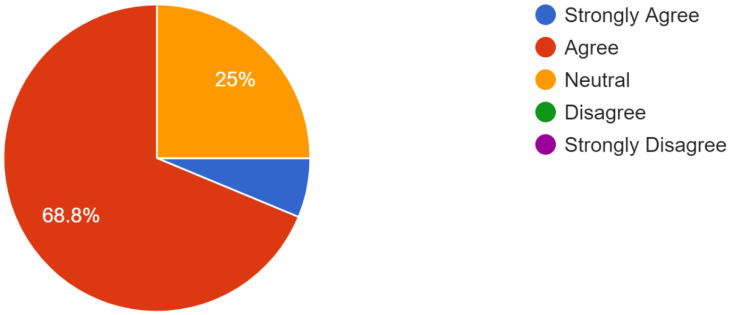
You are able to extract and read data into R, manipulate, and analyse it.

16 responses



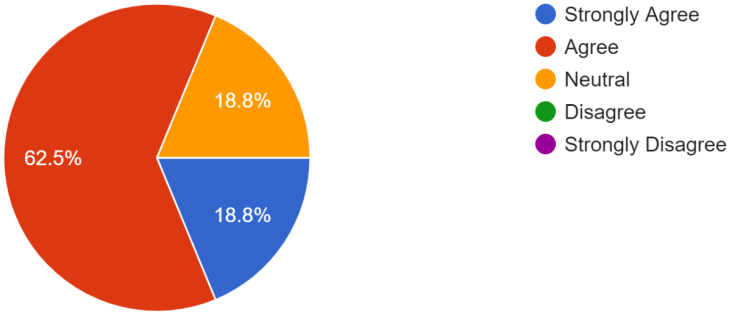
You are able to understand the R environment for downloading, installing, and using packages.

16 responses



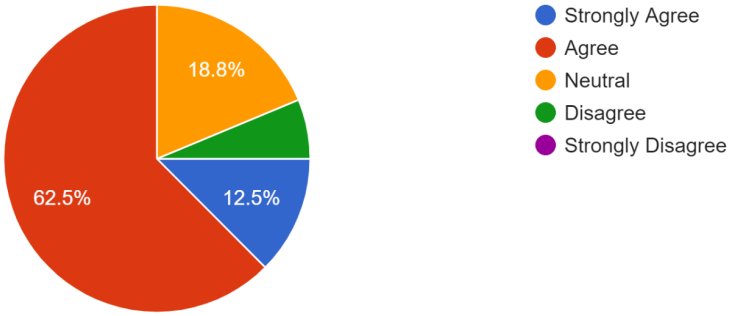
You learnt the basic programming to write own functions.

16 responses



You understood how to debug, organize, and comment R code.

16 responses



Observations:

From the given responses, it is observed that 75% of the students strongly agreed and agreed that they are able to extract, read data, manipulate, and analyze data into R and they are able to understand the R environment for downloading, installing, and using packages. Also, they are able to do basic programming to write their own functions. Also, they are able to perform basic statistical operations and regressions.

Actions Taken

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

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Course: BA Prog. (NEP-2020)

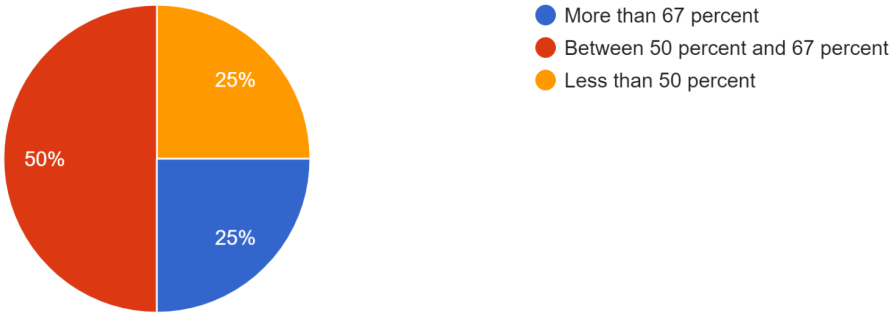
Semester-1(NEP-2020), Year-1

Paper: Topics in Calculus

Paper Code: 2352571101

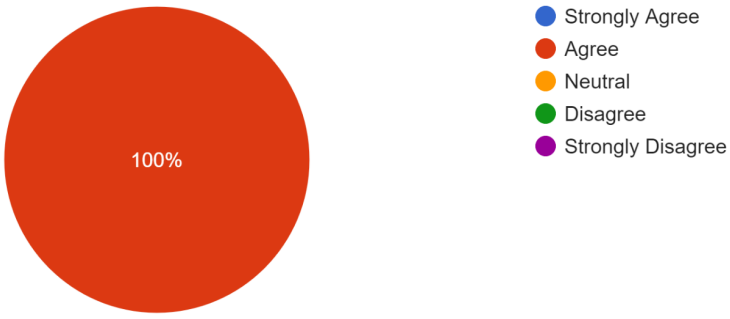
Percentage of Classes Attended

4 responses



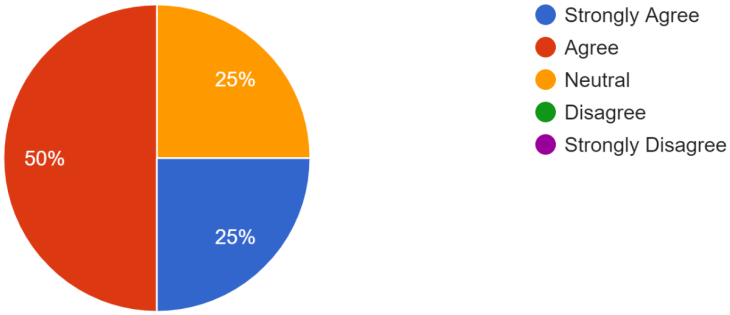
You got to learn about the continuity and differentiability in terms of limits and graphs.

4 responses



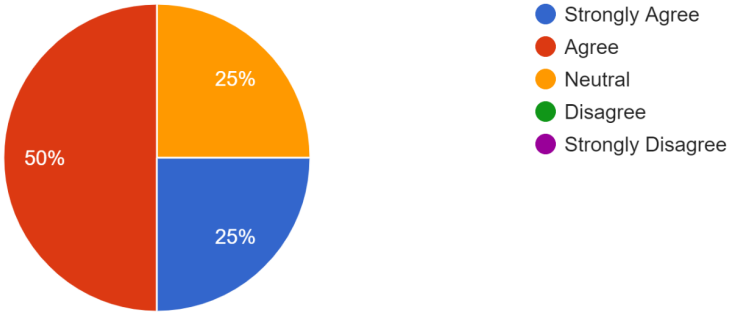
You have learned to describe asymptotic behavior in terms of limits involving infinity.

4 responses



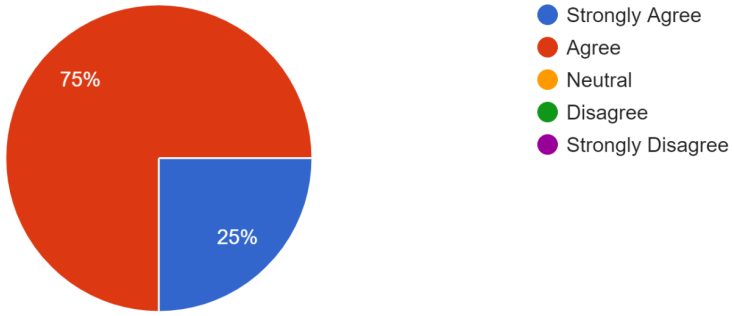
You were able to understand the importance of mean value theorems and its applications.

4 responses



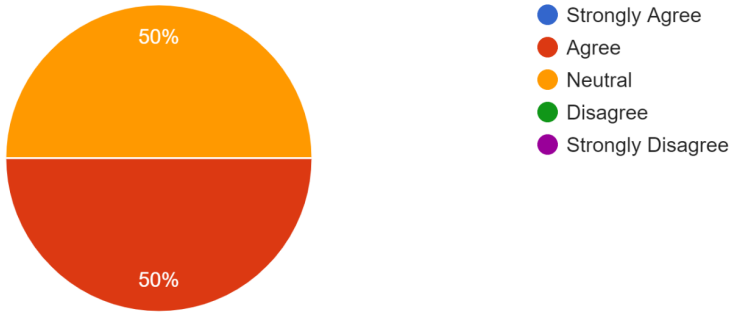
You have learned to use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the polynomial and rational functions.

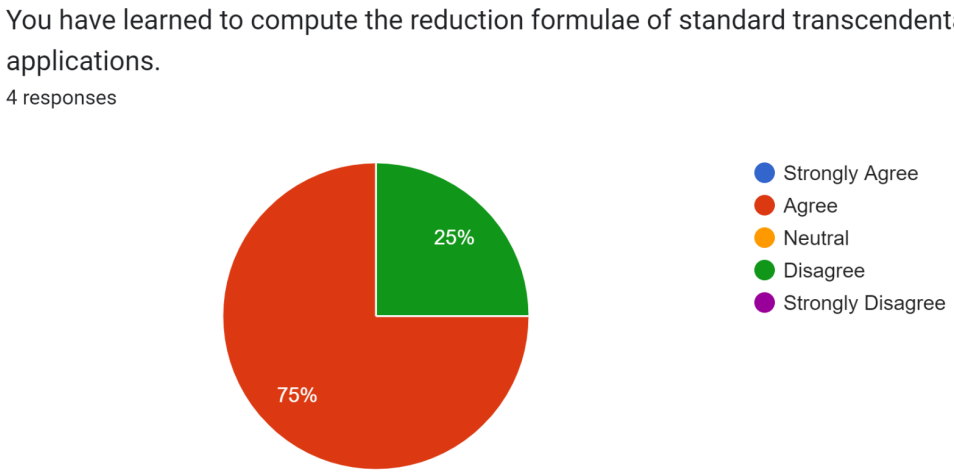
4 responses



You have learned to apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.

4 responses





Observations:

From the given responses, it is observed that 100% of the students strongly agreed and agreed that they were able to learn about the continuity and differentiability in terms of limits and graphs. They were also able to understand the importance of mean value theorems and its applications and learned to use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graph the polynomial and rational functions.50% of the students strongly agreed or agreed that they were able to learn to apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves and to compute the reduction formulae of standard transcendental functions with applications.

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. For the weaker students, special classes will be held to discuss important topics. Assessments like tests, assignments, and Viva would also be done at regular intervals.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Course: BA Prog. (NEP-2020)

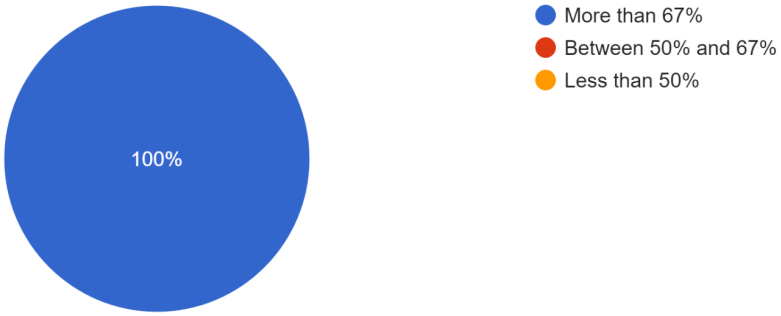
Semester-1(NEP-2020), Year-1

Paper:Elements of Discrete Mathematics

Paper Code: 2352201102

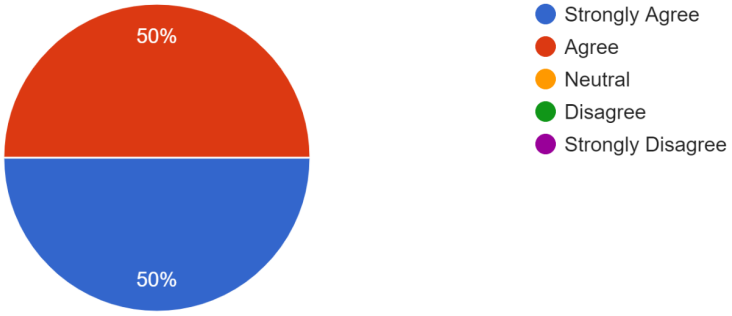
Percentage of Classes Attended

2 responses



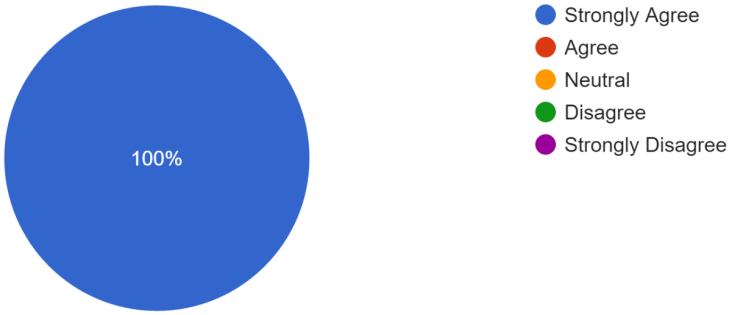
You have learnt about partial order and related properties.

2 responses



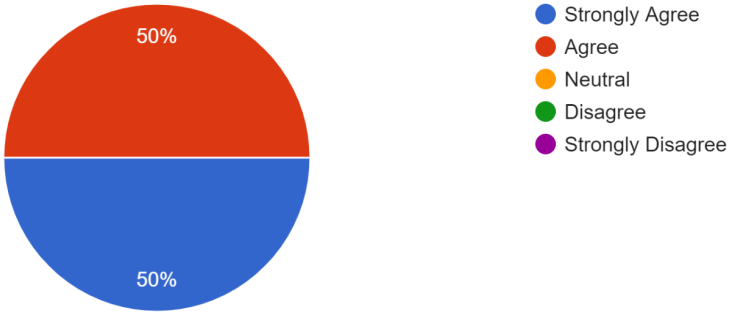
You have understood the basic concepts of sets, relations, functions and induction.

2 responses



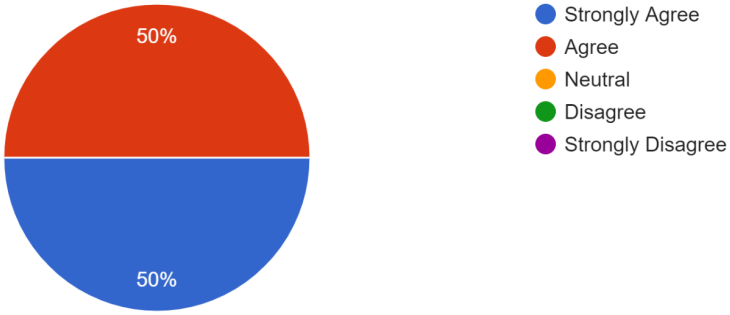
You have understood the mathematical logic and logical operations to various fields.

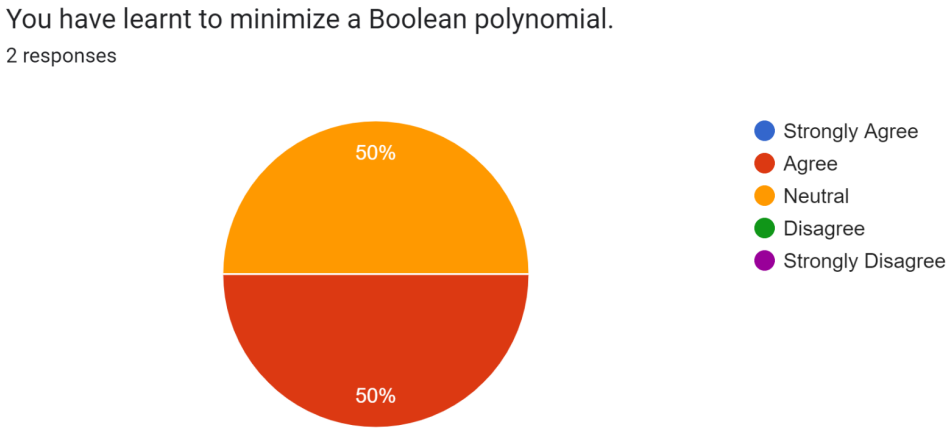
2 responses



You have understood the notion of order and maps between partially ordered sets.

2 responses





Observations:

From the given responses, it is observed that 100% of the students understood the basic concepts of sets,relations,functions and induction. 50% of the students strongly agree and 50% agree that they have understood the mathematical logic and logical operations to various fields.

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. Assessments like tests, assignments, and Viva would also be done at regular intervals.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Course: BA Prog. (NEP-2020)

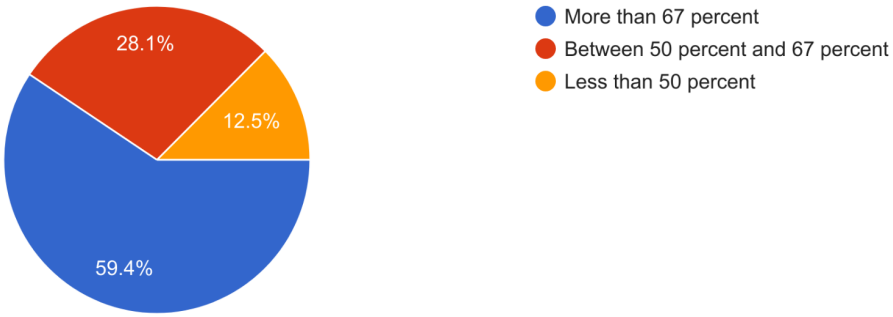
Semester-1(NEP-2020), Year-1

Paper:VAC: Vedic Mathematics I

Paper Code: 6967001020

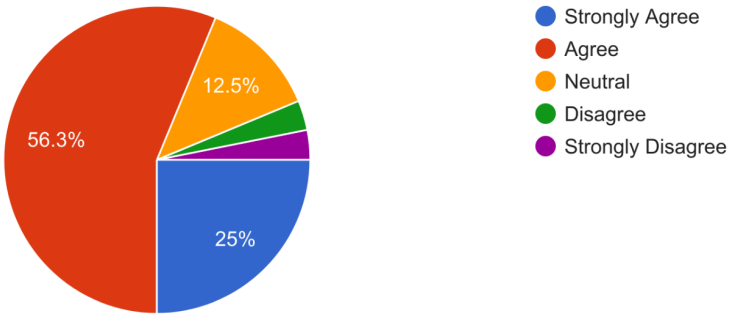
Percentage of Classes Attended

32 responses



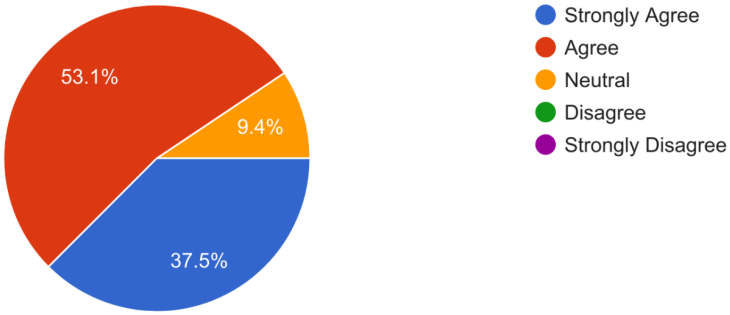
You are familiarized with the mathematical underpinnings and techniques.

32 responses



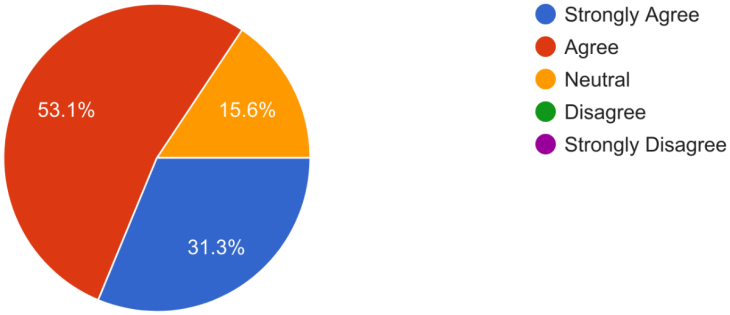
You are able to do basic maths faster and with ease.

32 responses



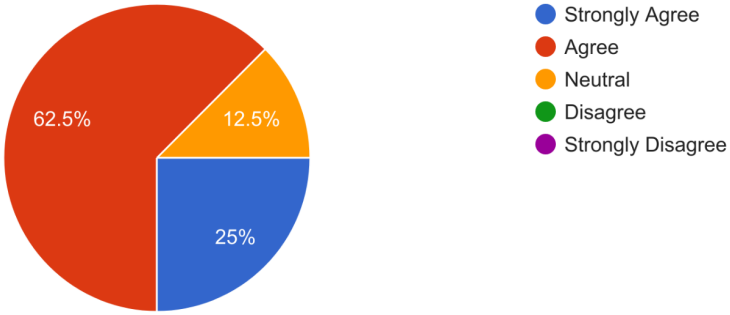
You have experienced joyful learning of Mathematics

32 responses



You have developed logical and analytical thinking.

32 responses



Observations:

From the given responses, it is observed that 80% of the students strongly agreed and agreed that they were familiarized with mathematical underpinnings and techniques. They were able to do basic maths faster and with ease. About 80 - 85% students experienced joyful learning of mathematics.

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. Assessments like tests, assignments, and Viva would also be done at regular intervals.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

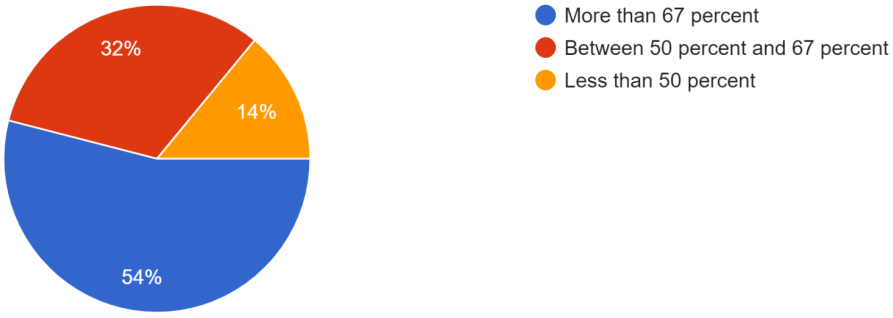
Semester: 1

Paper Name: SEC: IT Skills and Data Analysis-I

UPC: 3126000001

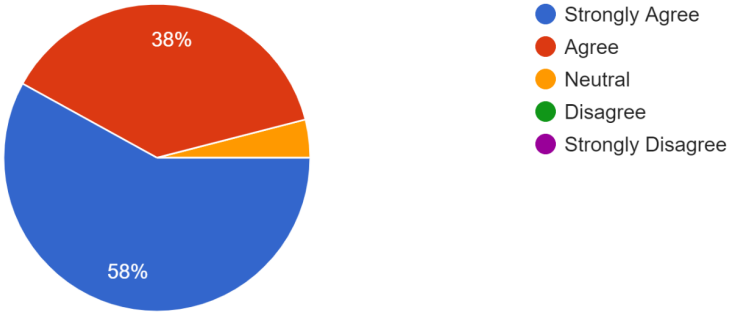
Percentage of Classes Attended

50 responses



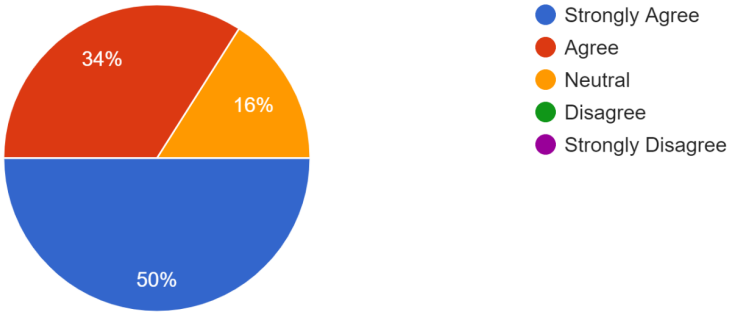
You are able to represent and interpret data in tabular and graphical forms.

50 responses



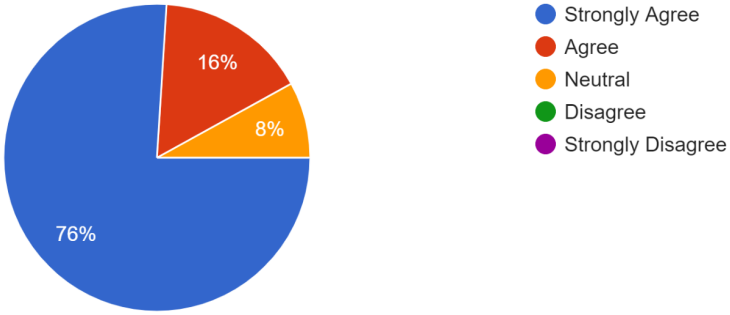
You have understood and can interpret the measures of central tendency and dispersion.

50 responses



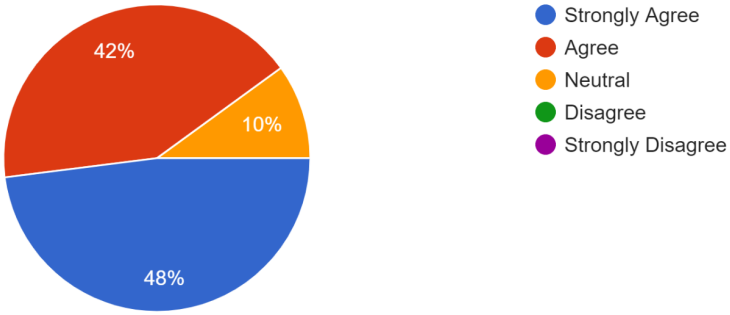
You can use IT tools such as spreadsheets to visualise and analyse data.

50 responses



You are equipped with some fundamental concepts, which play a critical role in understanding and visualizing real world data.

50 responses



Observations:

From the given responses, it is observed that 96% of the students strongly agreed and agreed that they were able to represent and interpret data in tabular and graphical forms. About 80 - 90% understood and can interpret the measures of central tendency and dispersion. They are equipped with some fundamental concepts which play a critical role in understanding and visualizing real world data.

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. Assessments like tests, assignments and internal practicals would also be done at regular intervals.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

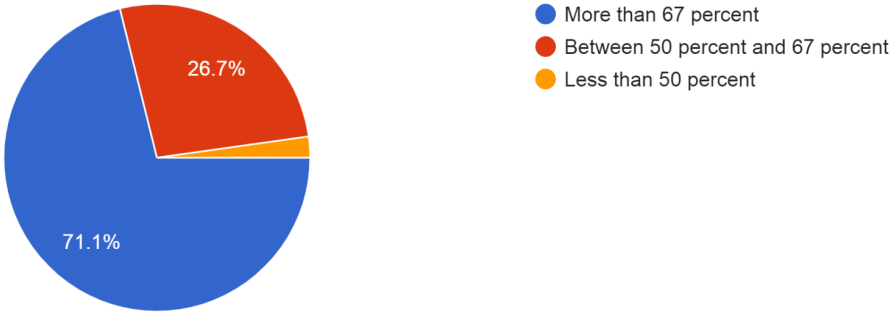
Department: Mathematics **Program: B.Sc.(H) Mathematics**

Semester: 3

Paper Name: Discipline Specific Core Course – 8 RIEMANN INTEGRATION

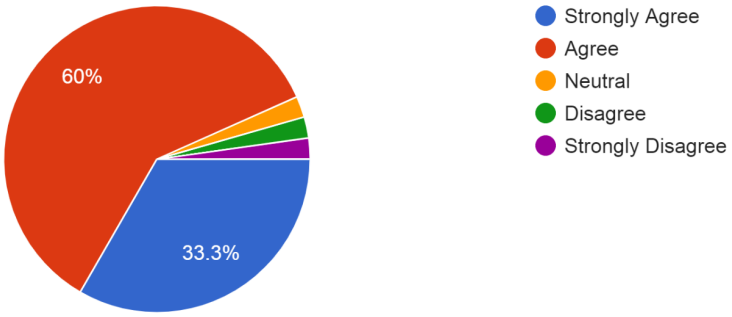
Percentage of Classes Attended

45 responses



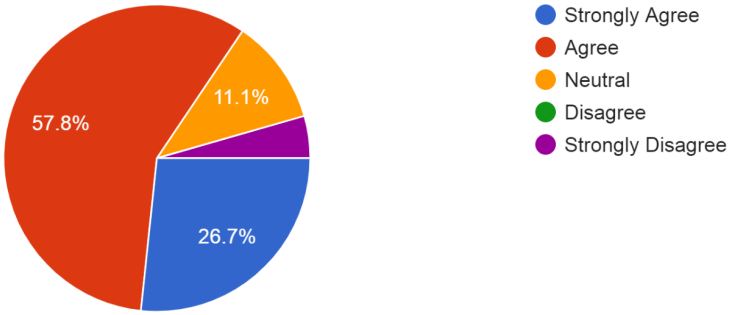
You are able to understood the applications of the Riemann sums to the volume and surface of a solid of revolution.

45 responses



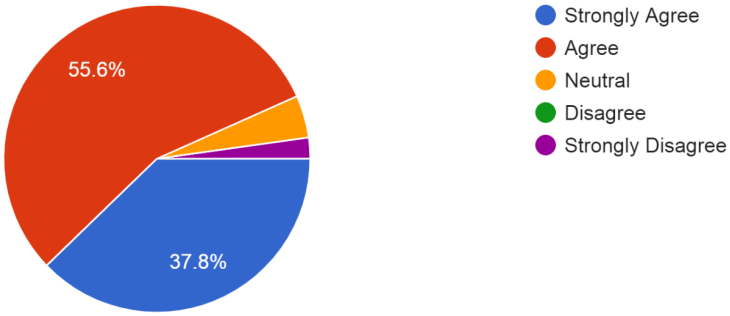
You understood the convergence of improper integrals including, beta and gamma functions.

45 responses



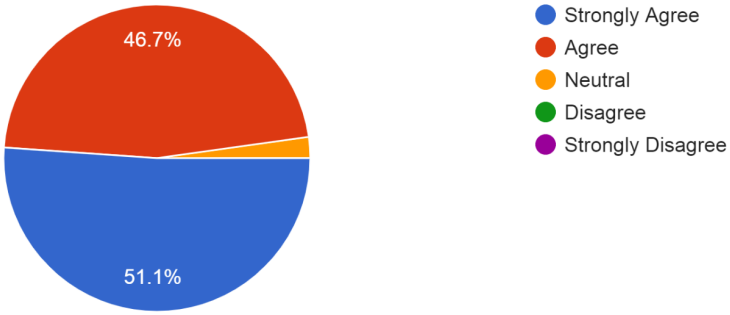
You have learnt about the properties of Riemann integrable functions.

45 responses



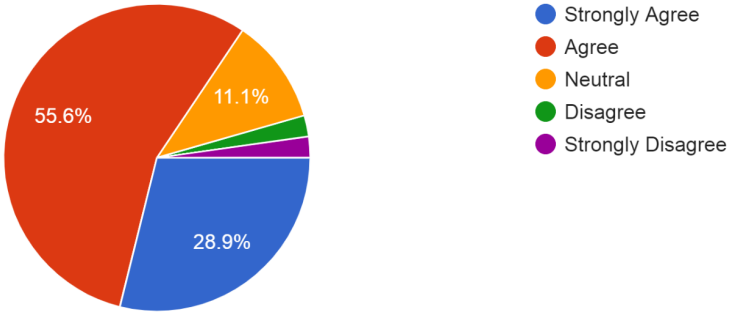
You were able to learn integration by substitution and integration by parts.

45 responses



You understood geometrical properties of continuous functions on closed and bounded intervals.

45 responses



Observations:

From the given responses, it is observed that more than 90% of students strongly agreed and agreed that they learned to determine the Riemann sum, intermediate value theorem for integral, Fundamental theorem and convergence of improper integral. They also learned to recognize the integral for practical purposes.

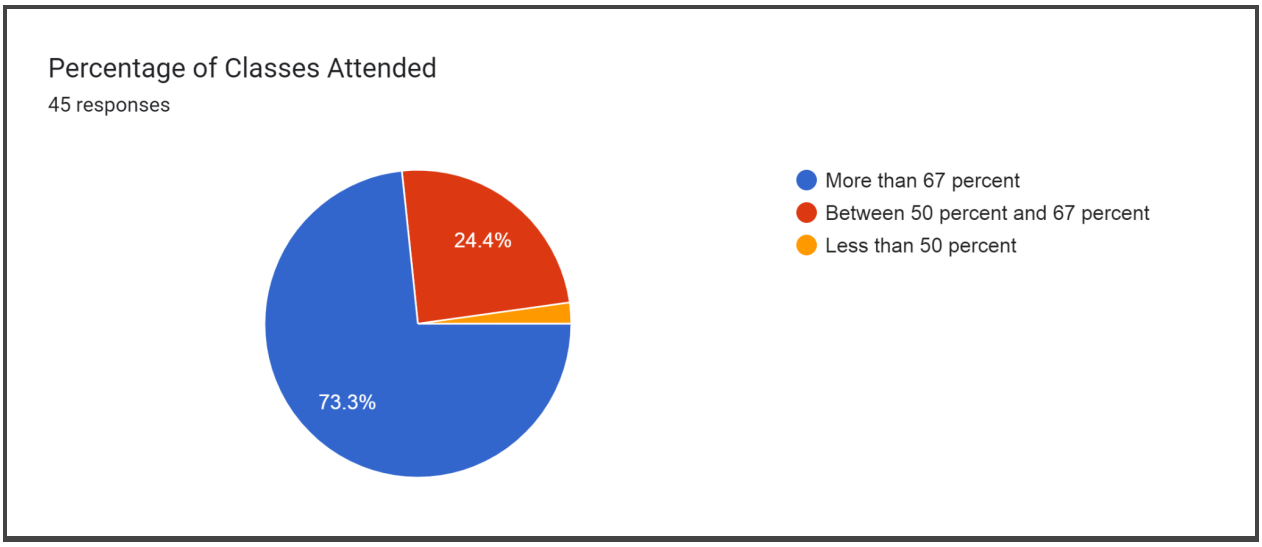
Action Taken:

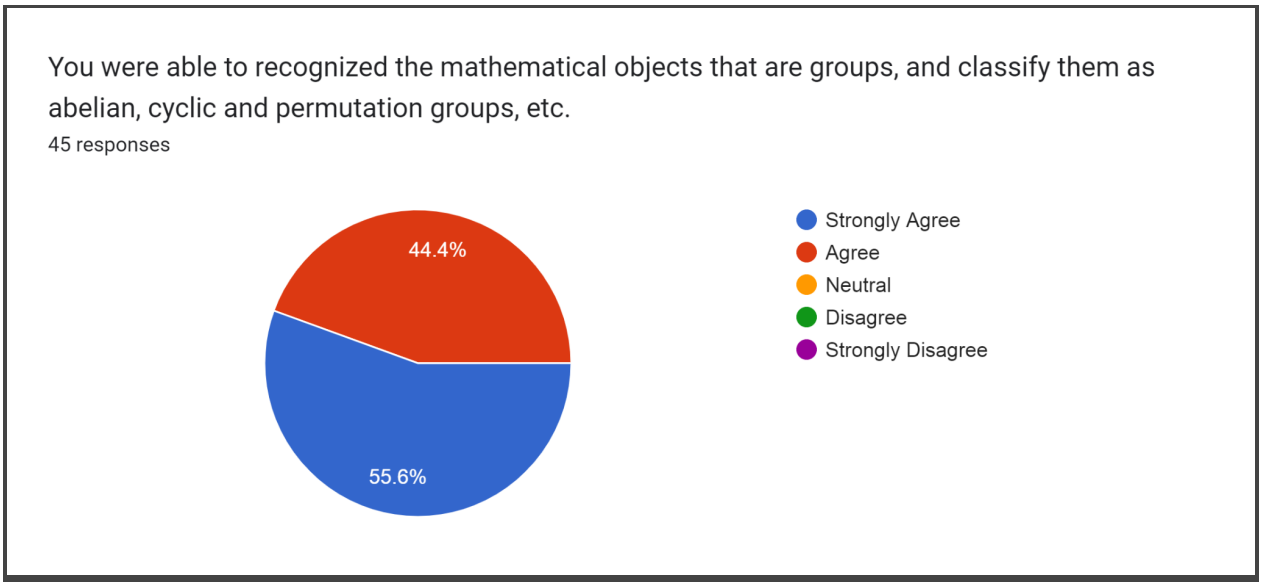
For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance. Assessments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

Department: Mathematics **Program: B.Sc.(H) Mathematics**

Semester: 3

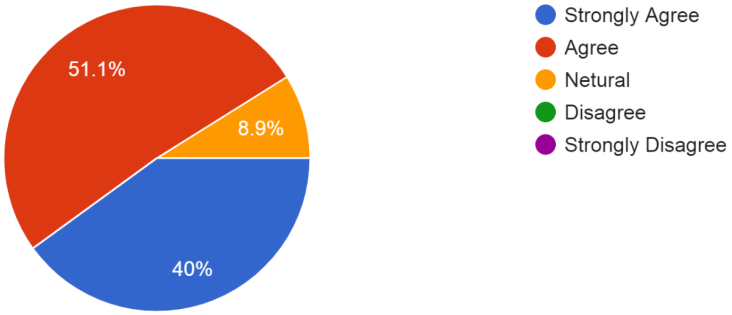
Paper Name: Discipline Specific Core Course – 7: Group Theory





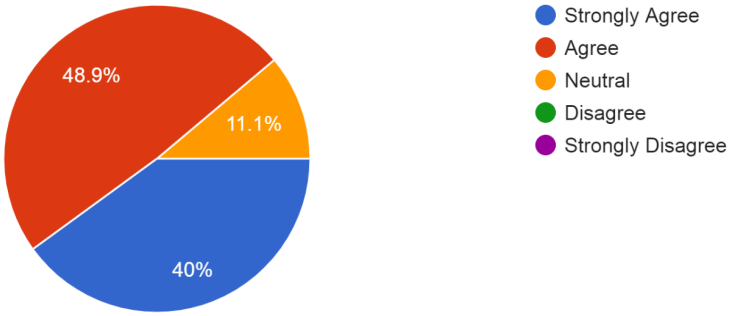
You were able to link the fundamental concepts of groups and symmetrical figures.

45 responses



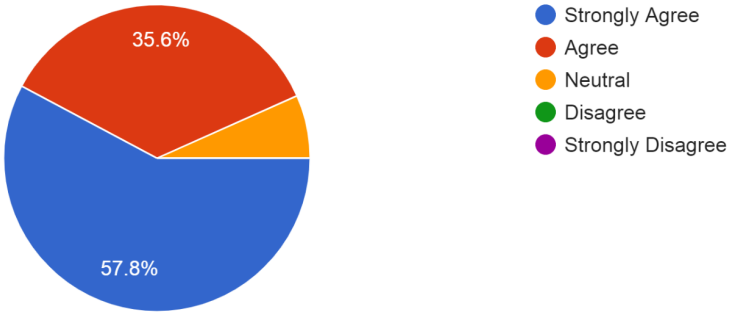
You were able to analyze the subgroups of cyclic groups and classify subgroups of cyclic groups.

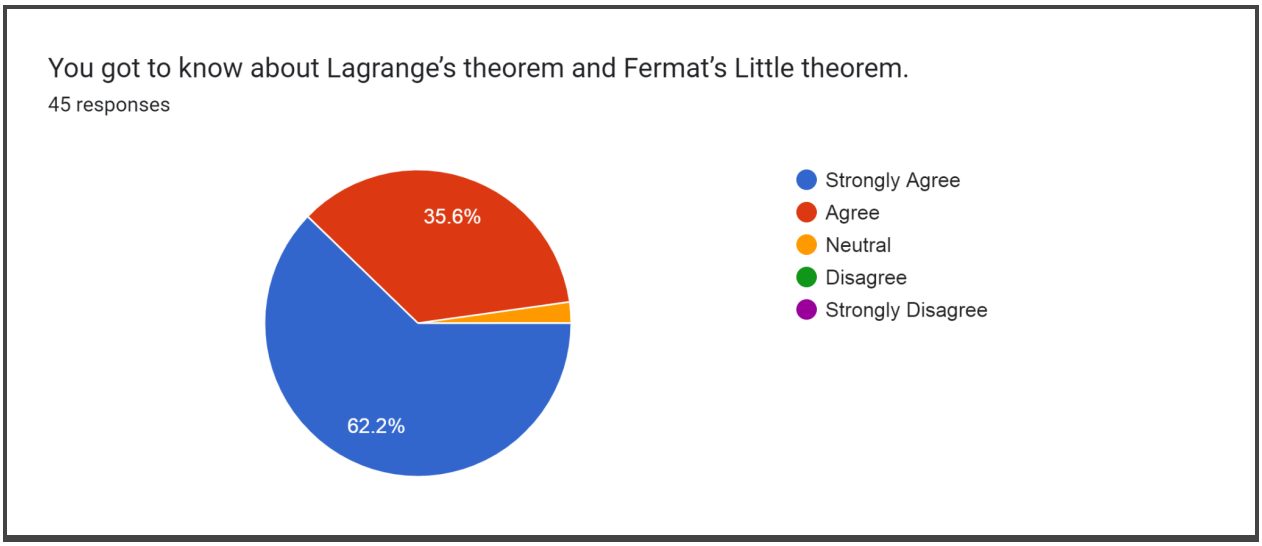
45 responses

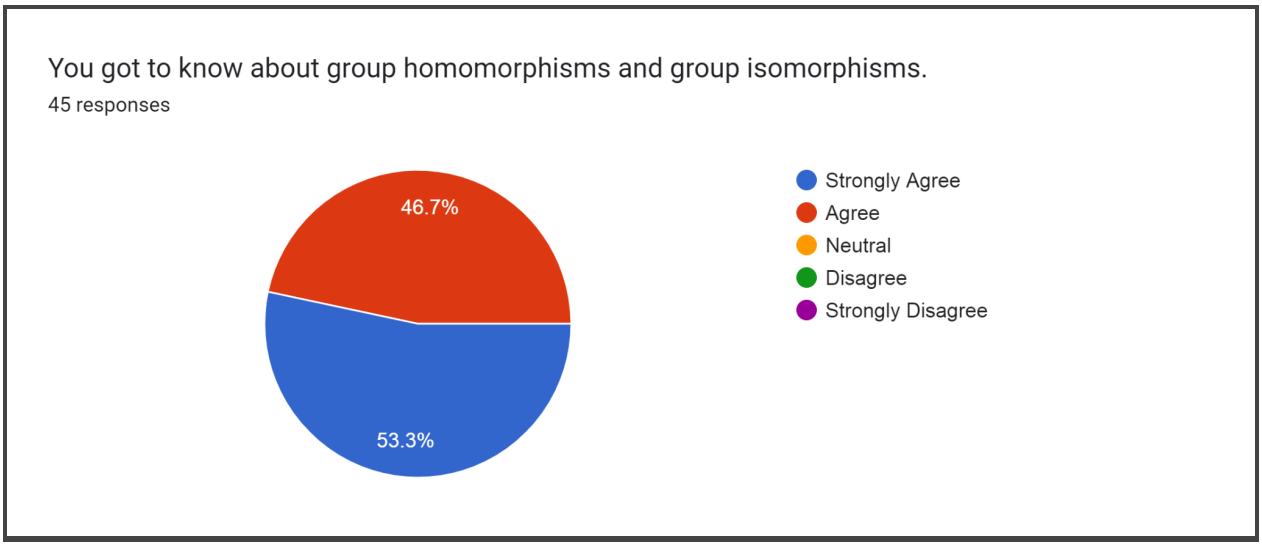


You were able to explain the significance of the notion of cosets, normal subgroups and factor groups.

45 responses







Observations:

From the given responses, it is observed that more than 95% of students strongly agreed and agreed that they understood the fundamental properties of group,Symmetric group, Normal group, Factor group and direct product of groups. Also knows about the Homomorphism and Isomorphism between two groups.

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.

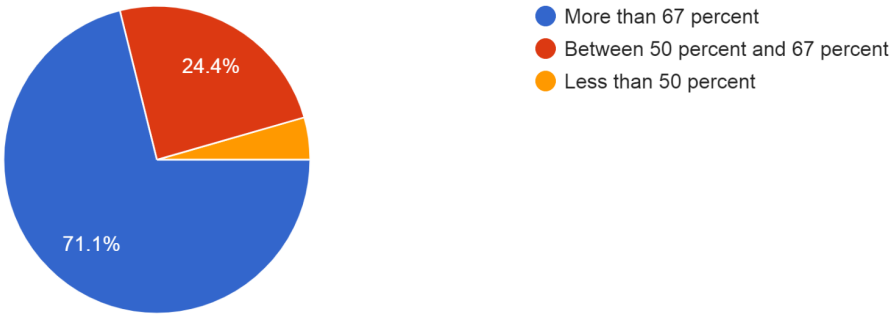
Department: Mathematics **Program: B.Sc.(H) Mathematics**

Semester: 3

Paper Name: Discipline Specific Core Course – 9: DISCRETE MATHEMATICS

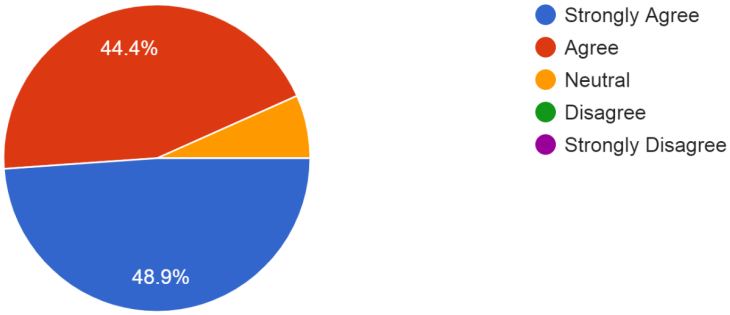
Percentage of Classes Attended

45 responses



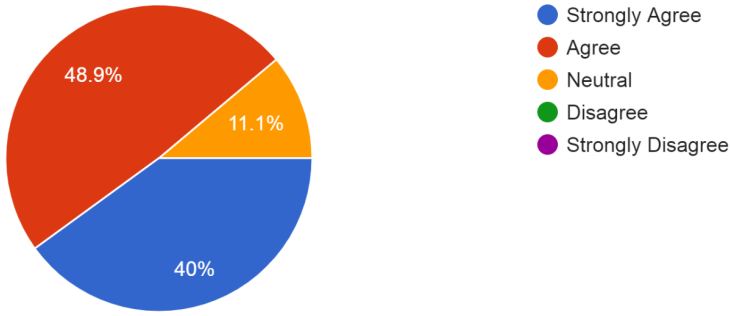
You were able to understand the notion of partially ordered set, lattice, Boolean algebra with applications.

45 responses



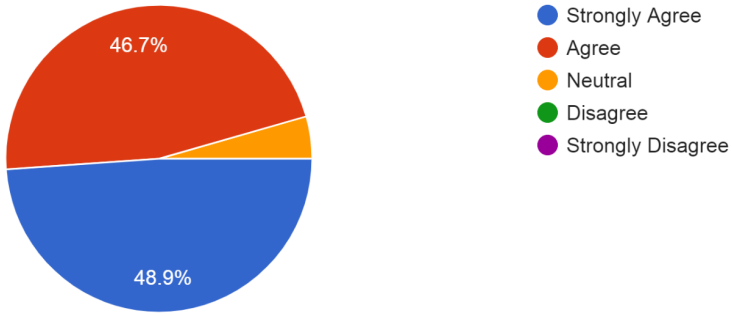
You were able to handle the practical aspect of minimization of switching circuits to a great extent with the methods discussed in this course.

45 responses



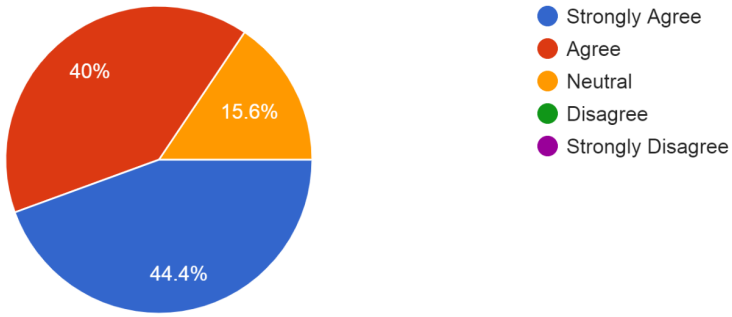
You were able to learn about the knowledge of Boolean algebras to logic.

45 responses



You were able to familiarize with set theory and probability theory.

45 responses



Observations:

From the given responses, it is observed that more than 90% of students strongly agreed and agreed that they understood some basic concepts and terminology of partially ordered sets, ordered isomorphism, Bottom and Top elements, Maximal and Minimal elements, complemented lattice, Relative Complemented lattice and Sectionally Complemented lattice.

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.

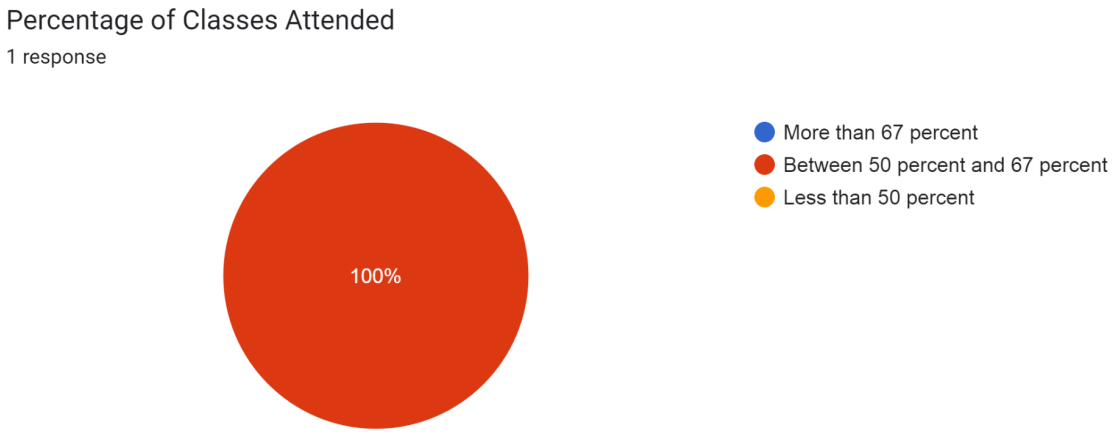
COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Program: B.A. (P) Major

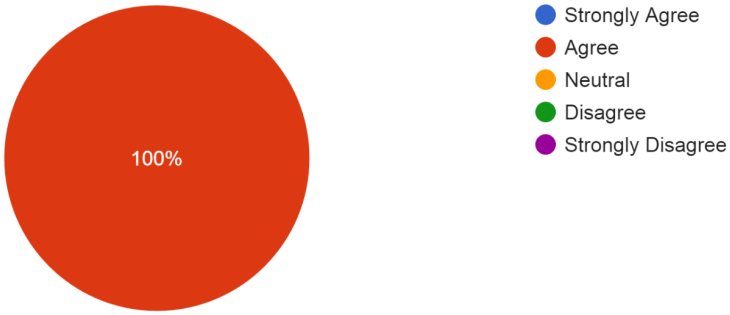
Semester: 3

Paper Name: GE I-Theory of Equations and Symmetries



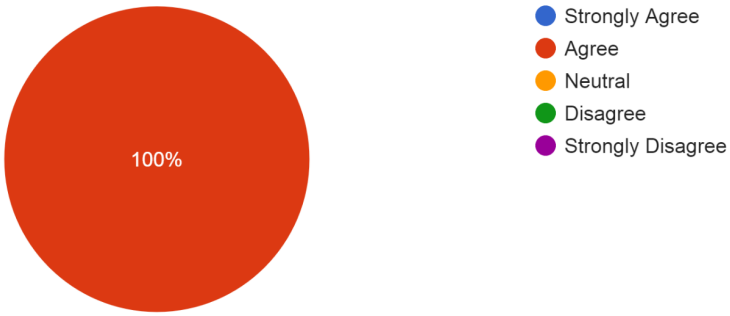
You are able to understand the nature of the roots of polynomial equations and their symmetries.

1 response



You are able to solve cubic and quartic polynomial equations with special condition on roots and in general.

1 response



You were able to find symmetric functions in terms of the elementary symmetric polynomials.

1 response

Observations: From the given responses, it is observed that more than 67 % of students strongly agreed or agreed that they were able to learn the concept of polynomial equations and properties, Cubic equation, Quartic equation and Symmetric Functions.

It is also observed that students need to be motivated to choose this subject.

Action Taken: Measures will be taken to make the subject more interesting to the students to ensure more no. of students takes this subject next time.

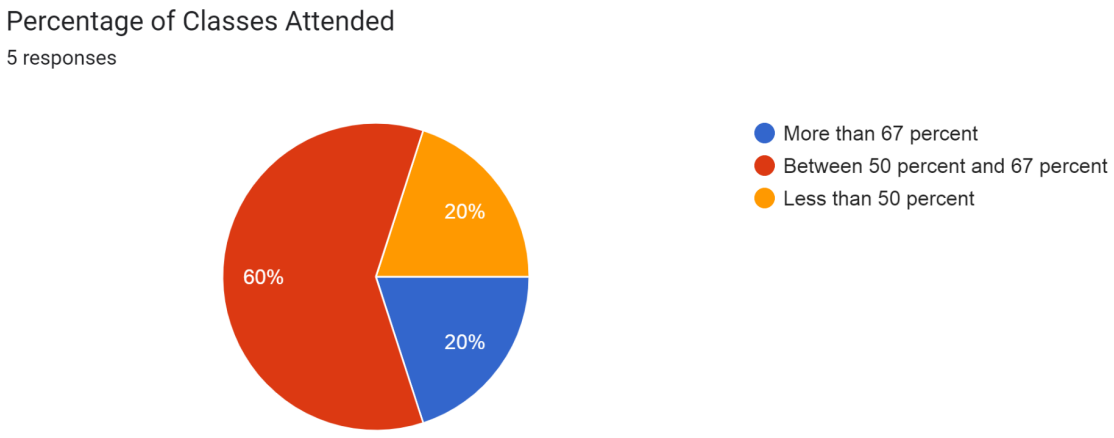
COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Program: B.A. (P) Minor

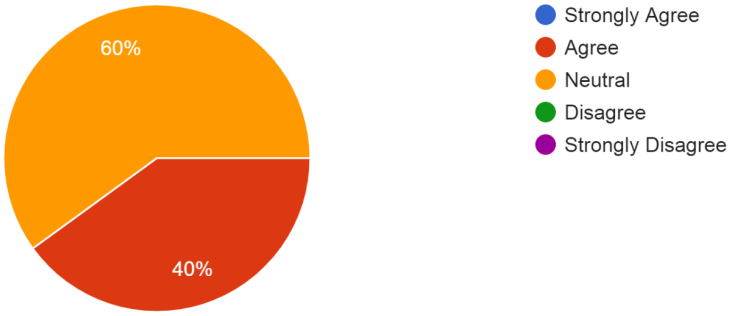
Semester: 3

Paper Name: GE II-Differential Equations



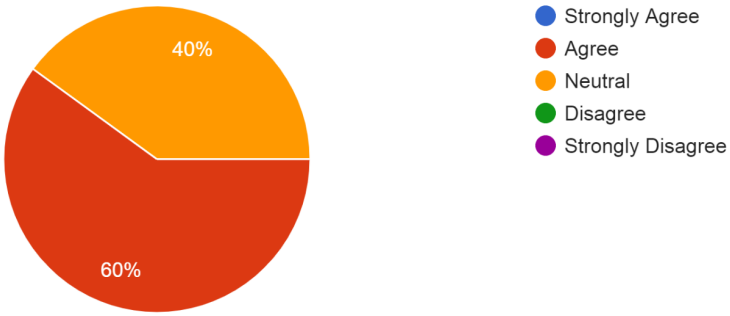
You are able to solve the exact, linear, Bernoulli equations, find orthogonal trajectories and solve rate problems.

5 responses



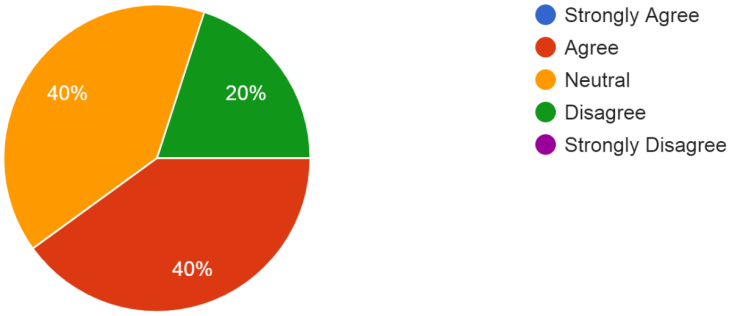
You are able to understand the undetermined coefficients, variation of parameters to solve linear differential equations, Cauchy-Euler equations and System of linear differential equations.

5 responses



You were able to formulate and solve various types of first and second order partial differential equations.

5 responses



Observations: From the given responses, it is observed that more than 46 % of students strongly agreed or agreed that they were able to learn the concept of ordinary differential equations, Explicit methods of solving higher order linear differential equations. Also learn about First and Second order Partial differential equations.

It is also observed that students need to be motivated to attend the course as 20% students had more than 67% of attendance.

Action Taken: Measures will be taken to make the subject more interesting to the students to ensure higher attendance.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Semester-3(NEP-2020)

Year-2

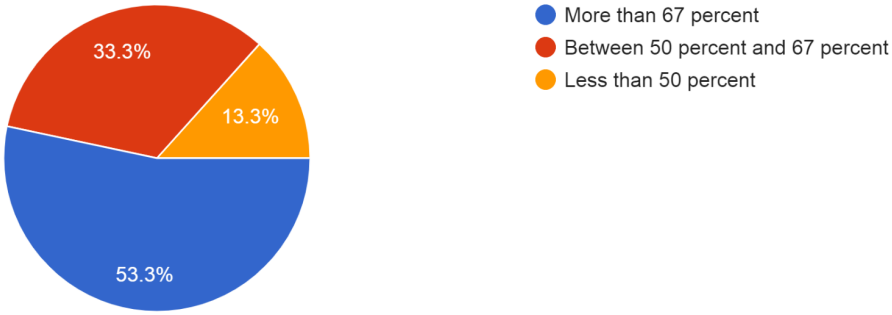
Paper Name: Programming using Python

Paper Type: SEC

UPC: 2346000011

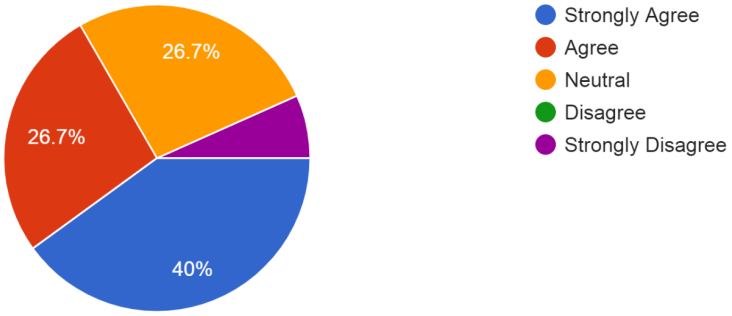
Percentage of Classes Attended

15 responses



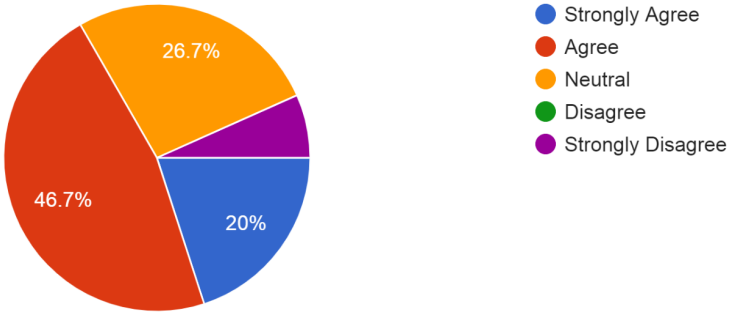
You are able to interpret the basic representation of the data structures and sequential programming .

15 responses



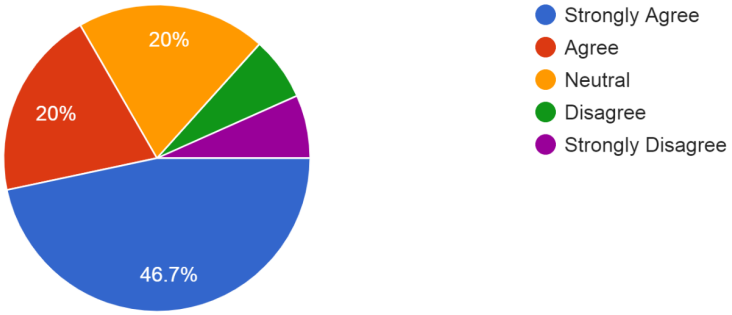
You have gained knowledge and ability to use control framework terminologies.

15 responses



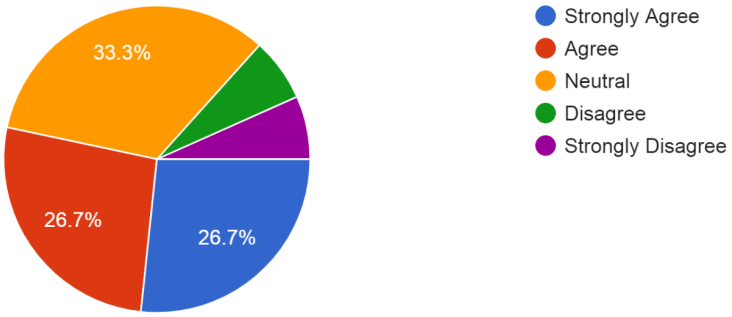
You are able to work out using the core data structures as lists, dictionaries, tuples, and sets

15 responses



You are able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules

15 responses



Observations:

From the given responses, it is observed that more than 55% 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 workout using the core data structure as lists, dictionaries, tuples and sets.

It is also observed that students need to be motivated to attend the course as 53% students had more than 67% of attendance.

Action Taken: Measures will be taken to make the subject more interesting to the students to ensure higher attendance.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

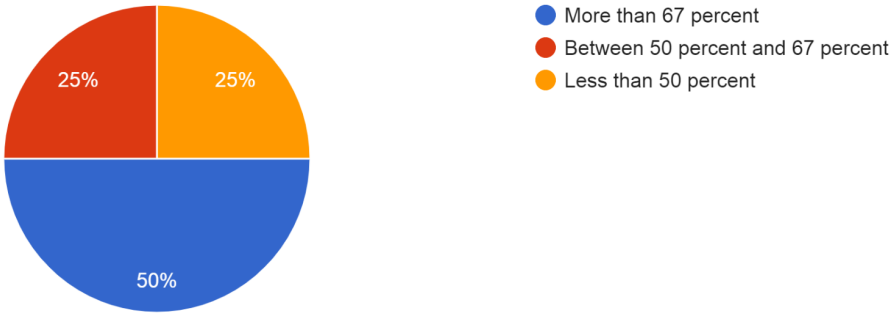
Semester: 3

Paper Name: SEC: Statistics with R

UPC: 2926001005

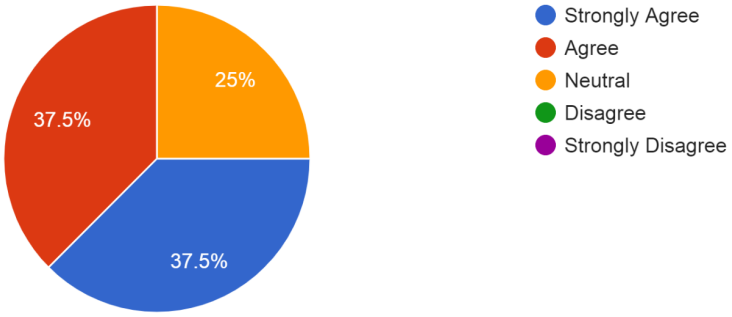
Percentage of Classes Attended

8 responses



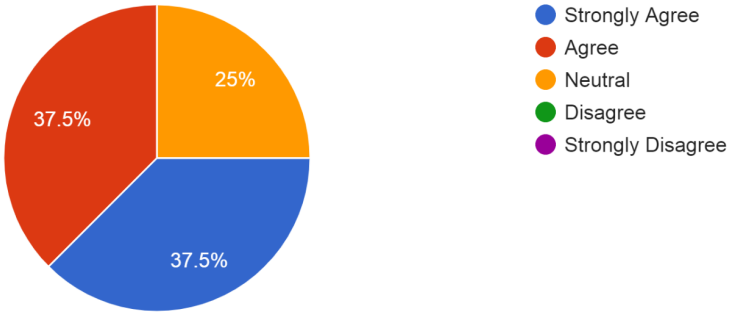
You are able to extract and read data into R, manipulate, and analyse it.

8 responses



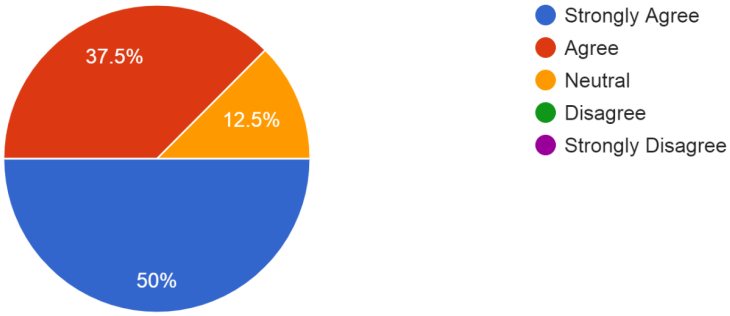
You understood how to debug, organize, and comment R code.

8 responses



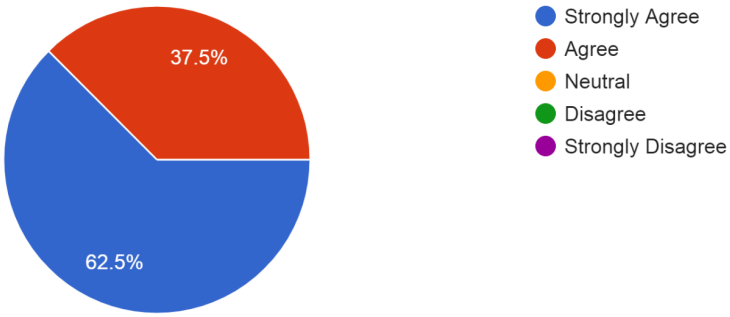
You are able to understand the R environment for downloading, installing, and using packages.

8 responses



You learnt the basic programming to write own functions.

8 responses



Observations:

From the given responses, it is observed that more than 84% of the students strongly agreed and agreed that they are able to extract, read data, manipulate, and analyze data into R and they are able to understand the R environment for downloading, installing, and using packages. Also, they are able to do basic programming to write their own functions. Also, they are able to perform basic statistical operations and regressions.

Actions Taken

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

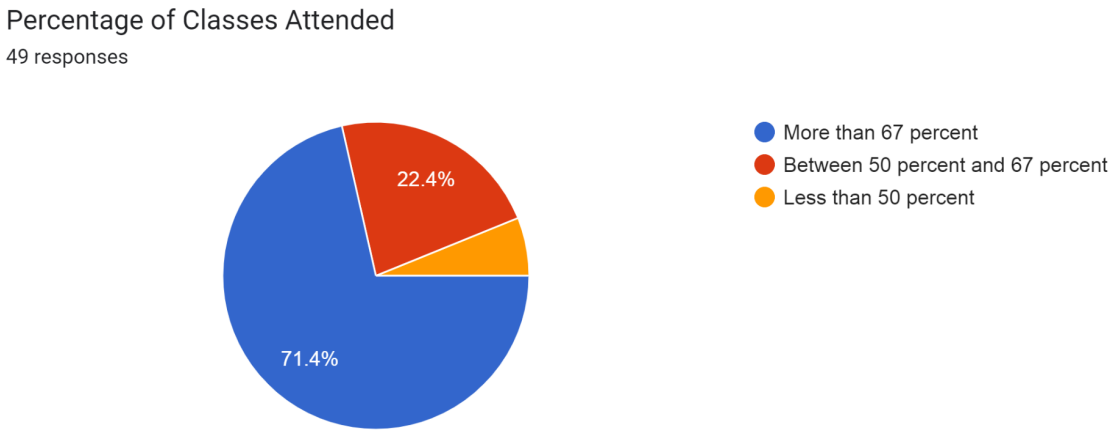
COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Semester-3(NEP-2020), Year-2

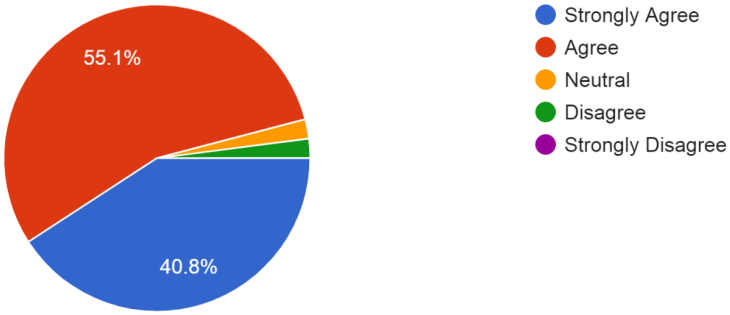
Paper:VAC: Vedic Mathematics I

Paper Code: 6967001020



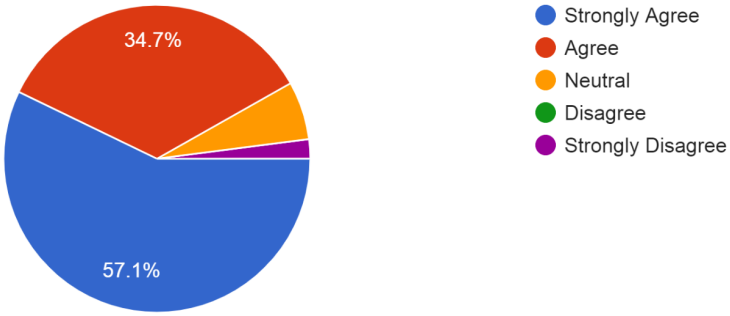
You are familiarized with the mathematical underpinnings and techniques.

49 responses



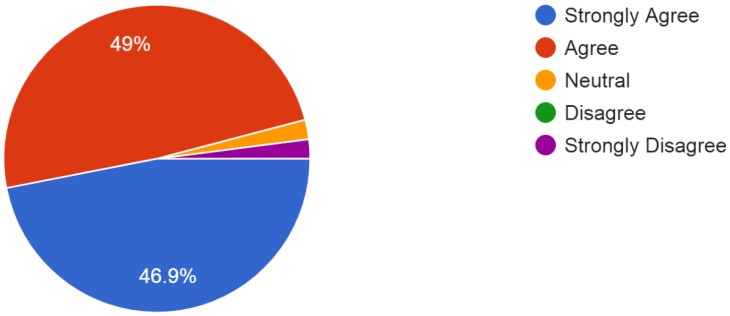
You are able to do basic maths faster and with ease.

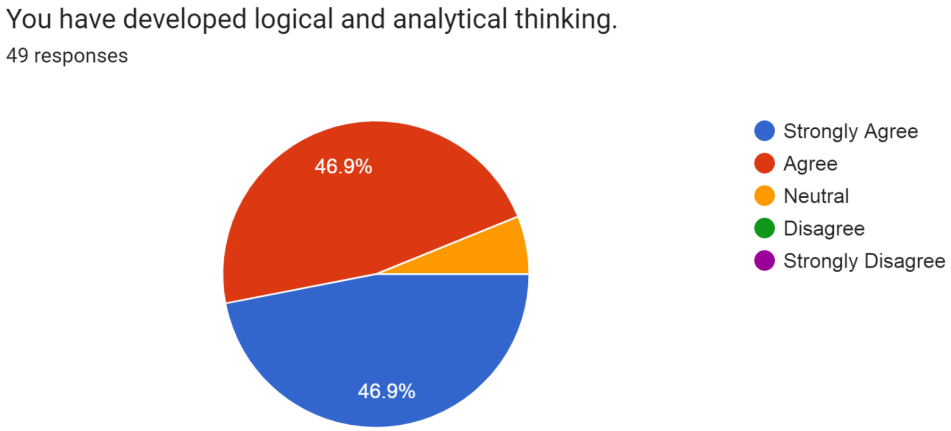
49 responses



You have experienced joyful learning of Mathematics

49 responses





Observations:

From the given responses, it is observed that more than 94% of the students strongly agreed and agreed that they were familiarized with mathematical underpinnings and techniques. They were able to do basic math faster and with ease. About more than 94% students experienced joyful learning of mathematics.

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. Assessments like tests, assignments, and Viva would also be done at regular intervals.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

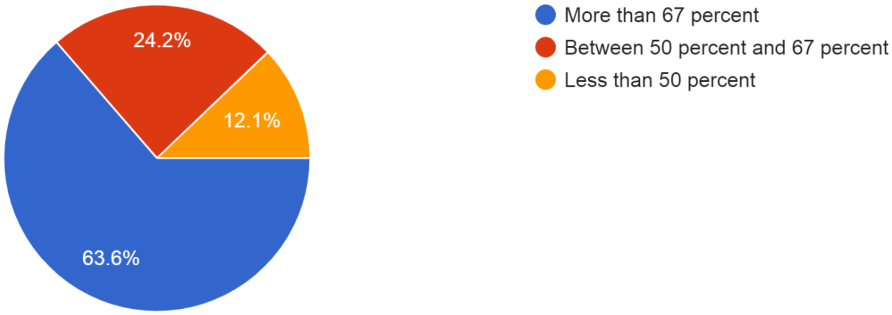
Semester: 3

Paper Name: SEC: IT Skills and Data Analysis-I

UPC: 3126000001

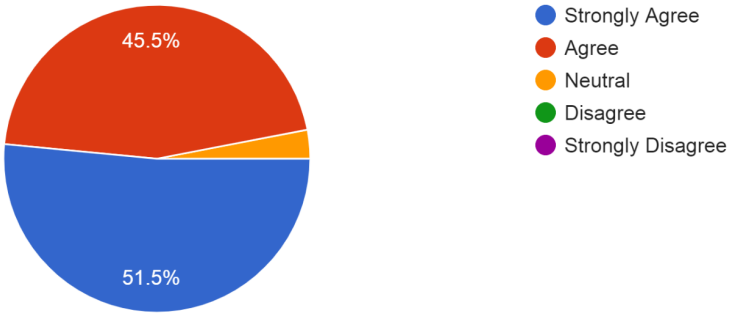
Percentage of Classes Attended

33 responses



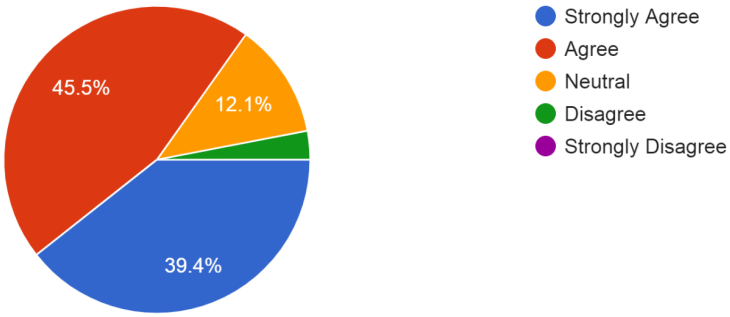
You are able to represent and interpret data in tabular and graphical forms.

33 responses



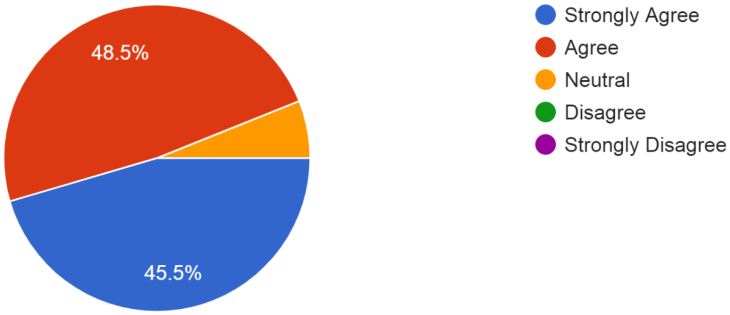
You have understood and can interpret the measures of central tendency and dispersion.

33 responses



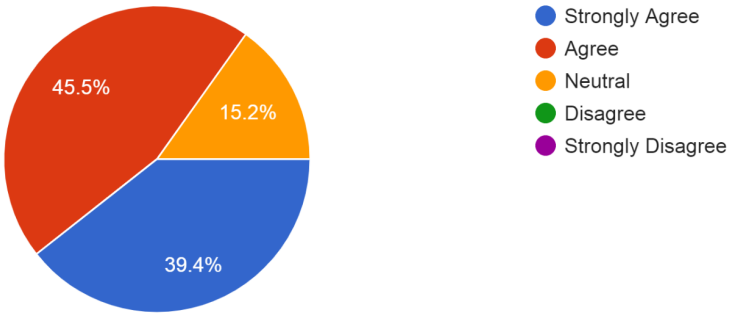
You can use IT tools such as spreadsheets to visualise and analyse data.

33 responses



You are equipped with some fundamental concepts, which play a critical role in understanding and visualizing real world data.

33 responses



Observations:

From the given responses, it is observed that more than 90% of the students strongly agreed and agreed that they were able to represent and interpret data in tabular and graphical forms. About more than 84% understood and can interpret the measures of central tendency and dispersion. They are equipped with some fundamental concepts which play a critical role in understanding and visualizing real world data.

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. Assessments like tests, assignments and internal practicals would also be done at regular intervals.

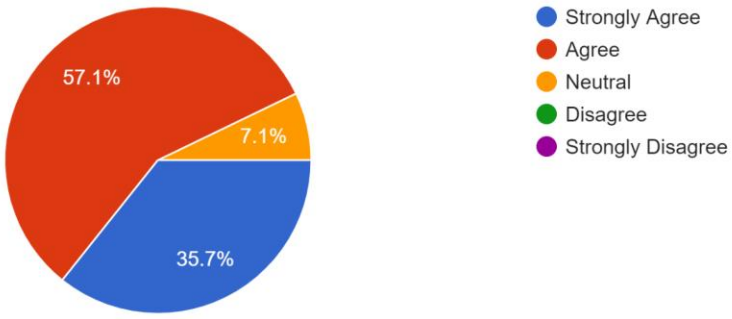
COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.A.(Prog)**

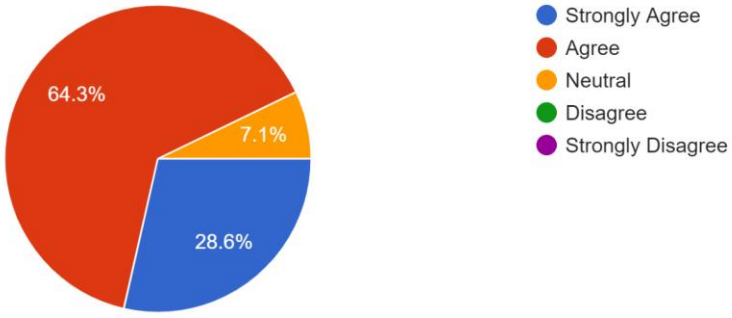
Semester: V

Course 1: DSE-1 (i): Statistics

The course taught you the basic ideas of Probability and Random Variables.
14 responses

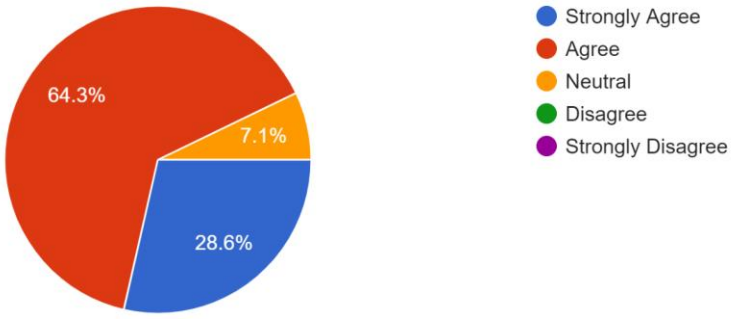


The course helped you to learn the significance of Distribution Functions.
14 responses



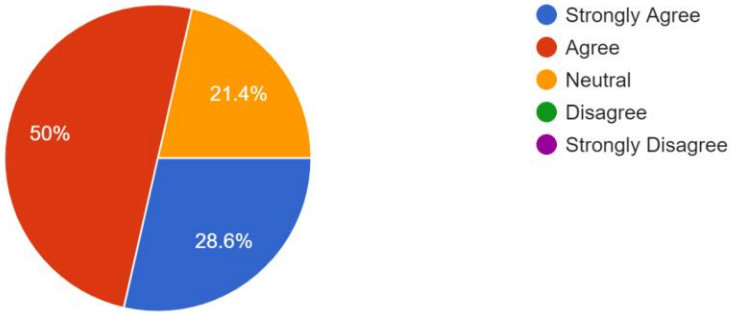
The course helped you to learn about Discrete and Continuous Probability Distributions.

14 responses



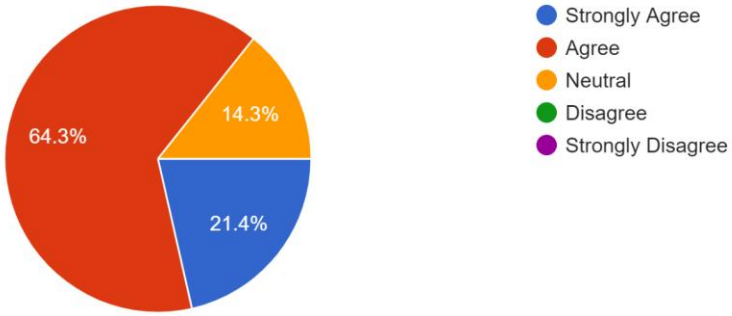
The course helped you to understand the Sampling Distributions

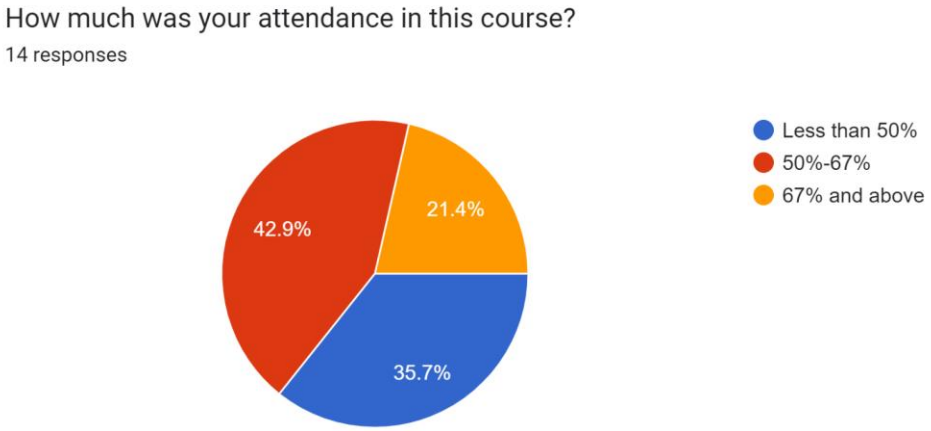
14 responses



The course helped you to learn Chi-square distribution, F distribution and t distribution.

14 responses





Observations:

From the given responses, it is observed that more than 85 %-95% of students strongly agreed and agreed that they have understood the basic concept of Statistics and use of Statistics (Practical and theatrical). They also understood about random variables, distribution functions, probability distributions sampling etc. It is also observed that students had an interest in the paper as about 42.9% 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.

Course Exit Survey: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.Sc.(H) Mathematics**

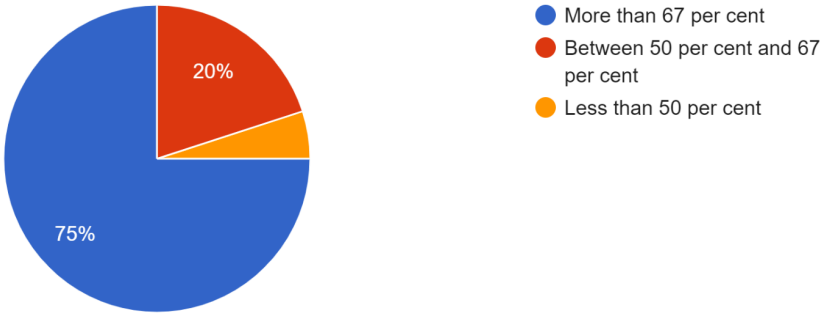
Semester: II

Paper Name: Discipline Specific Core Course – 4: Linear Algebra

UPC: 2352011201

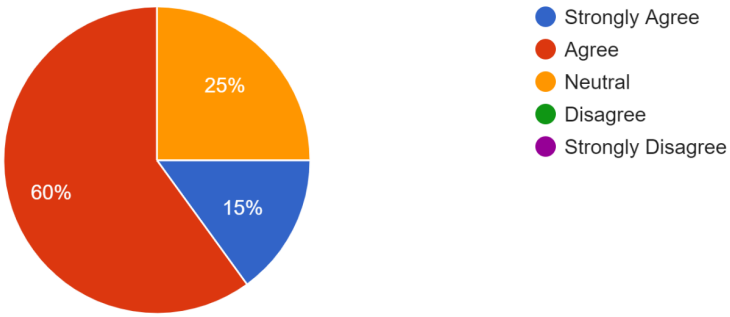
Percentage of classes attended

20 responses



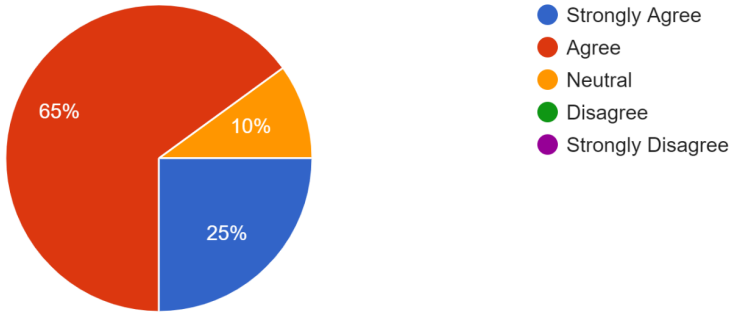
You have learned to visualize the space $RRnn$ in terms of vectors and their interrelation with matrices.

20 responses



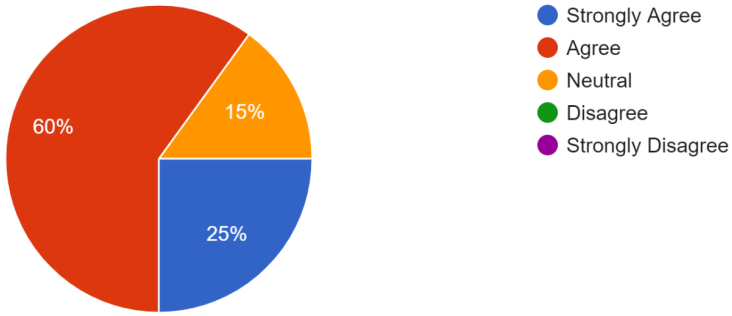
You have familiarized with basic concepts in vector spaces, linear independence and span of vectors over a field.

20 responses



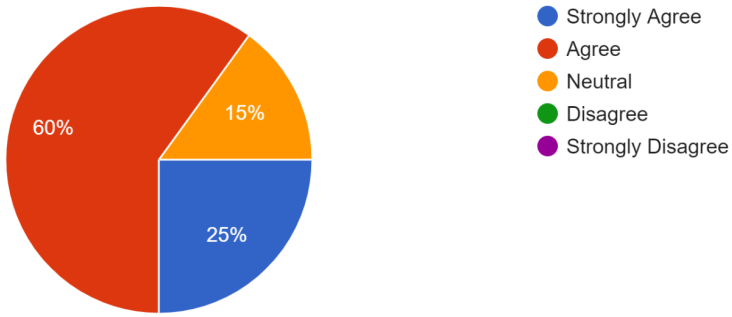
You understood the concept of basis and dimension of a vector space.

20 responses



You have learned the basic concepts of linear transformations and its corresponding matrix.

20 responses



Observations:

From the given responses, it is observed that 60% - 65% students agreed that they learned to visualize the space *Rn* 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 75% of students had more than 67% of attendance.

Action Taken:

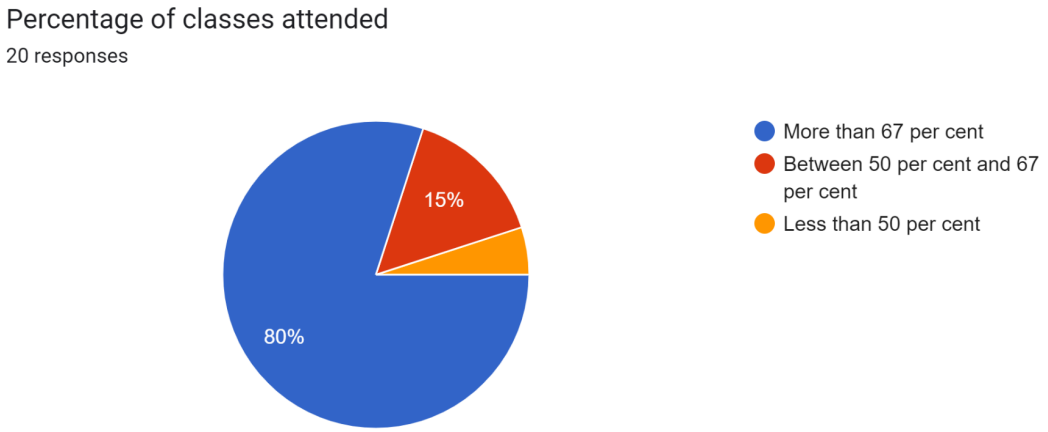
For moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance. Assessments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

Department: Mathematics **Program: B.Sc.(H) Mathematics**

Semester: II

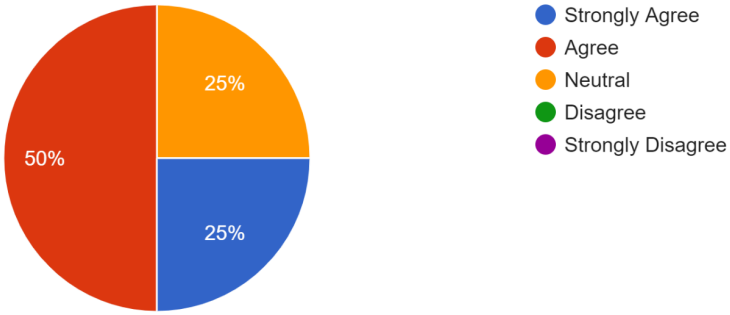
Paper Name: Discipline Specific Core Course – 5: Calculus

UPC: 2352011202



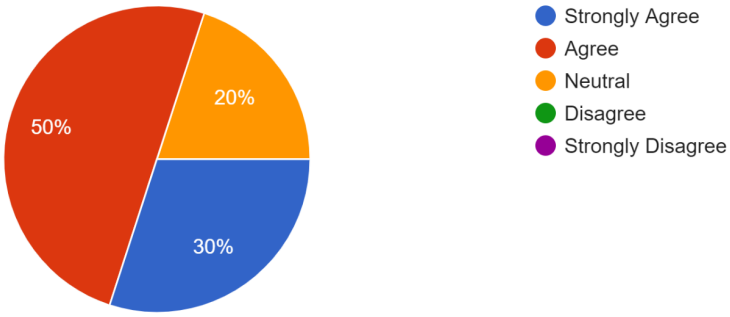
You understood the notion of limits, continuity and uniform continuity of functions.

20 responses



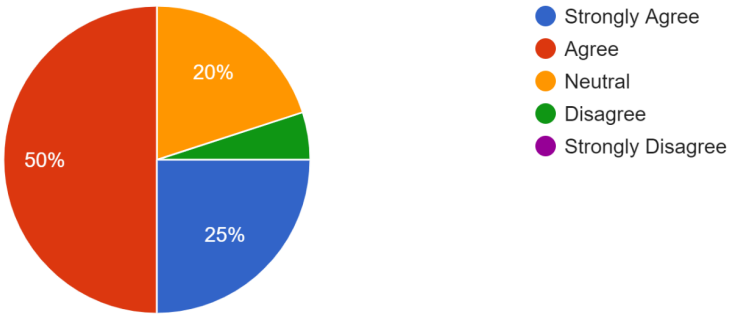
You have learned the geometrical properties of continuous functions on closed and bounded intervals.

20 responses



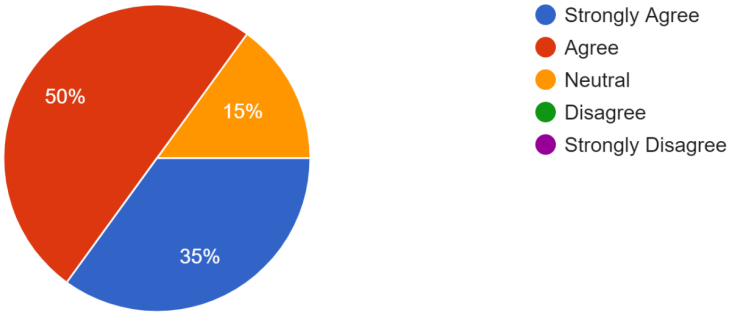
You understood the applications of derivative, relative extrema and mean value theorems.

20 responses



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

20 responses



Observations:

From the given responses, it is observed that around 50% 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 80% 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.

Department: Mathematics **Program: B.Sc.(H) Mathematics**

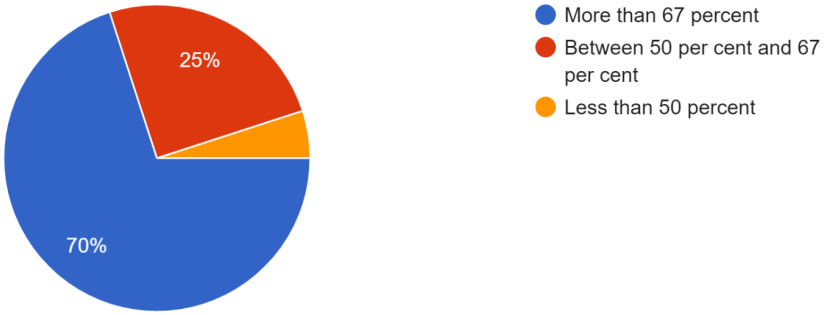
Semester: II

Paper Name: Discipline Specific Core Course – 6: Ordinary Differential Equations

UPC: 2352011203

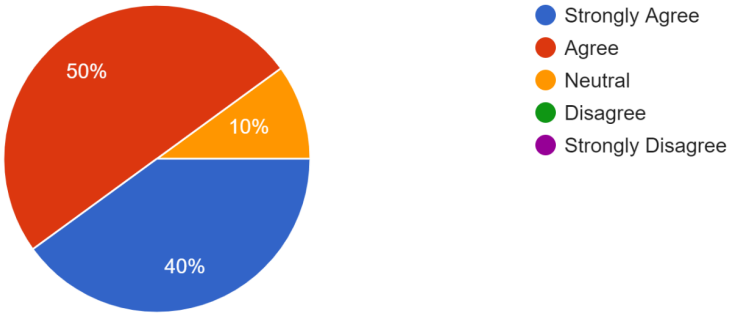
Percentage of classes attended

20 responses



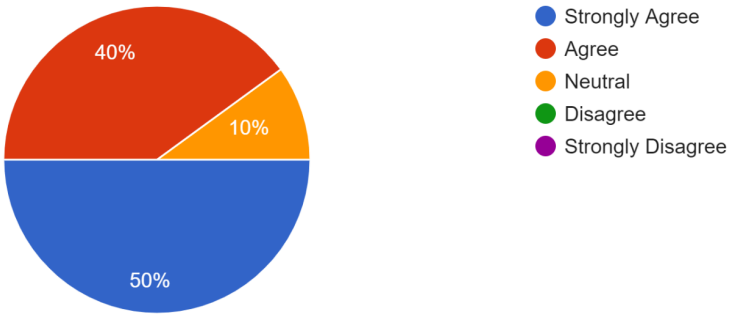
You understood the basics of differential equations and compartmental models.

20 responses



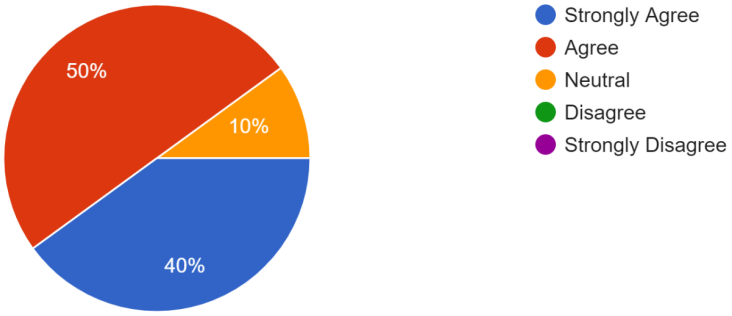
You have learned to formulate differential equations for various mathematical models.

20 responses



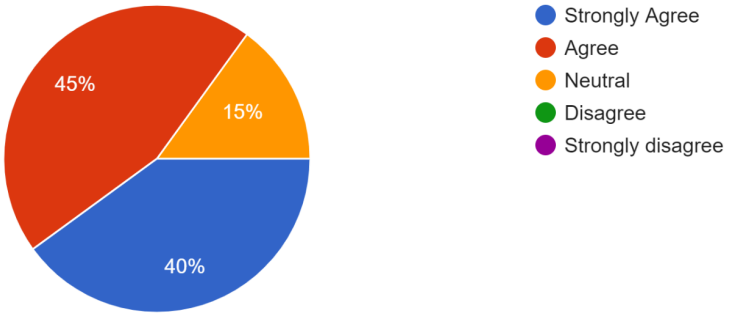
You learned to solve first order non-linear differential equations, linear differential equations of higher order and system of linear differential equations using various techniques.

20 responses



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

20 responses



Observations:

From the given responses, it is observed that around 50% 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 70% 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.

Course Exit Survey: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.A.(Prog.)**

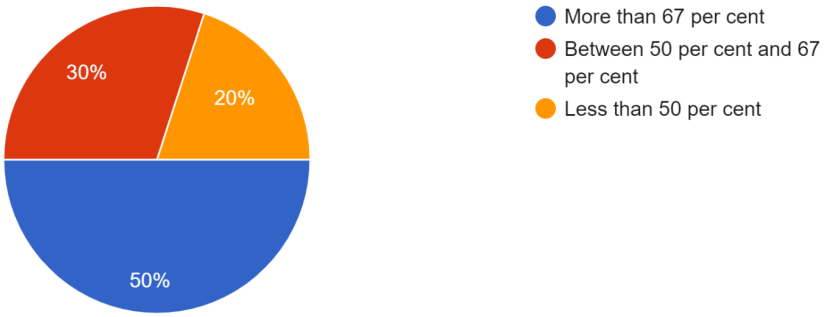
Semester: II

Paper Name: Discipline Specific Core Course – 2:Elementary Linear Algebra

UPC: 2352571201

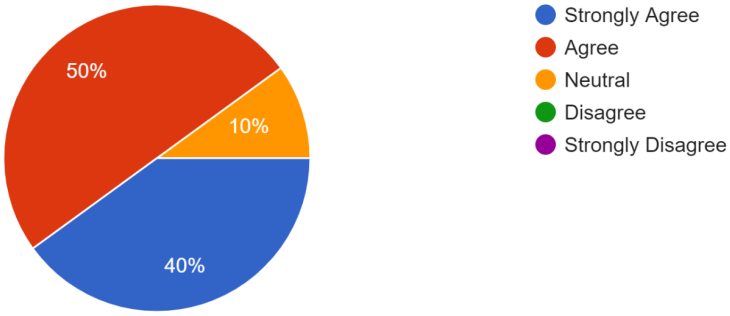
Percentage of classes attended

10 responses



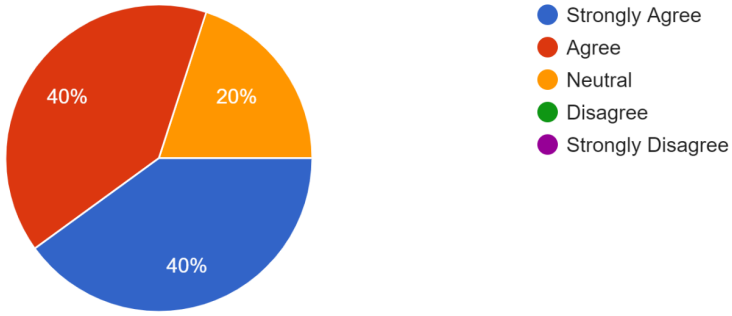
You have learned to visualize the space $RRnn$ in terms of vectors and their interrelation with matrices.

10 responses



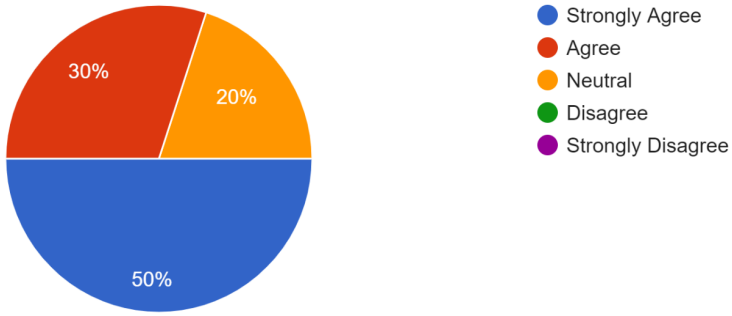
You have familiarized with basic concepts in vector spaces, linear independence and span of vectors over a field.

10 responses



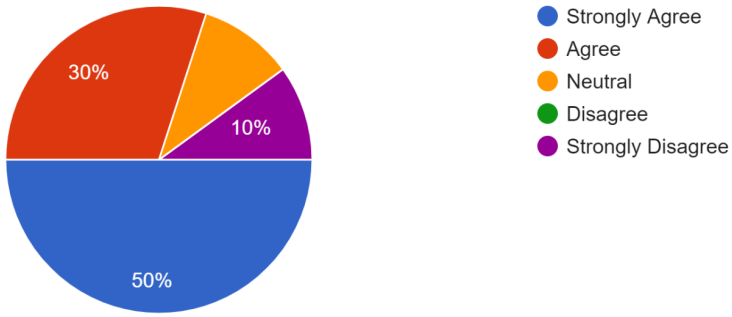
You understood the concept of basis and dimension of a vector space.

10 responses



You have learned the basic concepts of linear transformations and its corresponding matrix.

10 responses



Observations:

From the given responses, it is observed that 50% students agreed that they have learned to visualize the space Rn in terms of vectors and their interaction with matrices. About 40% of the students strongly agree that they are familiarized with basic concepts in vector spaces,linearly independent and the span of vectors over a field. Mostly agree that they understood the concept of basis and dimension of vector space.

Action Taken:

For moderate responses, topics will be discussed more with the students in tutorials. 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.

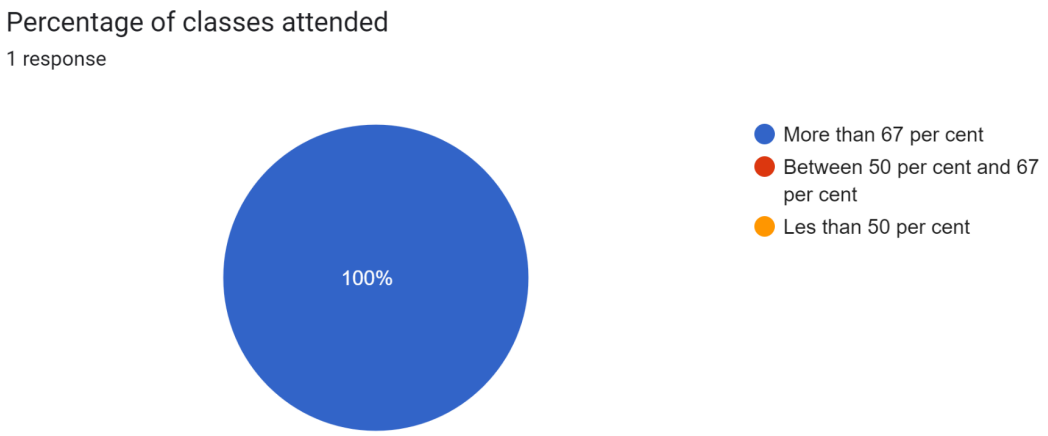
Course Exit Survey: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.A.(Prog.)**

Semester: II

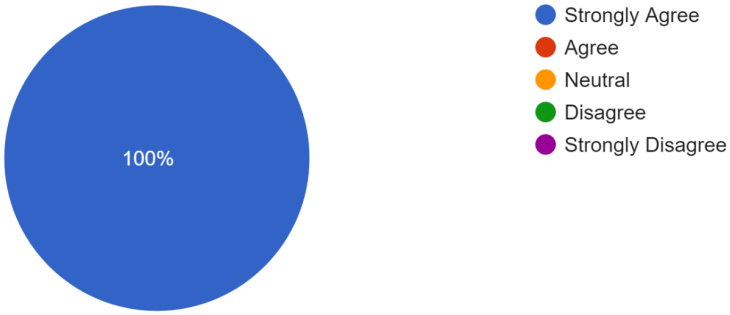
Paper Name: Discipline Specific Core Course – 2:Analytic Geometry

UPC: 2352201202



You have learnt the concepts in two-dimensional geometry.

1 response

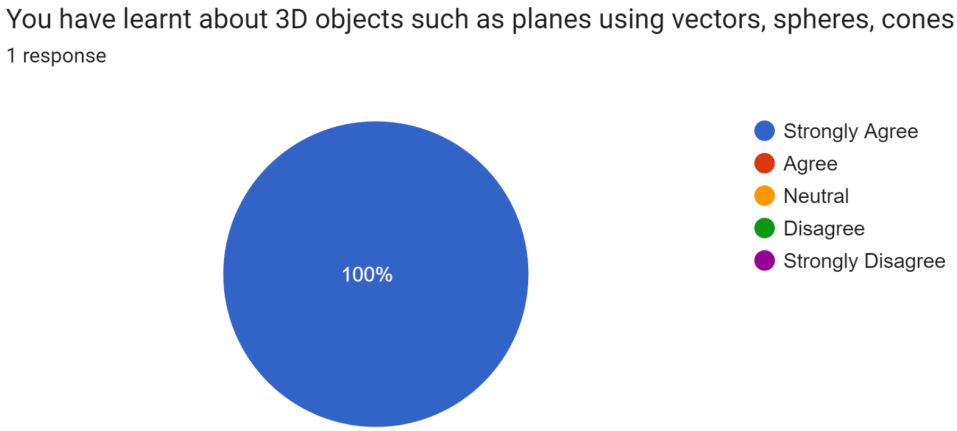


You have learnt to identify and sketch conics namely ellipse, parabola and hyperbola.

1 response

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

1 response



Observations:

This paper was opted by only one student.

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.

COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics

Course: All Courses (NEP-2020)

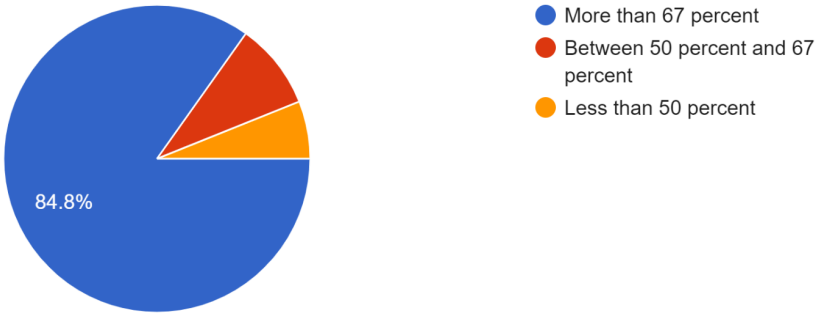
Semester-2 ,Year-1

Paper:VAC: Vedic Mathematics I

Paper Code: 6967001020

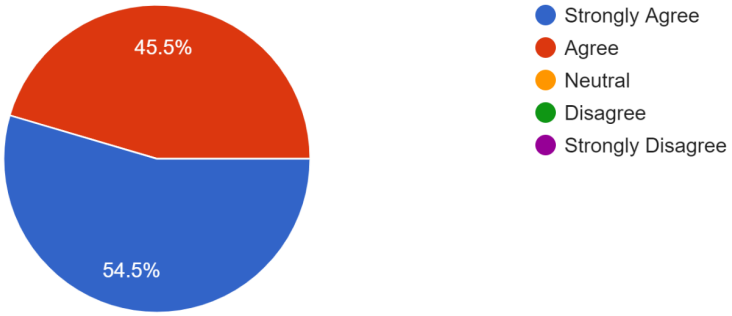
Percentage of Classes Attended

33 responses



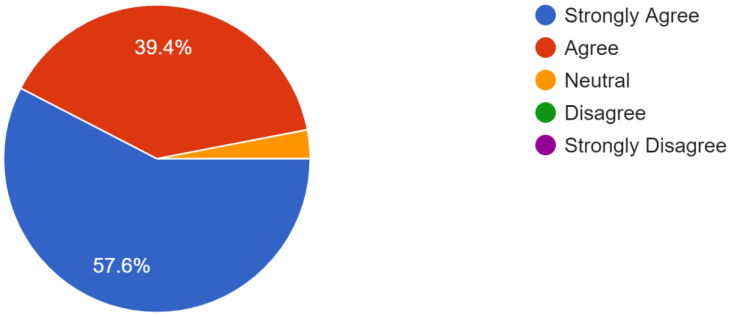
You are familiarized with the mathematical underpinnings and techniques.

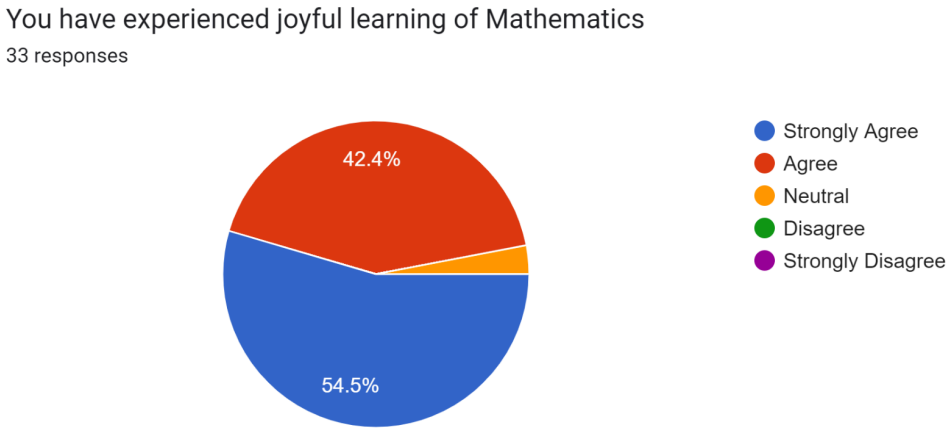
33 responses

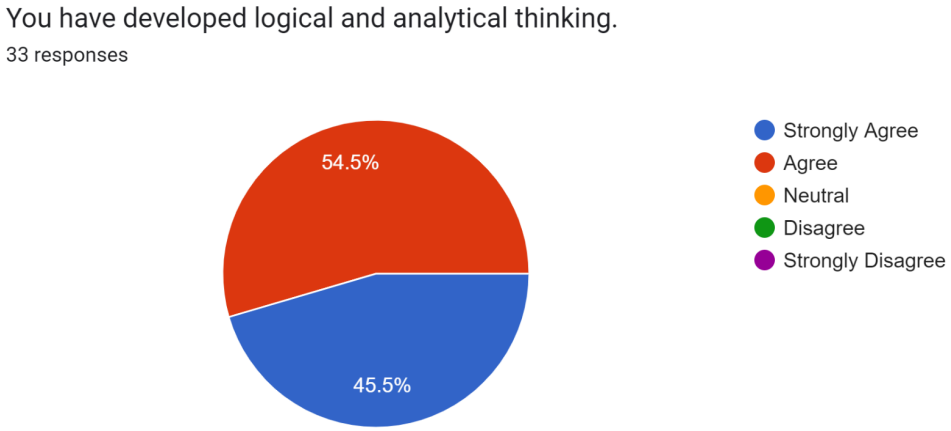


You are able to do basic maths faster and with ease.

33 responses







Observations:

From the given responses, it is observed that 90-99% of the students strongly agreed and agreed that they were familiarized with mathematical underpinnings and techniques. They were able to do basic maths faster and with ease. About 95 - 96% students experienced joyful learning of mathematics.

Actions Taken

The response to this paper has been encouraging. More efforts will be made to keep students intrigued. Assessments like tests, assignments, and Viva would also be done at regular intervals.

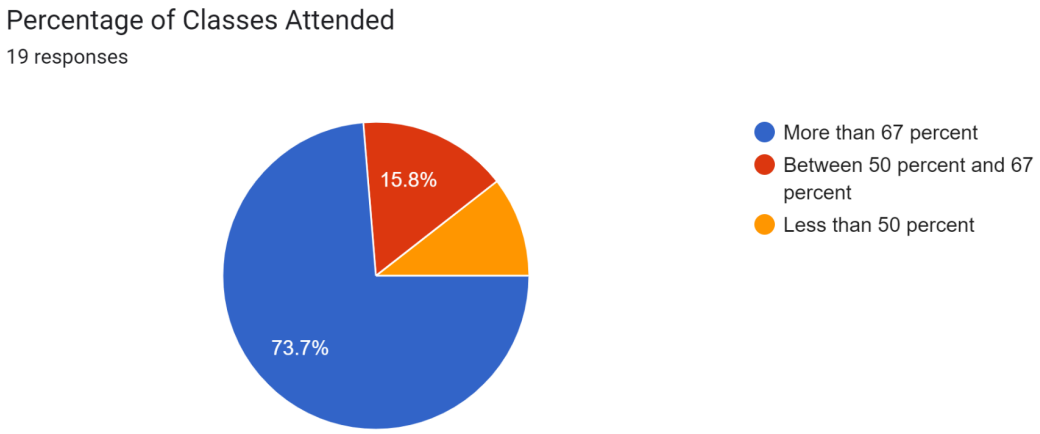
Course Exit Survey: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: All Courses**

Semester: II

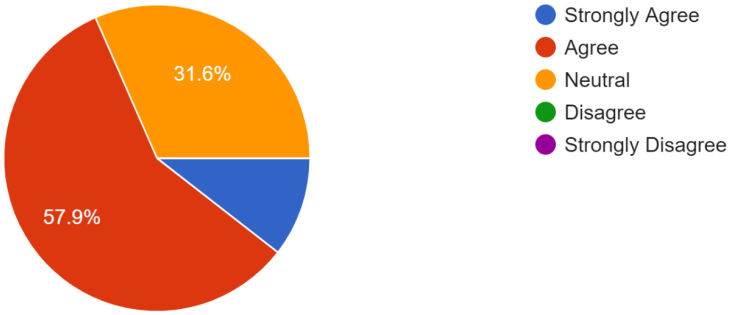
Paper Name: VAC- Vedic Mathematics II

UPC: 6967006001



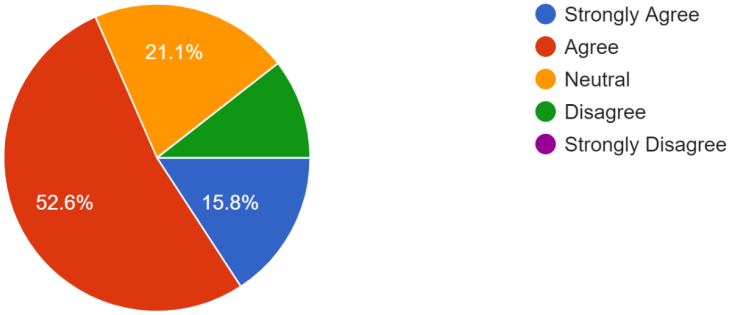
You are able to find the mathematical solution of algebraic expressions.

19 responses



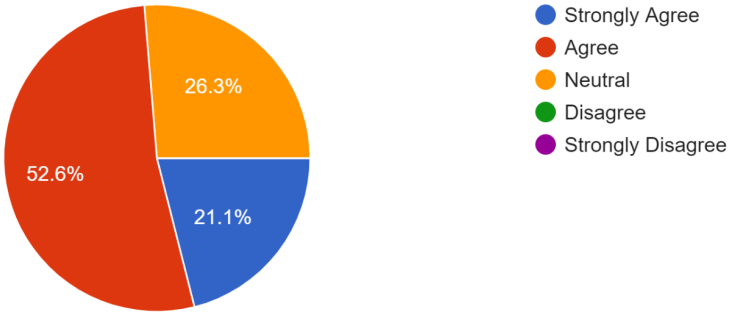
You are able to do basic maths faster and with ease.

19 responses



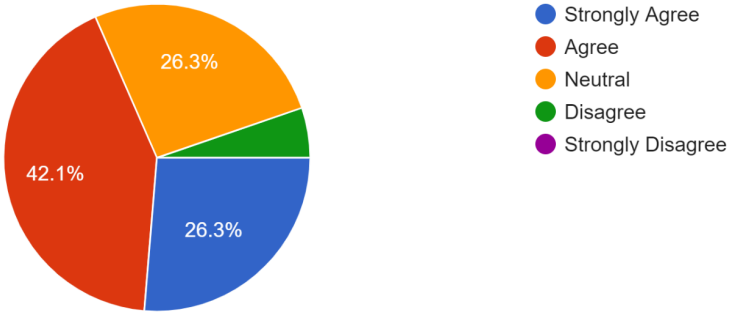
You are able to solve system of linear equations and matrices faster and with ease.

19 responses



You have developed logical and analytical thinking.

19 responses



Observations:

From the given responses, it is observed that 50% -60% students agreed that they are able to solve systems of linear equations & matrices faster and with ease. Also they have learnt to do basic maths faster.

Action Taken:

For moderate responses, topics will be discussed more with the students . Measures will be taken to make the subject more engaging and appealing to the students to ensure higher attendance.

Course Exit Survey: Analysis Report
Academic Session: 2023-24

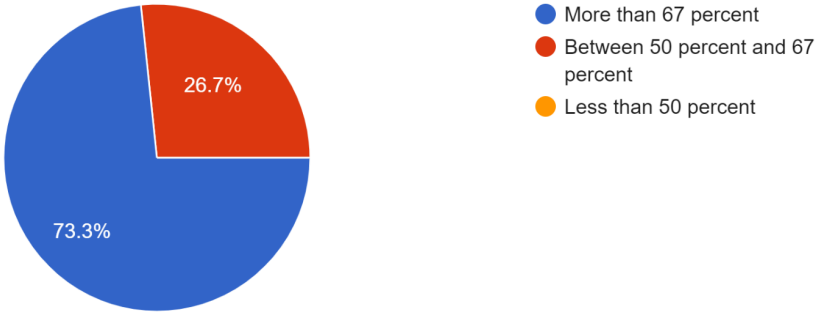
Department: Mathematics **Program: All Courses**

Semester: II

Paper Name: SEC- IT Skills & Data Analysis 1

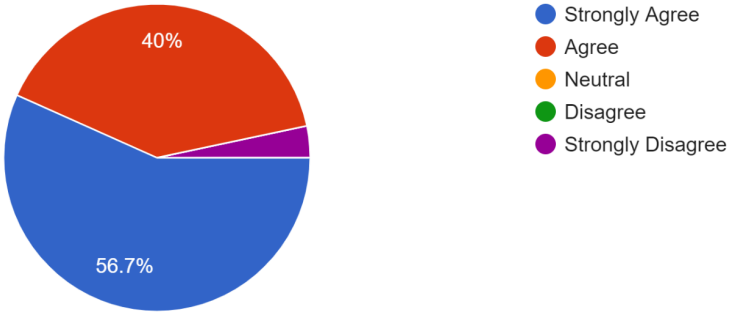
Percentage of Classes Attended

30 responses



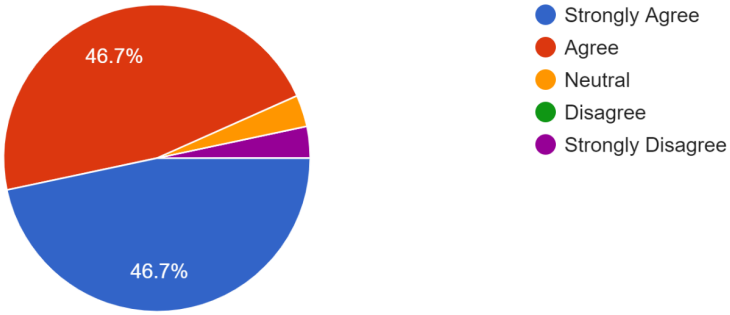
You are able to represent and interpret data in tabular and graphical forms.

30 responses



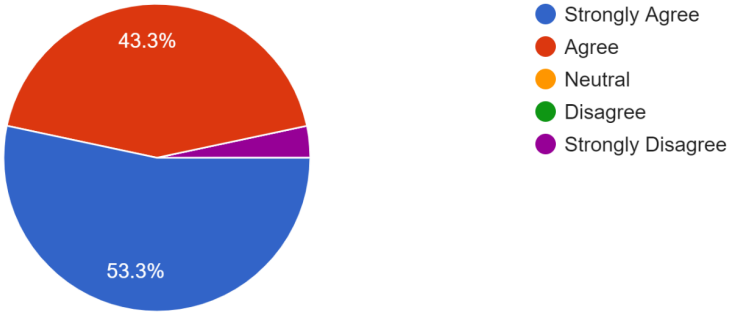
You have understood and can interpret the measures of central tendency and dispersion.

30 responses



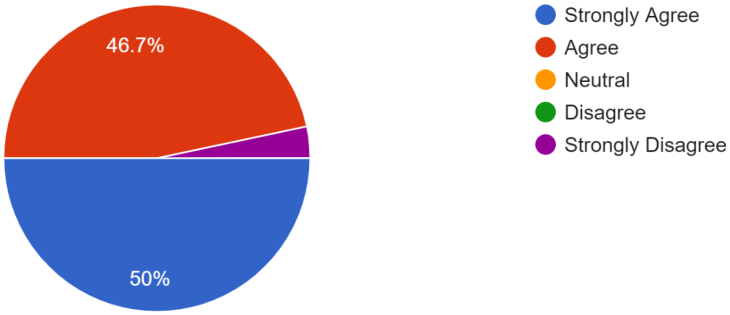
You can use IT tools such as spreadsheets to visualise and analyse data.

30 responses



You are equipped with some fundamental concepts, which play a critical role in understanding and visualizing real world data.

30 responses



Observations:

From the given responses, it is observed that 50%- 60% students agreed that they are able to represent and interpret data in tabular and graphical forms. They have understood and can interpret the measures of central tendency and dispersion.

Action Taken:

For moderate responses, topics will be discussed more with the students. Measures will be taken to make the subject more engaging and appealing to the students .

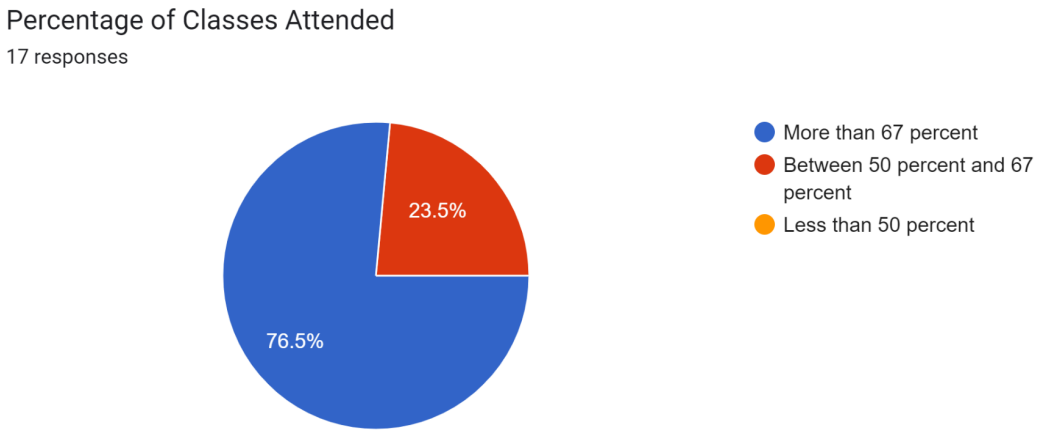
Course Exit Survey: Analysis Report

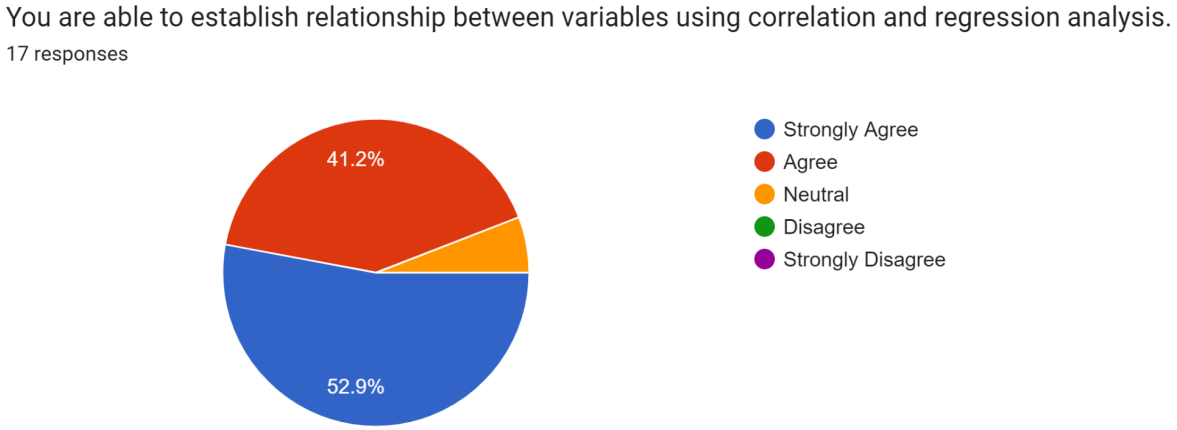
Academic Session: 2023-24

Department: Mathematics **Program: All Courses**

Semester: II

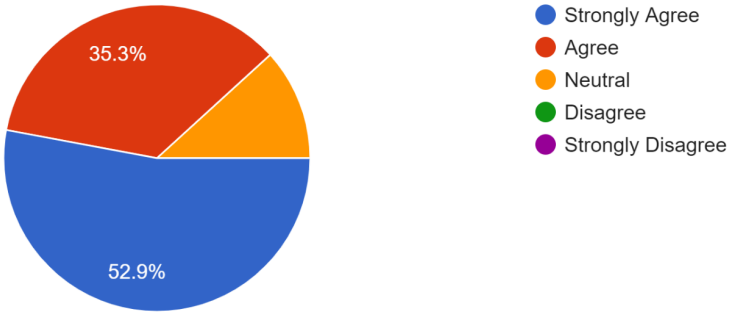
Paper Name: SEC- IT Skills & Data Analysis II





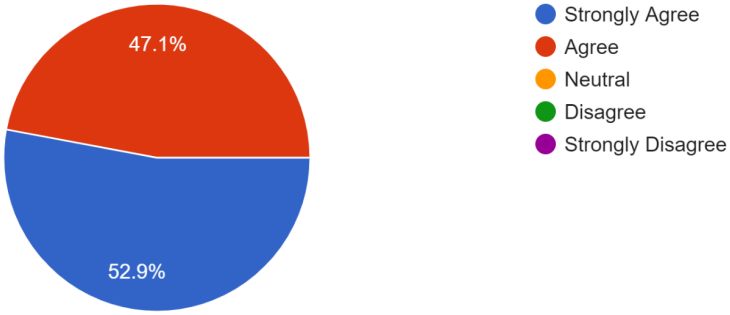
You are able to visualize functions.

17 responses



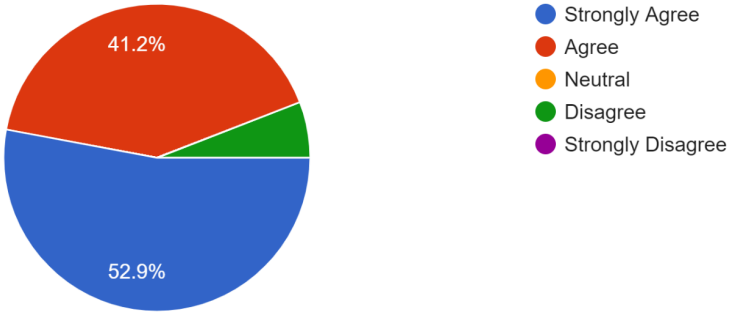
You can use IT tools such as spreadsheets to visualise and analyse data.

17 responses



You can differentiate between linear and non-linear functions.

17 responses



Observations:

From the given responses, it is observed that 50%- 60% students agreed that they can establish relationships between variables using correlation and regression analysis. They can use IT tools such as spreadsheets to visualize and analyze data

Action Taken:

For moderate responses, topics will be discussed more with the students. Measures will be taken to make the subject more engaging and appealing to the students .

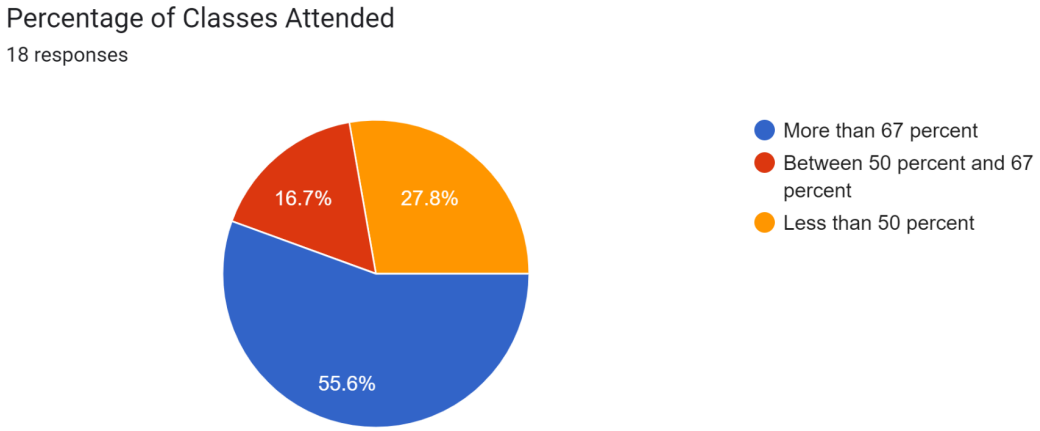
Course Exit Survey: Analysis Report

Academic Session: 2023-24

Department: Mathematics **Program: All Courses**

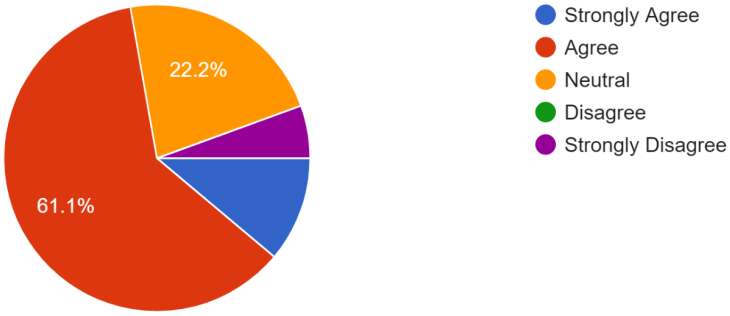
Semester: II

Paper Name: SEC- Programming Using Python



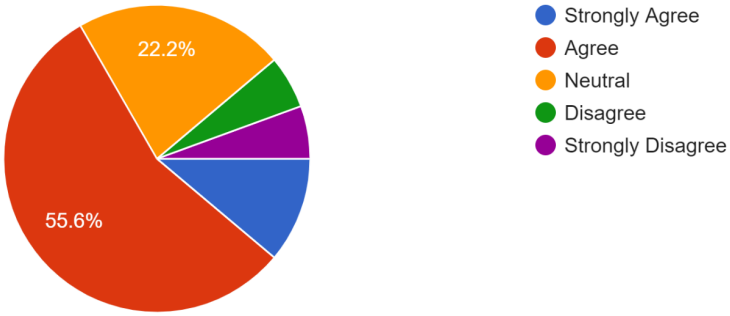
You are able to interpret the basic representation of the data structures and sequential programming .

18 responses



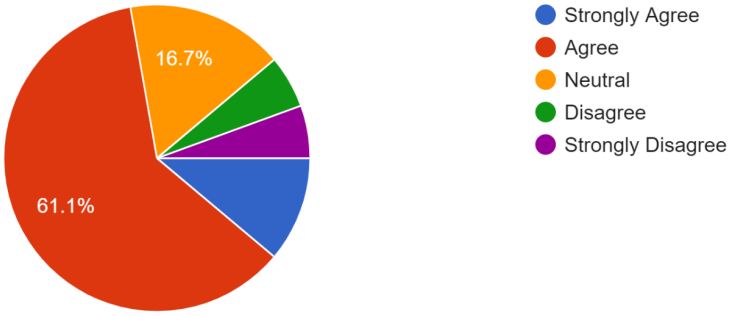
You have gained knowledge and ability to use control framework terminologies.

18 responses



You are able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules

18 responses



Observations:

From the given responses, it is observed that 55%- 65% students agreed that they are able to interpret the basic representation of the data structures and sequential programming. They have gained knowledge and ability to use control framework terminologies.

Action Taken:

For moderate responses, topics will be discussed more with the students. Measures will be taken to make the subject more engaging and appealing to the students .

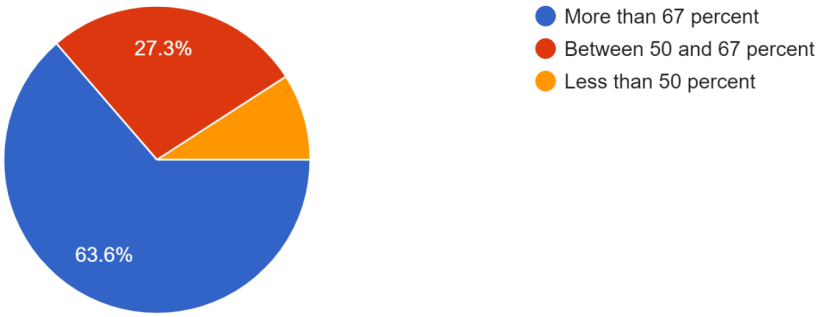
Course Exit Survey: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: All Courses**

Semester: II **Paper Name: GE 2 : Introduction to Linear Algebra**

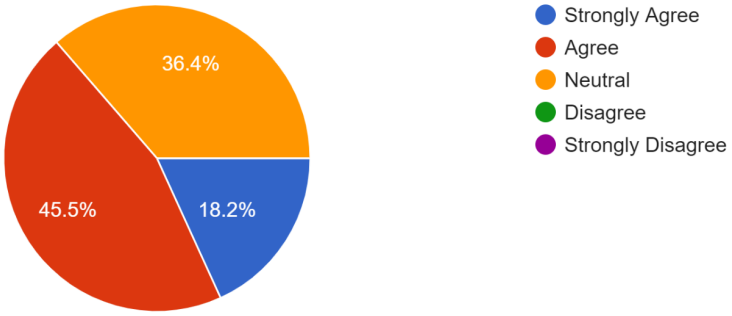
Percentage of classes attended in this course

11 responses



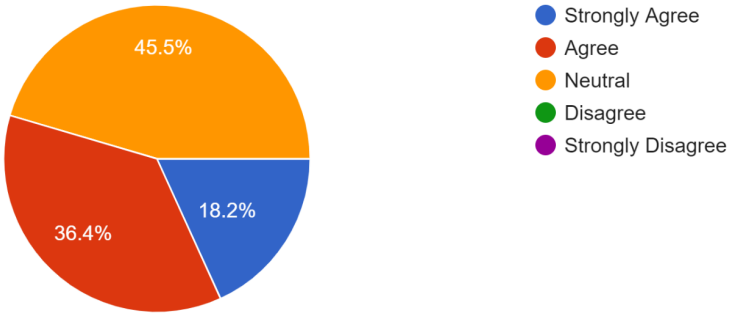
You were able to visualize the space R^n in terms of vectors and the interrelation of vectors with matrices.

11 responses



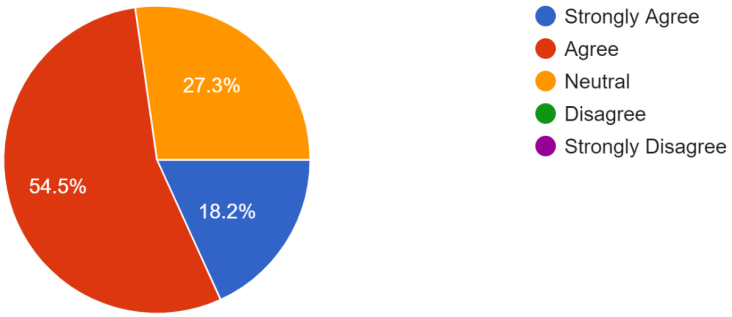
You understood concepts in vector spaces, namely, basis, dimension and minimal spanning sets.

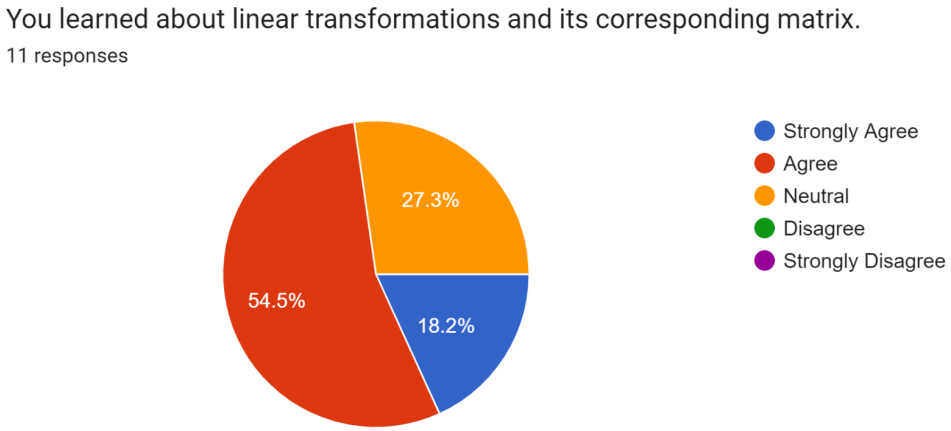
11 responses



You learned about linear transformations and its corresponding matrix.

11 responses





Observations:

From the given responses, it is observed that 60% - 65% students agreed that they learned to visualize the space *Rn* 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.

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.

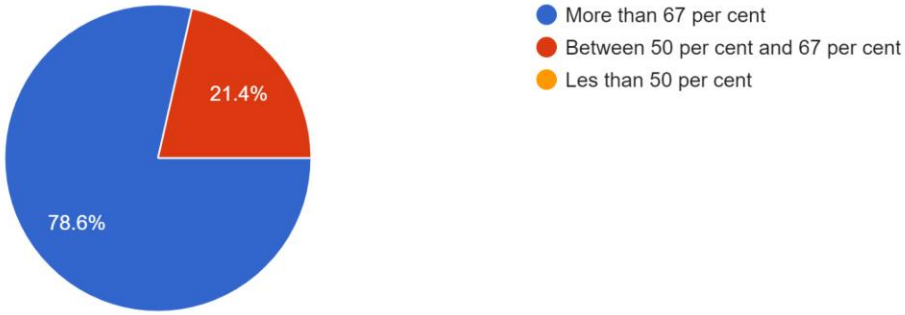
COURSE EXIT SURVEY: Analysis Report
Academic Session: 2023-24

Department: Mathematics **Program: B.Sc.(H) Mathematics**

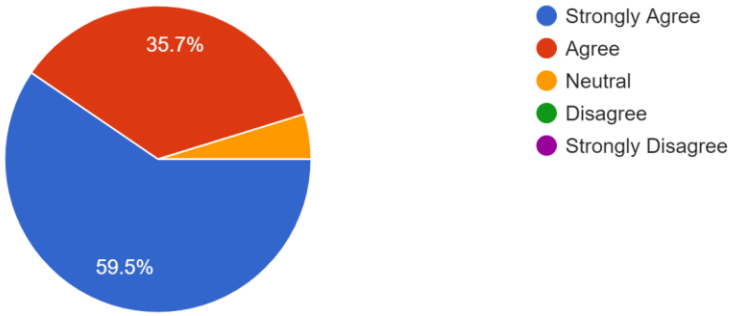
Semester: IV

1. **DSC 10: SEQUENCES AND SERIES OF FUNCTIONS**

Percentage of classes attended
42 responses

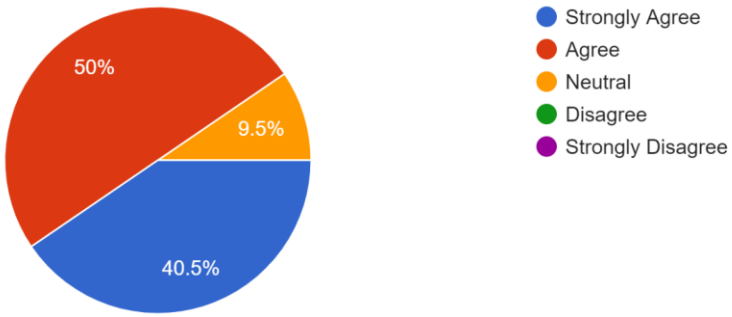


You have learned Cauchy criterion for uniform convergence and Weierstrass M-test for uniform convergence of series of real-valued functions.
42 responses



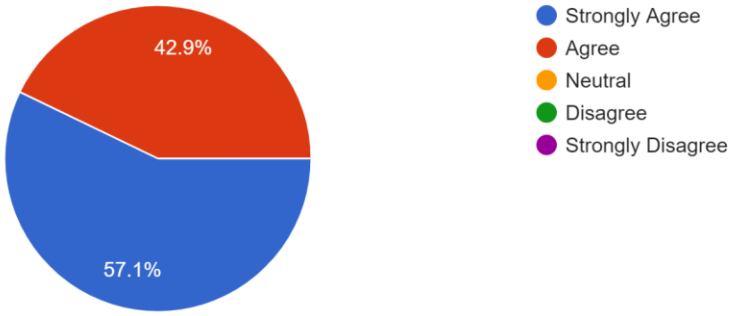
You have learned about the constraints for the inter-changeability of differentiation, and integration with infinite sum of a series of functions.

42 responses



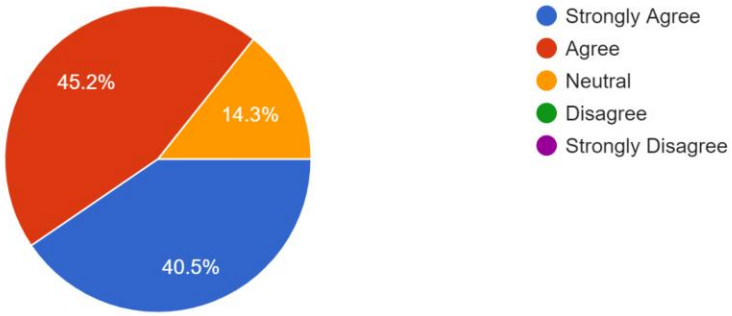
You have understood the convergence of power series and properties of the limit function, including differentiation and integration of power series.

42 responses



You have learned about appreciate utility of polynomials in the space of continuous functions.

42 responses



Observations:

From the given responses, it is observed that around 93% of students strongly agreed and agreed that they got an understanding the Cauchy criterion for uniform convergence and Weierstrass M-test for uniform convergence of series of real-valued functions, maximization and minimization of multivariable functions, inter-relationship amongst the line integral, double, and triple integral formulations and Green's, Stokes' and Gauss divergence theorems, and learn applications.It is also observed that students had keen interest in the paper as 79% of students had more than 67% of attendance.

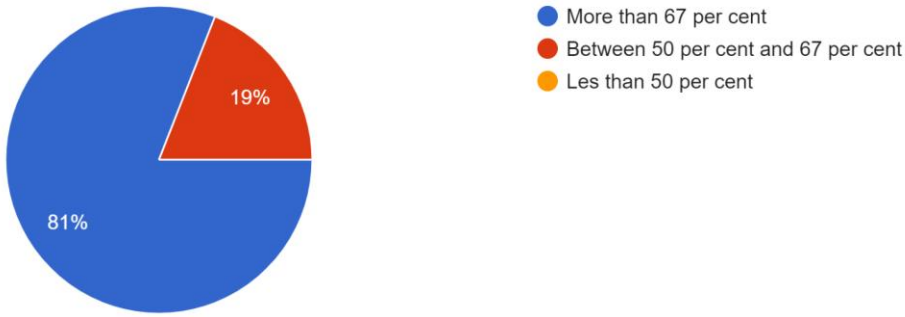
Action Taken:

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

DSE12: NUMERICAL ANALYSIS

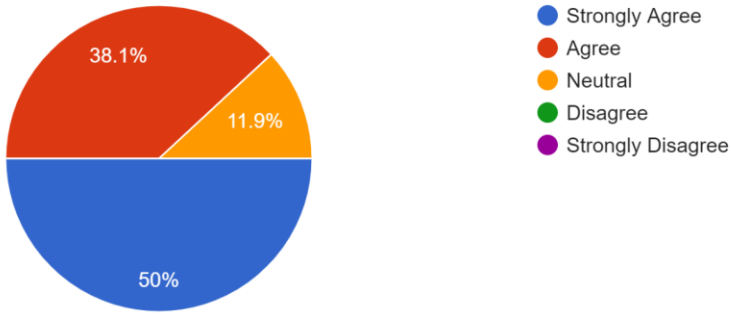
Percentage of classes attended

42 responses



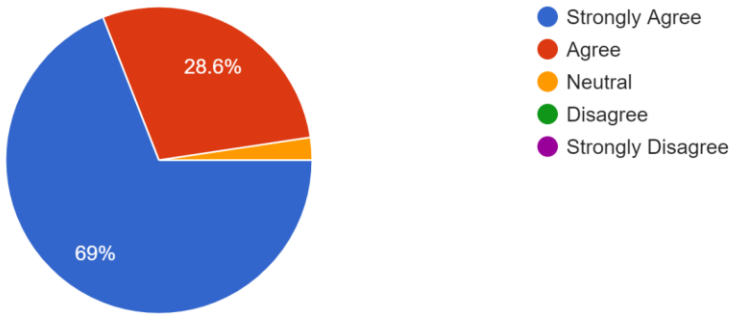
You have learned about the numerical methods to find the zeroes of nonlinear functions of a single variable, up to a certain given level of precision.

42 responses



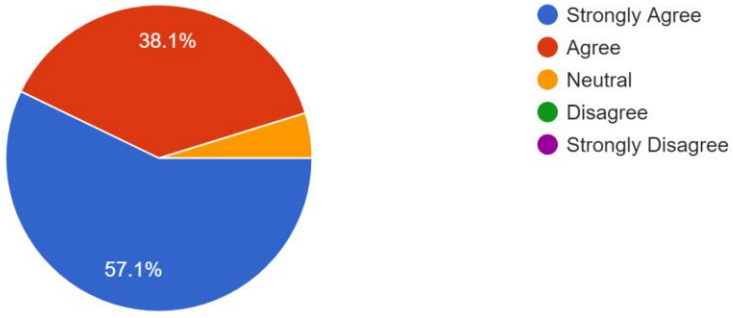
You have learned about the Gauss–Jacobi, Gauss–Seidel methods to solve system of linear equations.

42 responses



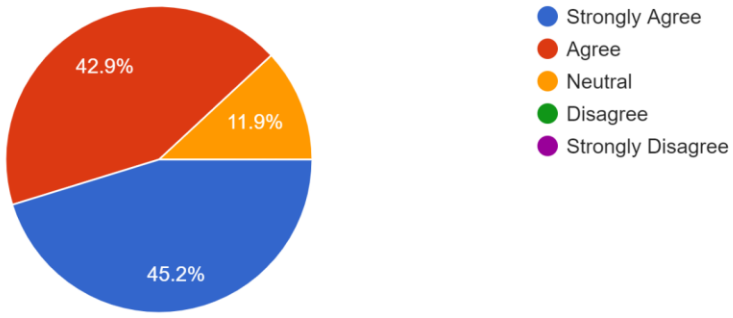
You are aware of interpolation techniques.

42 responses



You have learned about to finding numerical solutions of difference equations which are obtained converting differential equations using techniques from calculus.

42 responses



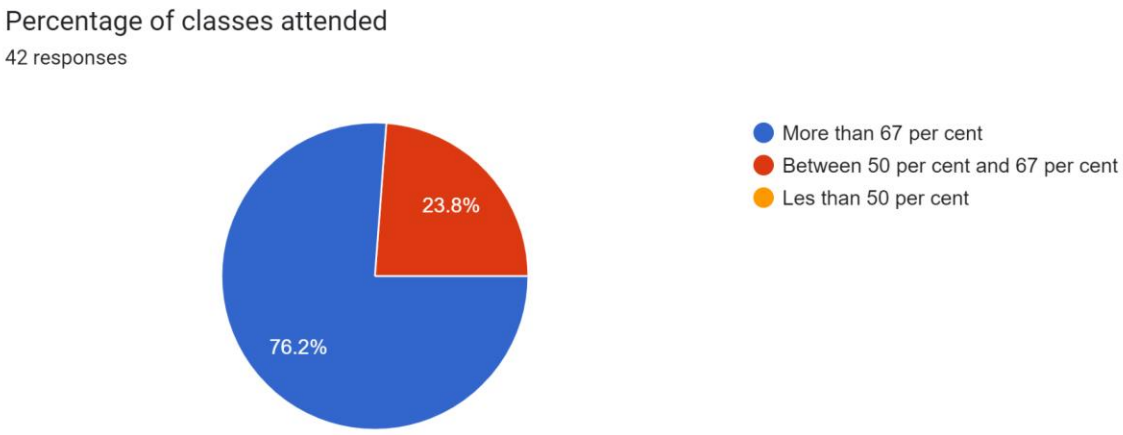
Observations:

From the given responses, it is observed that around 92% of students strongly agreed and agreed that they got an understanding the zeros of nonlinear functions of a single variable, up to a certain given level of precision, Gauss–Jacobi, Gauss–Seidel methods to solve system of linear equations, interpolation techniques and numerical solutions of difference equations which are obtained converting differential equations using techniques from calculus. It is also observed that students had keen interest in the paper as 81% of students had more than 67% of attendance.

Action Taken:

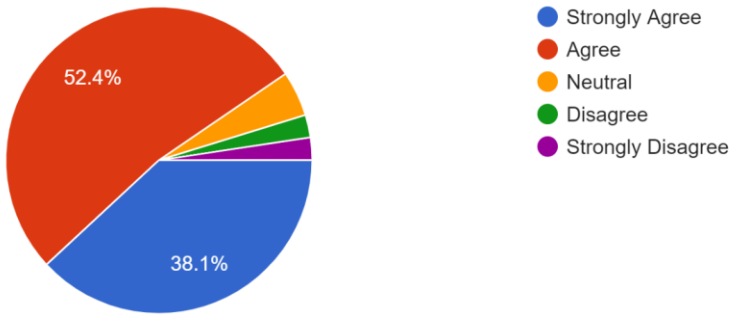
For improving attendance the topics should be discussed in innovative ways so that students find the subject more interesting. For weaker students topics should be discussed more with the students in tutorials. Measures will be taken to make the subject more engaging and appealing to the students in 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.

DSC11: MULTIVARIATE CALCULUS



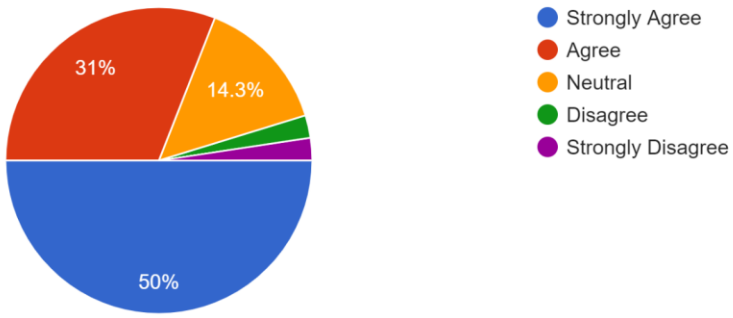
You have learned about the conceptual variations when advancing in calculus from one variable to multivariable discussion.

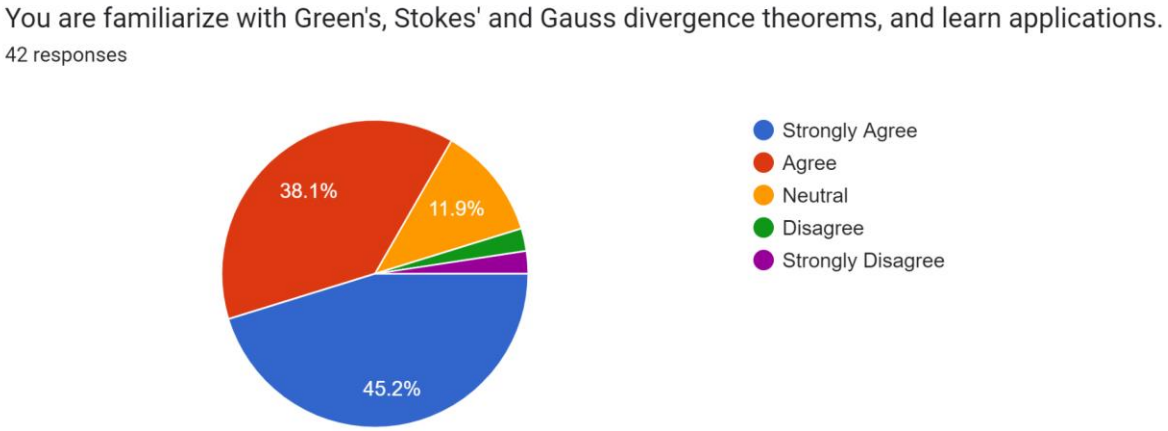
42 responses



You understood to about about inter-relationship amongst the line integral, double, and triple integral formulations.

42 responses





Observations:

From the given responses, it is observed that around 90% of students strongly agreed and agreed that they got an understanding conceptual variations when advancing in calculus from one variable to multivariable discussion, maximization and minimization of multivariable functions subject to the given constraints on variables, inter-relationship amongst the line integral, double, and triple integral formulations and Green's, Stokes' and Gauss divergence theorems, and learn applications. It is also observed that students had keen interest in the paper as 76% of students had more than 67% of attendance.

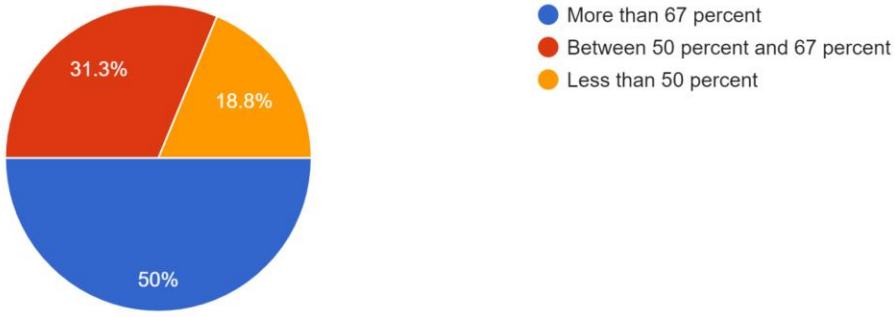
Action Taken:

For the moderate responses, the topic will be discussed more with the students in tutorials. For the weak students, remedial classes will be held to discuss important topics and questions with them. The topic of representation of a linear code by matrices should be explained by an innovative and practical approach so that students are able to learn easily. 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 1: IT Skills and Data Analysis 1

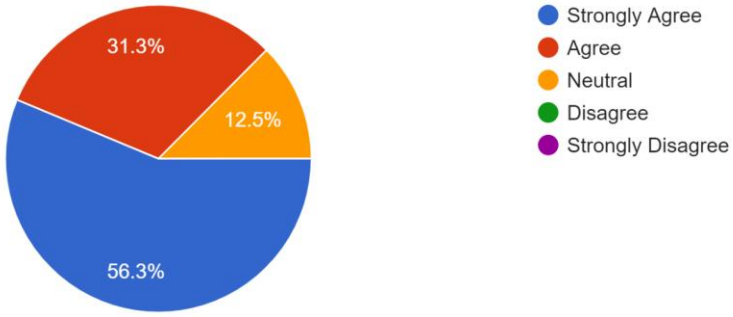
Percentage of Classes Attended

16 responses



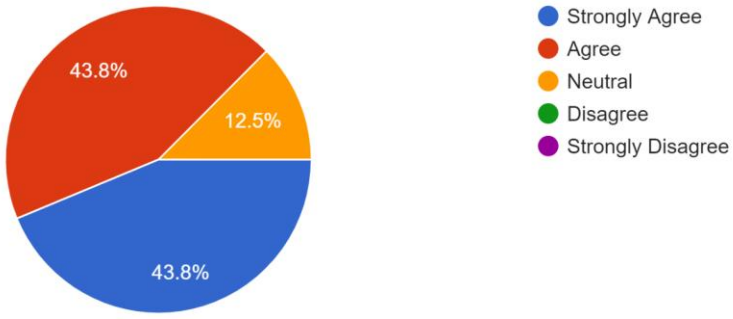
You are able to represent and interpret data in tabular and graphical forms.

16 responses



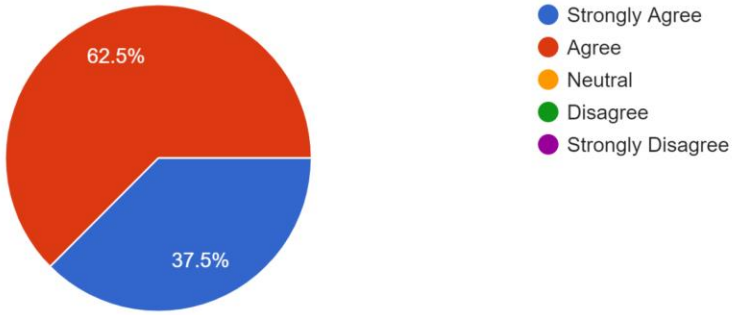
You have understood and can interpret the measures of central tendency and dispersion.

16 responses



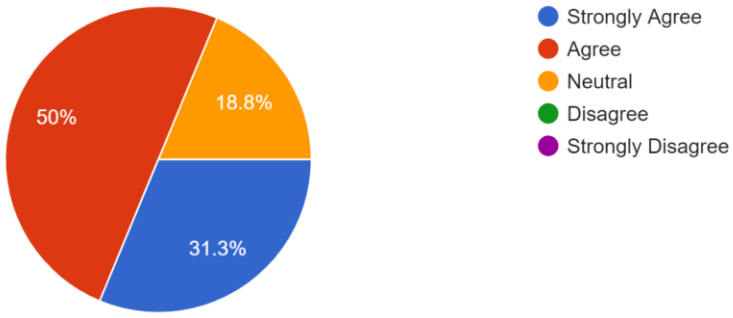
You can use IT tools such as spreadsheets to visualise and analyse data.

16 responses



You are equipped with some fundamental concepts, which play a critical role in understanding and visualizing real world data.

16 responses



Observations:

From the given responses, it is observed that around 89% of students strongly agreed and agreed that they got an understanding about how to represent and interpret data in tabular and graphical forms, measures of central tendency and dispersion, IT tools such as spreadsheets to visualise and analyse data, and some fundamental concepts, which play a critical role in understanding and visualizing real world data.

It is also observed that students had keen interest in the paper as 81.3% of students had more than 67% of attendance.

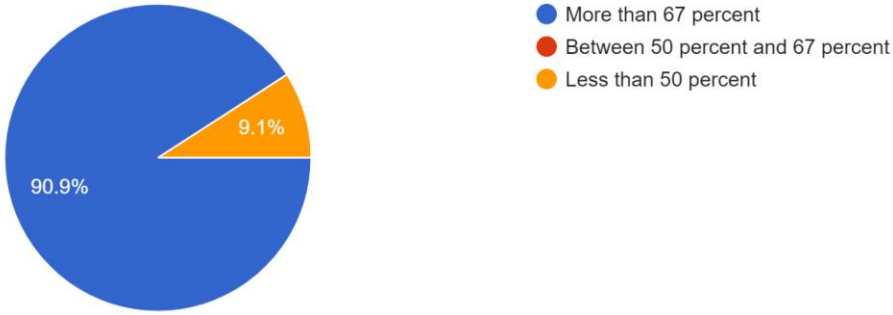
Action Taken

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

VAC 1 : Vedic Mathematics II

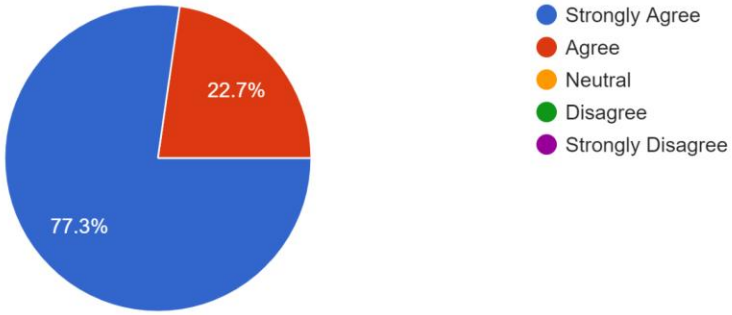
Percentage of Classes Attended

22 responses



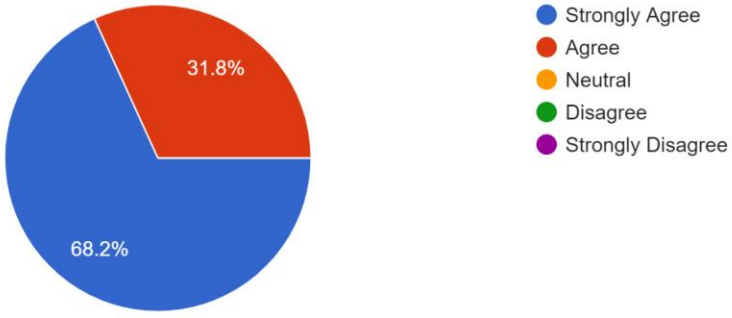
You are able to find the mathematical solution of algebraic expressions.

22 responses



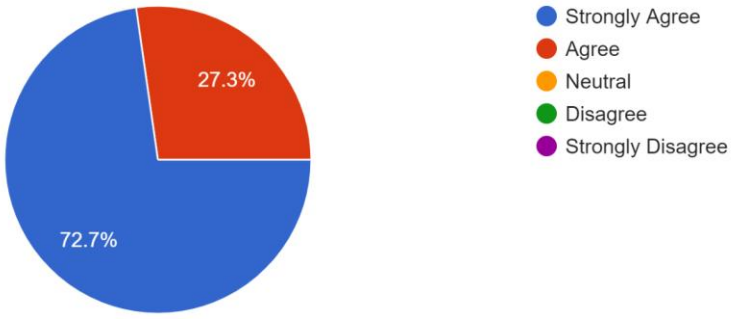
You are able to do basic maths faster and with ease.

22 responses



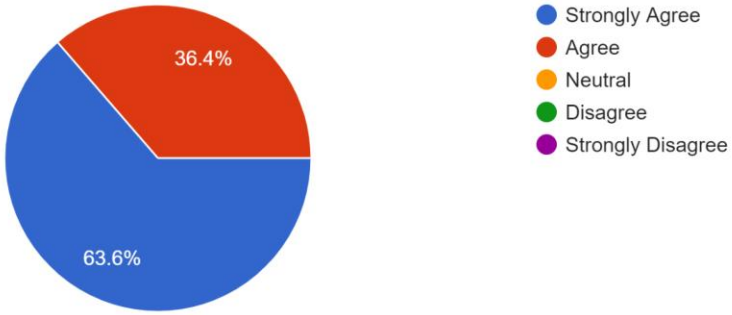
You are able to solve system of linear equations and matrices faster and with ease.

22 responses



You have developed logical and analytical thinking.

22 responses



Observations:

From the given responses, it is observed that around 100% of students strongly agreed and agreed that they got an understanding mathematical solution of algebraic expressions, basic maths faster and with ease, solve system of linear equations and matrices faster and with ease and able to have developed logical and analytical thinking.

It is also observed that students had keen interest in the paper as 91% of students had more than 67% of attendance.

Action Taken

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

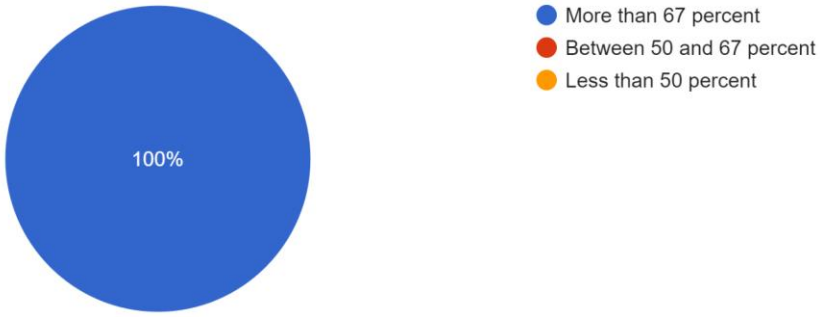
Department: Mathematics **Program: B.A.(H) & B.Com**

Semester: 4

GE-4-Linear Programming

Percentage of Classes Attended for this course

3 responses

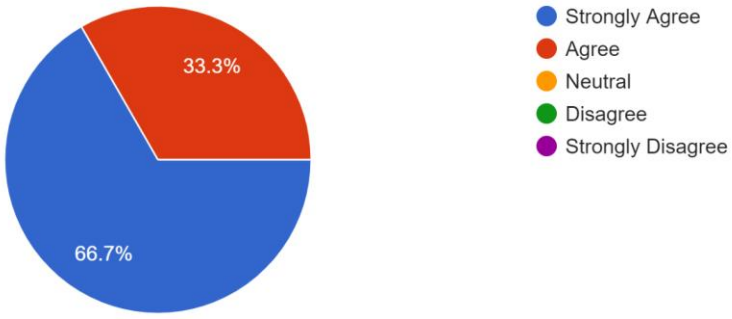


You Learned about the simplex method used to find optimal solutions of linear optimization problems subject to certain constraints.

3 responses

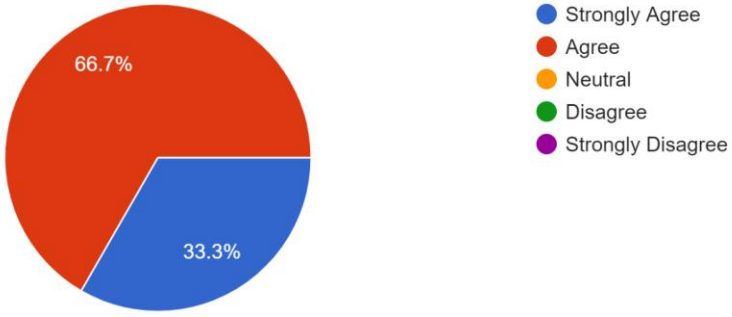
You were able to write the dual of a linear programming problem.

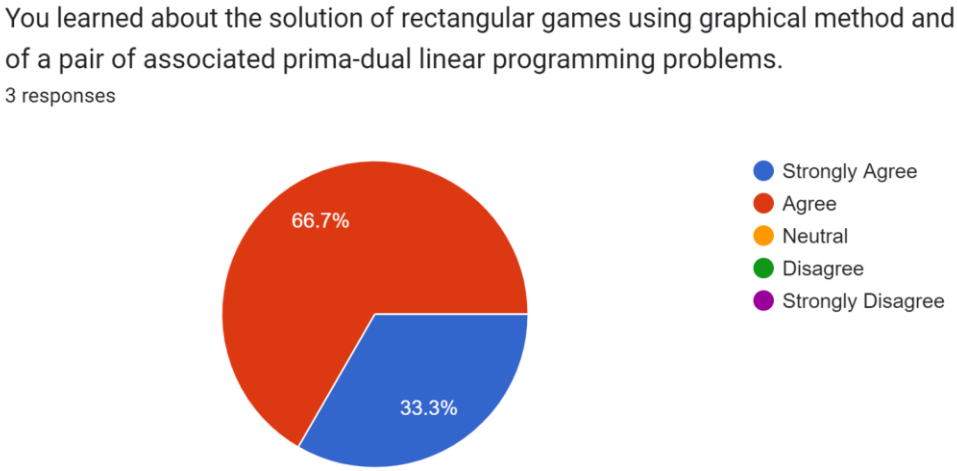
3 responses



You were able to solve the transportation and assignment problems.

3 responses





Observations:

From the given responses, it is observed that around 100% of students strongly agreed and agreed that they got an understanding the simplex method used to find optimal solutions of linear optimization problems subject to certain constraints, dual of a linear programming problem, transportation and assignment problems and the solution of rectangular games using graphical method and using the solution of a pair of associated prima-dual linear programming problems.

It is also observed that students had keen interest in the paper as 100% of students have more than 67% of attendance.

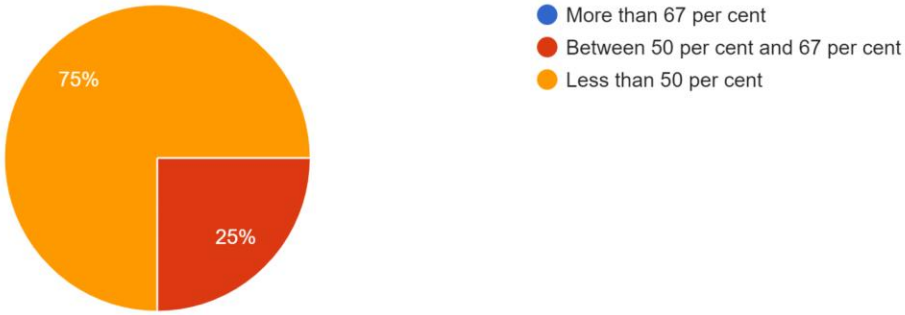
Action Taken

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

DISCIPLINE SPECIFIC CORE COURSE 4: ABSTRACT ALGEBRA

Percentage of classes attended

4 responses

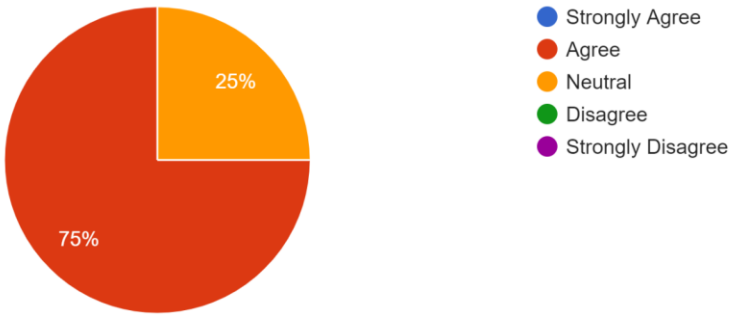


You have learned the concept of Modular arithmetic, fundamental theory of groups, rings, integral domains, and fields.

4 responses

You have understood the concepts of symmetry group of a plane figure, and basic concepts of cyclic groups.

4 responses



You understood the concept of Cosets of a group and its properties, Lagrange's theorem, and quotient groups.

4 responses

Observations:

From the given responses, it is observed that 92 % of students strongly agreed and agreed that they were able to learn modular arithmetic, fundamental theory of groups, rings, integral domains, and fields, symmetry group of a plane figure, and basic concepts of cyclic groups and the concept of Cosets of a group and its properties, Lagrange's theorem, and quotient groups.

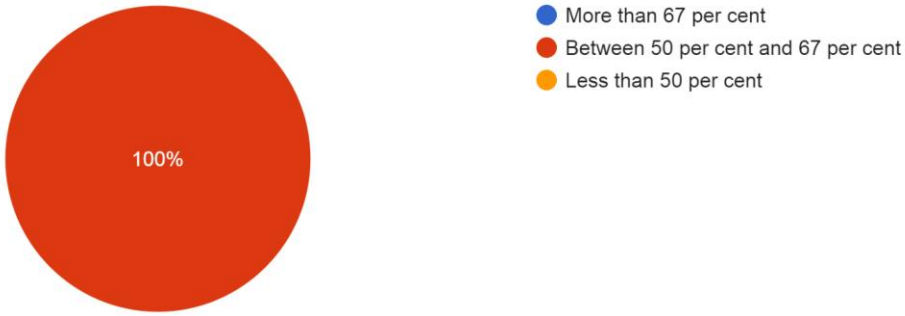
Action Taken:

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.

DISCIPLINE SPECIFIC CORE COURSE 4: INTRODUCTION TO GRAPH THEORY

Percentage of classes attended

1 response

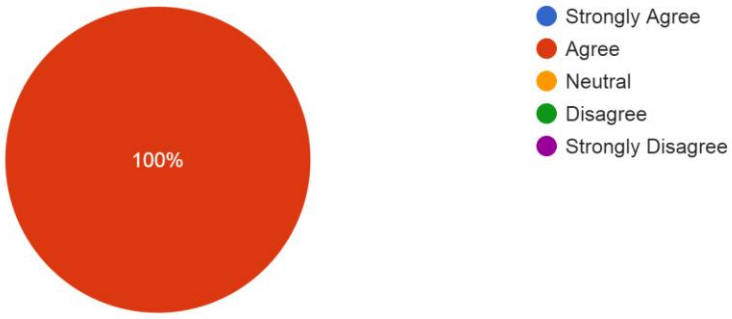


You have familiar with all initial notions of graph theory and related results and seeing them used for some real-life problems

1 response

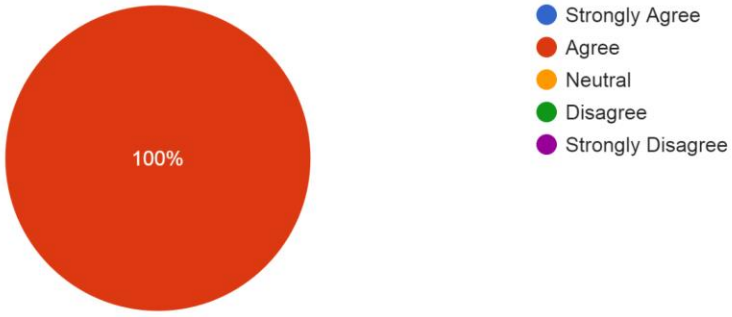
You have learning the notion of trees and their enormous usefulness in various problems.

1 response



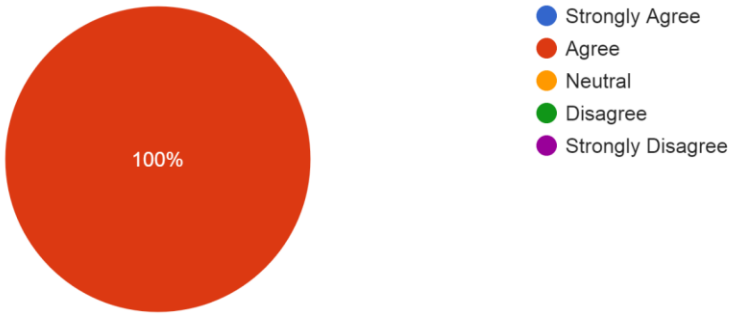
You understood the concept of various algorithms and their applicability in graph theory.

1 response



You have learned the Studying planar graphs, Euler theorem associated to such graphs and some useful applications like coloring of graphs.

1 response



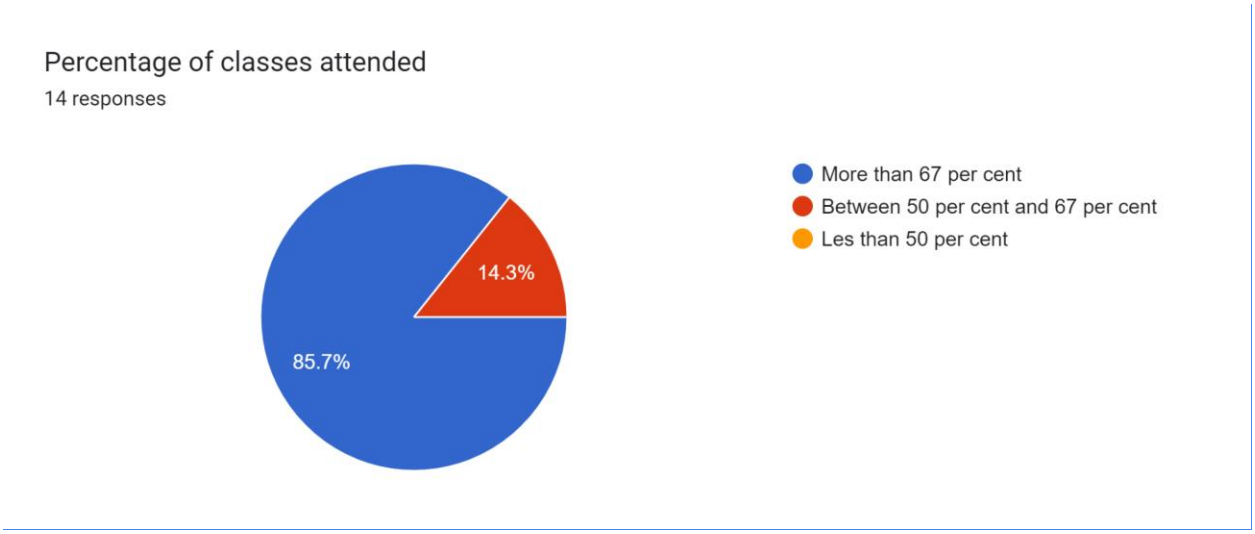
Observations:

From the given responses, it is observed that 100 % of students agreed that they were able to learn all initial notions of graph theory and related results and seeing them used for some real-life problems, the notion of trees and their enormous usefulness in various problems, the concept of various algorithms and their applicability in graph theory and the Studying planar graphs, Euler theorem associated to such graphs and some useful applications like coloring of graphs.

Action Taken:

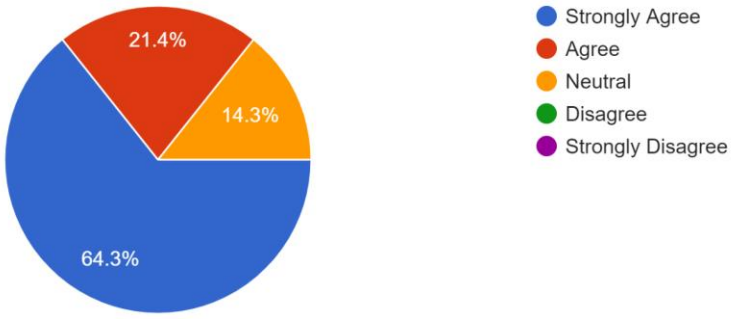
The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

DSE- 2(ii) : MATHEMATICAL MODELING



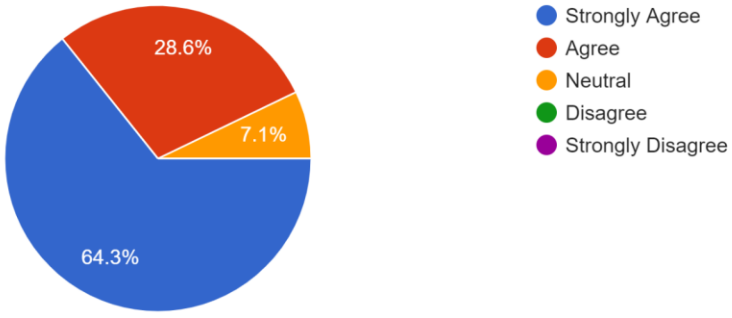
You have understand the methodology of solving SIR models for disease spread.

14 responses



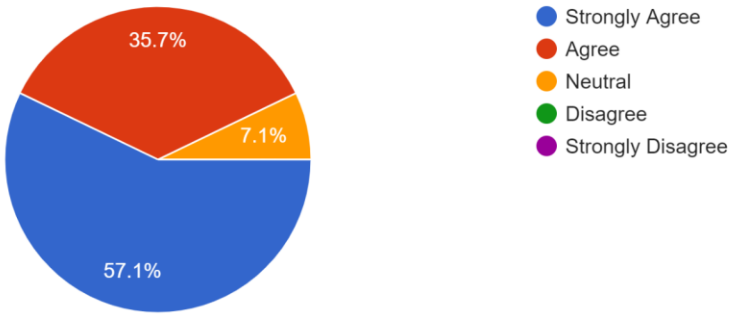
You have learn the significance of dieting model that provides important insights and guides to a biomedical issue that is of interest to the general public.

14 responses



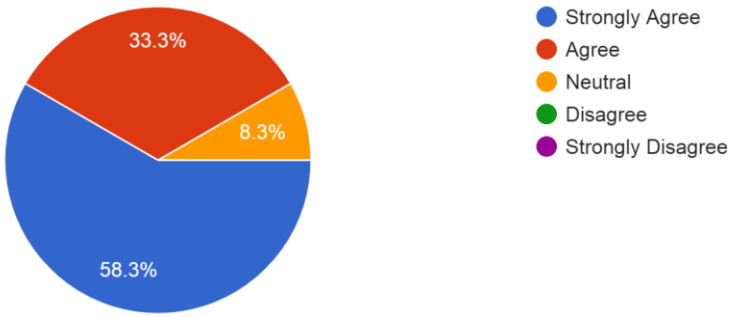
You have understand nonlinear systems and phenomena with stability analysis ranges from phase plane analysis to ecological and mechanical systems.

14 responses



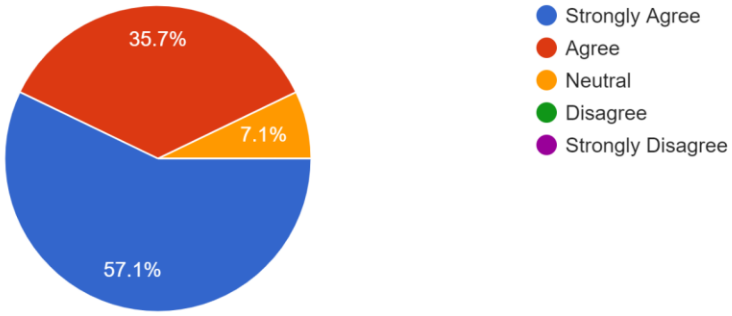
You are able to use Monte Carlo simulation technique to approximate area under a given curve, and volume under a given surface.

12 responses



You are able to use Monte Carlo simulation technique to approximate area under a given curve, and volume under a given surface.

14 responses



Observations:

From the given responses, it is observed that 91 % of students agreed that they were able to understand the methodology of solving SIR models for disease spread, the significance of dieting model that provides important insights and guides to a biomedical issue that is of interest to the general public, the nonlinear systems and phenomena with stability analysis ranges from phase plane analysis to ecological and mechanical systems and the use Monte Carlo simulation technique to approximate area under a given curve, and volume under a given surface.

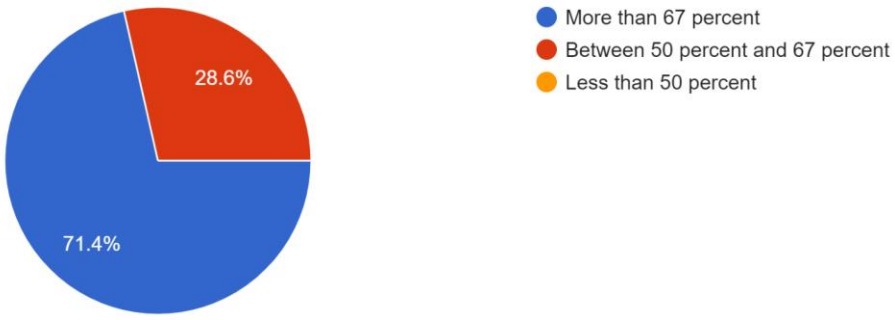
Action Taken:

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

SEC: Programming using Python

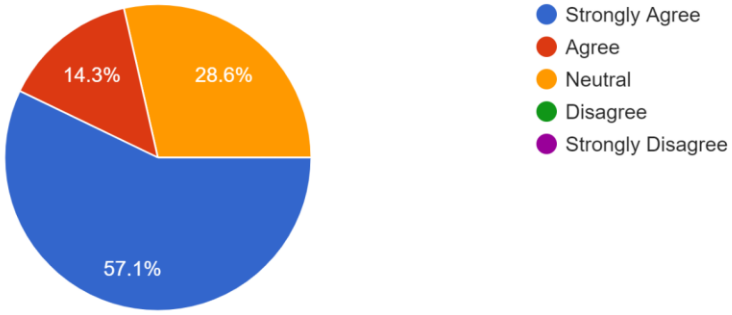
Percentage of Classes Attended

7 responses



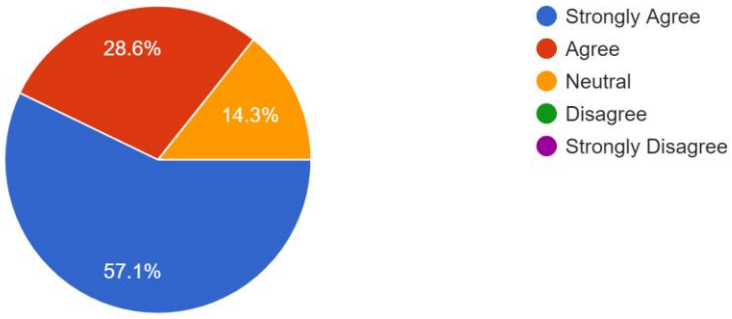
You are able to interpret the basic representation of the data structures and sequential programming .

7 responses



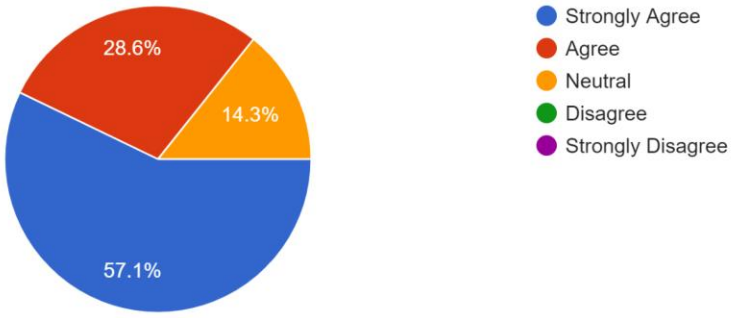
You have gained knowledge and ability to use control framework terminologies.

7 responses



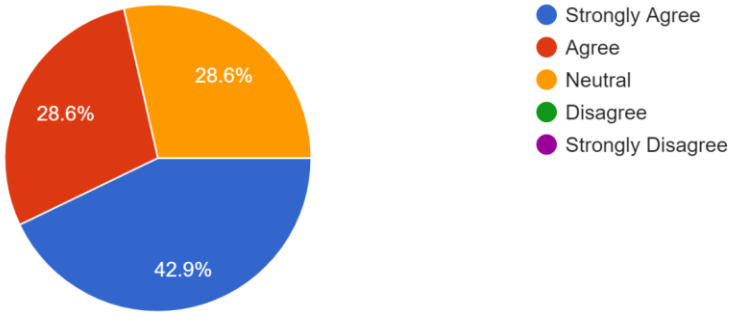
You are able to work out using the core data structures as lists, dictionaries, tuples, and sets

7 responses



You are able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules

7 responses



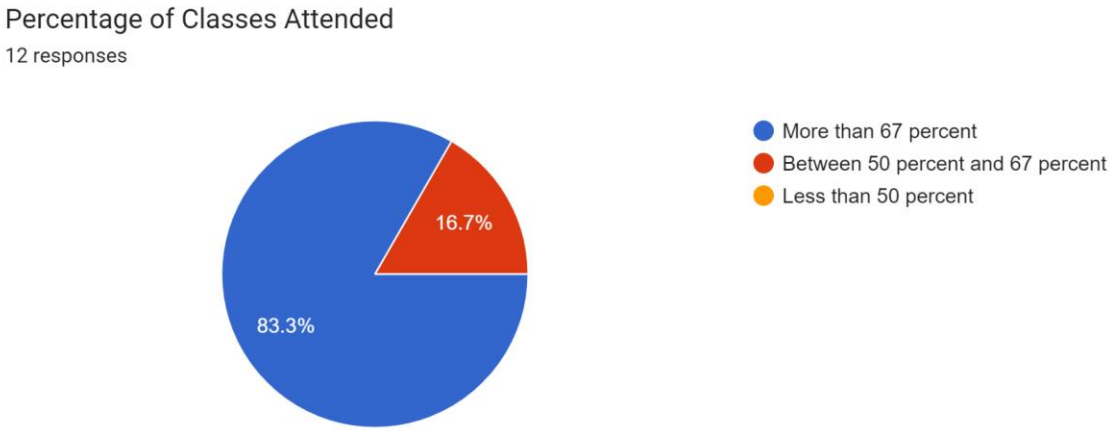
Observations:

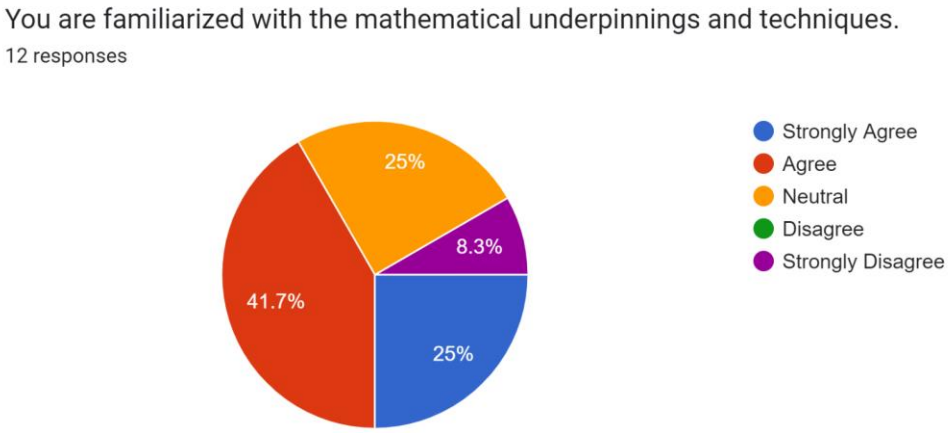
From the given responses, it is observed that 79 % of students agreed that they were able to interpret the basic representation of the data structures and sequential programming, gained knowledge and ability to use control framework terminologies, work out using the core data structures as lists, dictionaries, tuples, and sets and appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules.

Action Taken:

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

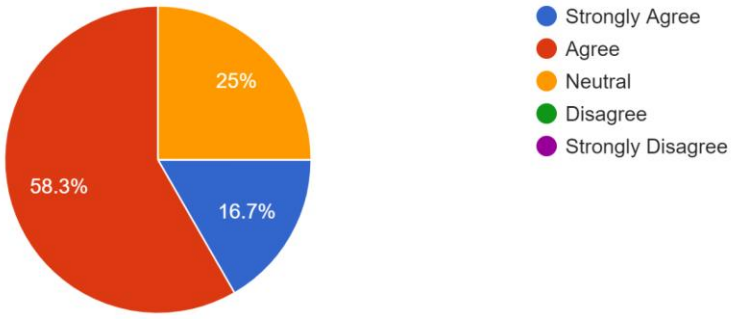
VAC 1 : Vedic Mathematics I





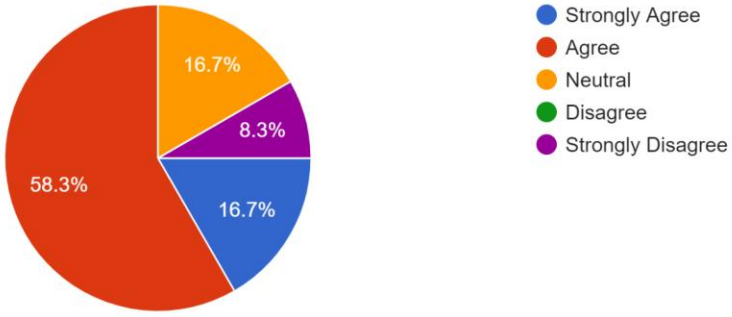
You are able to do basic maths faster and with ease.

12 responses



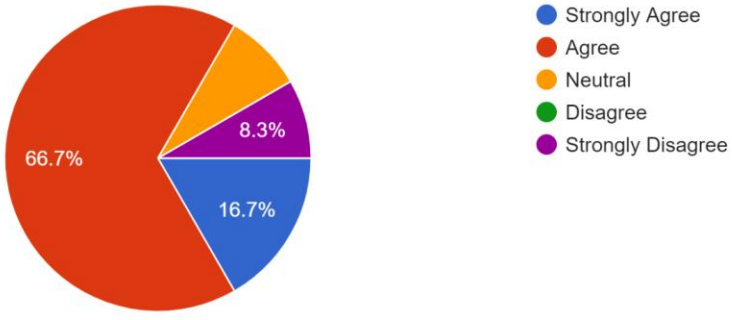
You have experienced joyful learning of Mathematics

12 responses



You have developed logical and analytical thinking.

12 responses



Observations:

From the given responses, it is observed that around 75% of students strongly agreed and agreed that they got an mathematical underpinnings and techniques, basic maths faster and with ease, experienced joyful learning of Mathematics and were able to have developed logical and analytical thinking.

It is also observed that students had keen interest in the paper as 83% of students had more than 67% of attendance.

Action Taken

The response to this paper has been encouraging. More efforts will be made to keep students intrigued.

COURSE EXIT SURVEY: Analysis Report

Academic Session: 2023-24

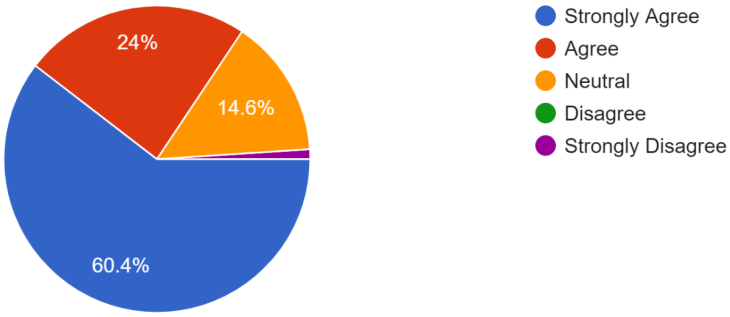
Department: Mathematics **Program: B.Sc.(H) Mathematics**

Semester: VI

Paper Name: Complex Analysis (UPC: 32351601)

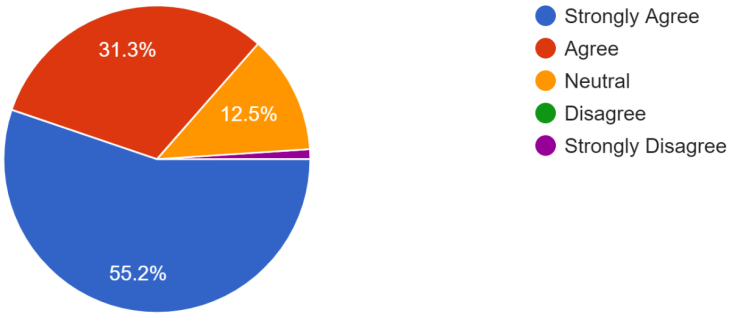
The course taught you the basic ideas of analysis for complex functions in complex variables with visualization through relevant practicals.

96 responses



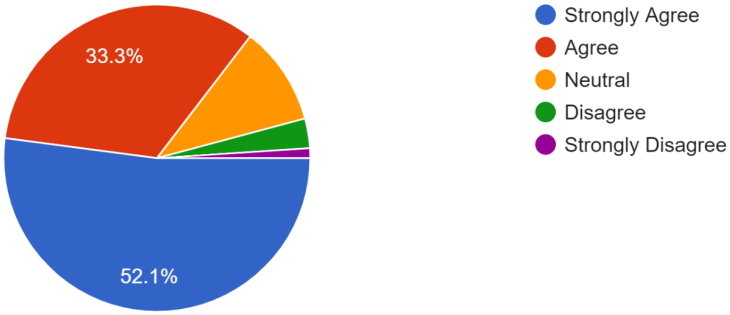
The course helped you to learn the significance of differentiability of complex functions leading to the understanding of Cauchy–Riemann equations.

96 responses



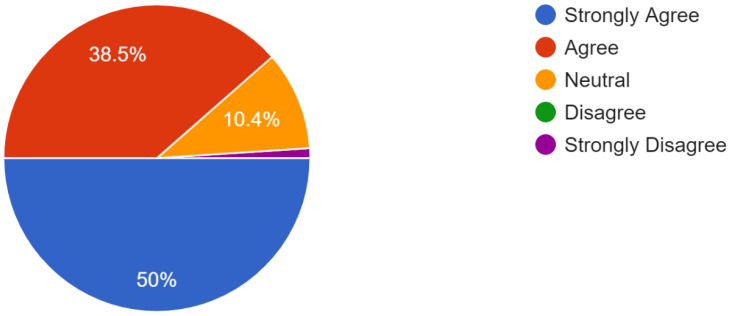
The course helped you to understand the elementary functions and evaluate the contour integrals.

96 responses



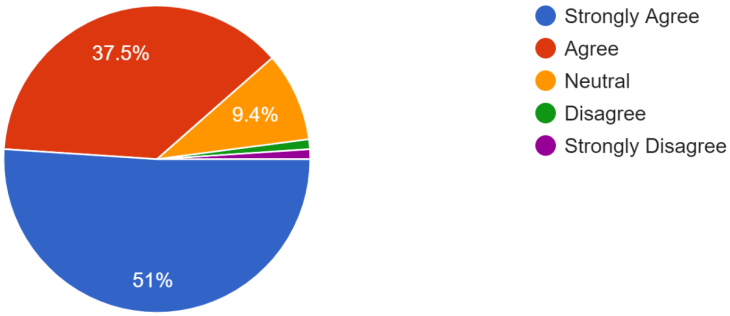
The course helped you to understand the role of Cauchy–Goursat theorem and the Cauchy integral formula.

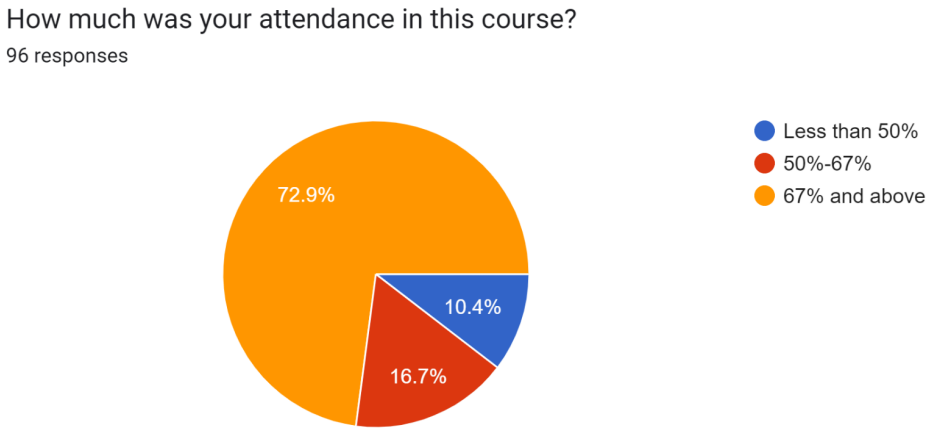
96 responses



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.

96 responses





Observations:

From the given responses, it is observed that around 85% - 90% 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 Gourset theorem, Cauchy Integral formula, Cauchy Residue Theorem etc.. It is also observed that students had an interest in the paper as 72% of students had more than 67% of attendance.

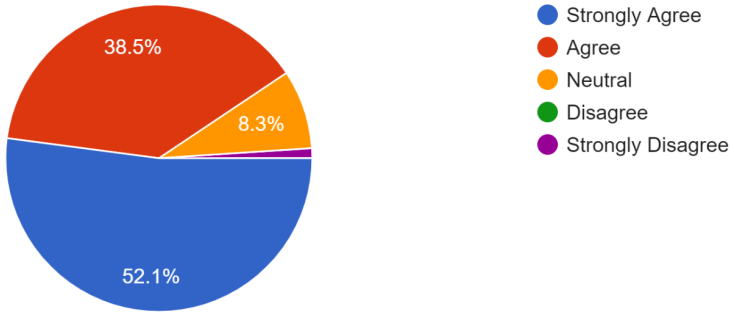
Action Taken:

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.

Course 2: BMATH614: Ring Theory and Linear Algebra-II (UPC: 32351602)

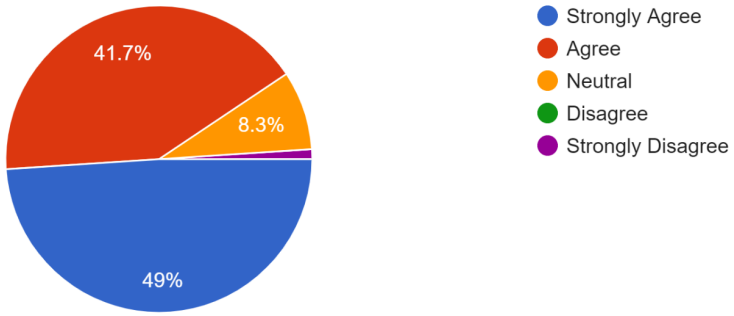
The course helped you to appreciate the significance of unique factorization in rings and integral domains.

96 responses



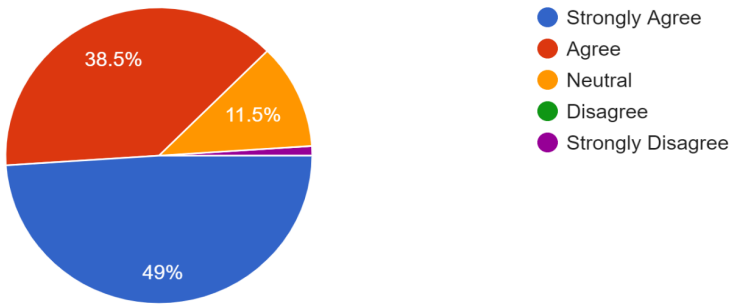
The course helped you to compute the characteristic polynomial, eigenvalues, eigenvectors, eigenspaces, as well as the geometric and the algebraic multiplicities of an eigenvalue

96 responses



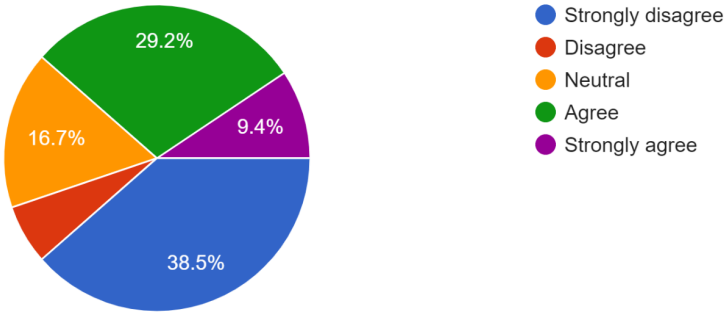
The course helped you to understand and compute inner products and determine orthogonality on vector spaces

96 responses



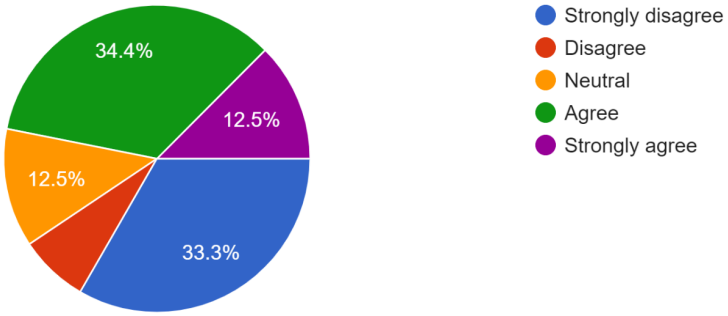
The course helped you to learn Gram–Schmidt orthogonalization to obtain orthonormal basis and understand its applications

96 responses



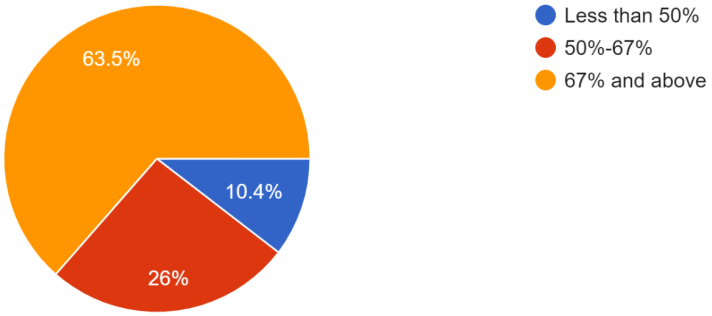
The course helped you to find the adjoint, normal, unitary and orthogonal operators.

96 responses



How much was your attendance in this course?

96 responses



Observations:

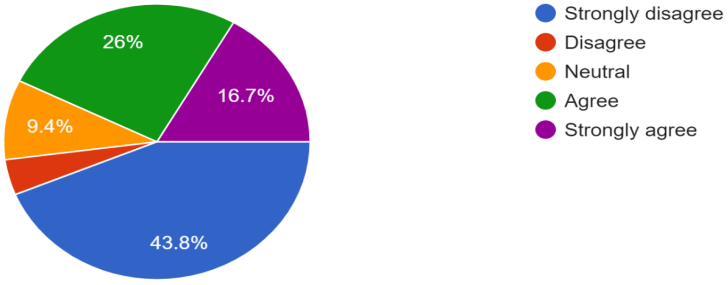
From the given responses, it is observed that around 85% - 90% of students strongly agreed and agreed that they got an understanding about Unique factorization domains, Euclidean domains, Dual Spaces and Diagonalizable Operators. Majority were able to understand Inner Product Spaces, Inner product spaces and norms, Orthonormal basis, Gram−Schmidt orthogonalization process, Orthogonal complements, Bessel's inequality. It is also observed that students had an interest in the paper as 63.5% 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.

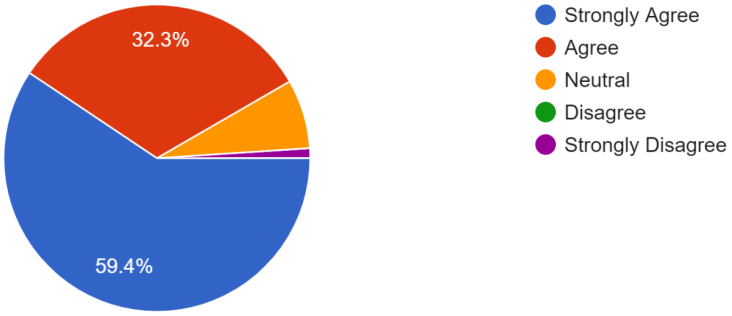
Course 3: DSE-3 (iii): Biomathematics (UPC: 32357609)

The course helped you to know the basic concepts of Population growth, Administration of drugs, Cell division, Heartbeat, Nerve impulse transmission, Chemical reactions, Predator prey models.
96 responses



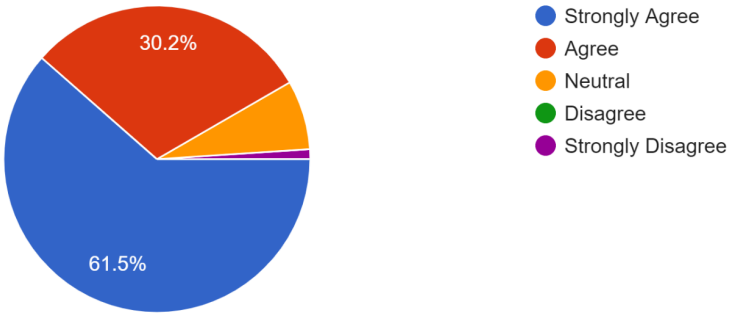
The course helped you to know about Stability and oscillations: Epidemics, Phase plane and Jacobian matrix, Local stability, Stability, Limit cy...orced oscillations; Mathematics of heart physiology.

96 responses



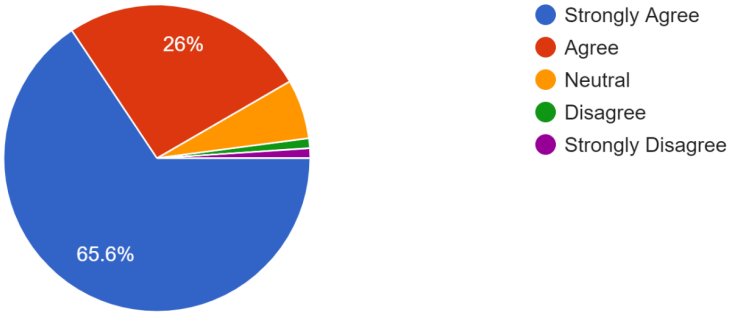
The course helped you to learn about the Bifurcation of a limit cycle, Discrete bifurcation and period-doubling, Chaos, Stability of limit cycles, Poincaré plane.

96 responses



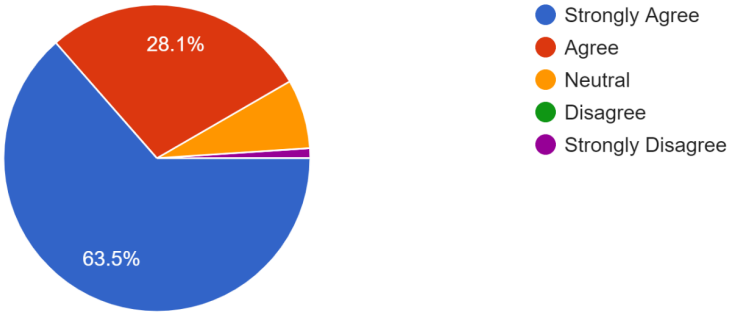
The course helped you to learn about the Modelling Molecular Evolution: Matrix models of base substitutions for DNA sequences

96 responses



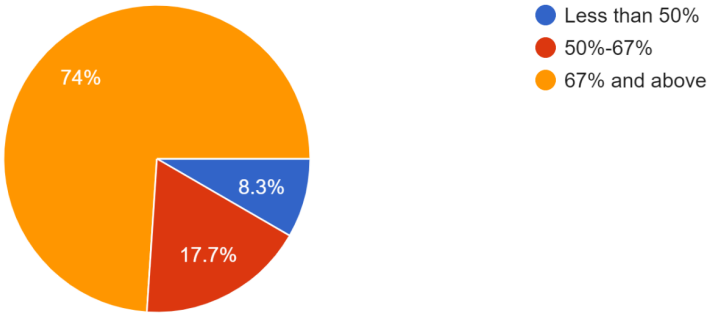
The course helped you to understand the concepts of Jukes–Cantor model, Kimura models, Phylogenetic distances; Constructing Phylogenetic Tr...an genetics, Probability distributions in genetics.

96 responses



How much was your attendance in this course?

96 responses



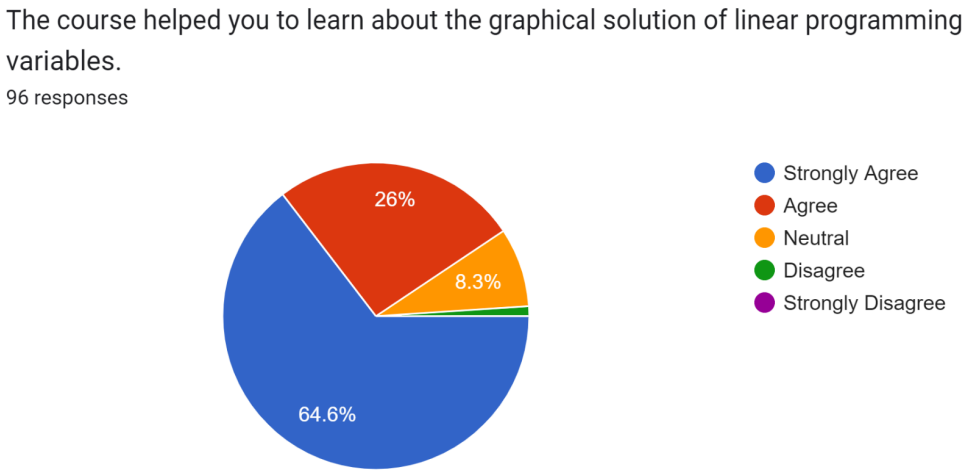
Observations:

From the given responses, it is observed that more than 80-85% of students who opted for this course strongly agreed and agreed that they got an understanding of Population growth, Administration of drugs, Cell division, Systems of linear ordinary differential equations, Heartbeat, Nerve impulse transmission, Chemical reactions, Predatorprey models. They got to know about Mathematics of Heart Physiology, Poincaré plane, Modeling Molecular Evolution and Genetics Modelling Molecular Evolution: Matrix models of base substitutions for DNA sequences. They were able to understand Mendelian genetics, Probability distributions in genetics. It is also observed that students had an interest in the paper as more than 74% of students had more than 67% of attendance.

Action Taken:

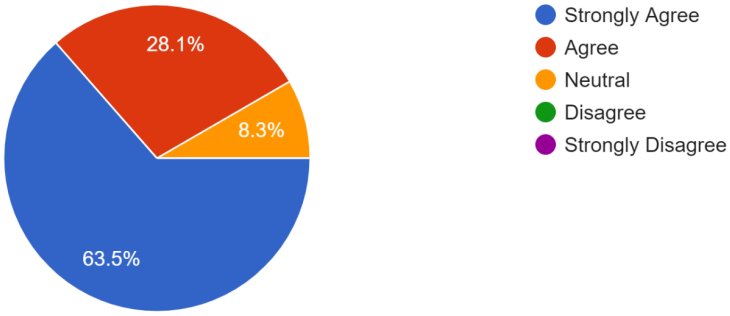
For the moderate responses, topics will be discussed more with the students in tutorials. For the weak students, special classes will be held to discuss important questions with them. Measures will be taken to make the subject more engaging and appealing to the students in order to ensure higher attendance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

Course 4: DSE-4 (ii): Linear Programming and Applications(UPC: 32357616)



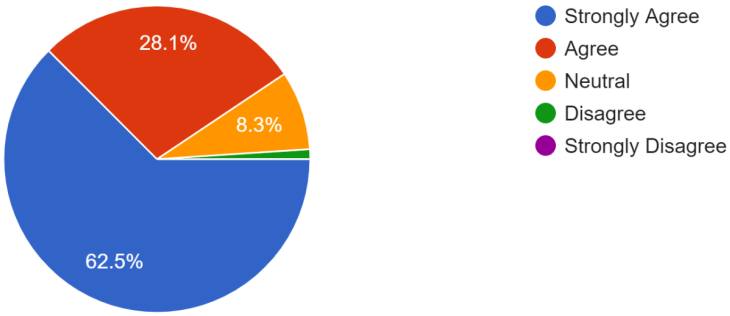
The course helped you to learn about the relation between basic feasible solutions and extreme points.

96 responses



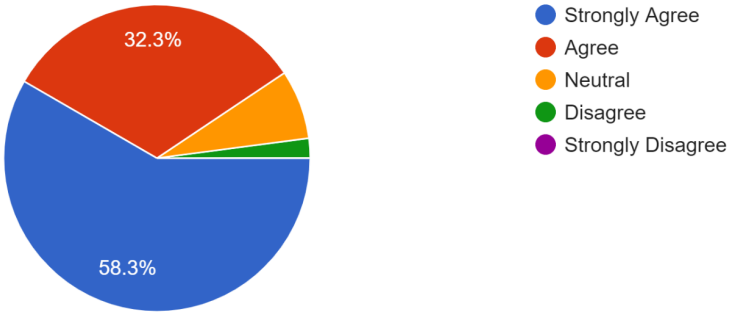
The course helped you to learn about the simplex method used to solve linear programming problems.

96 responses



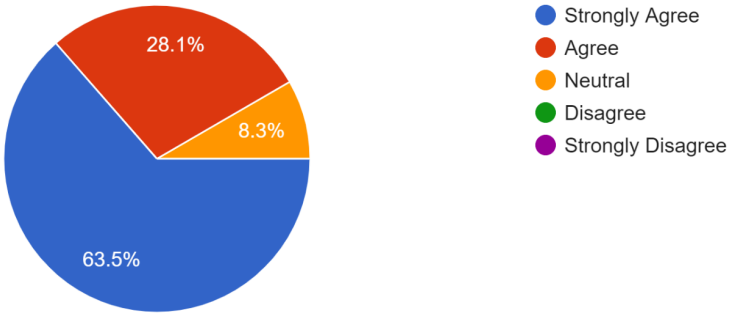
The course helped you to learn about two-phase and big-M methods to deal with problems involving artificial variables.

96 responses



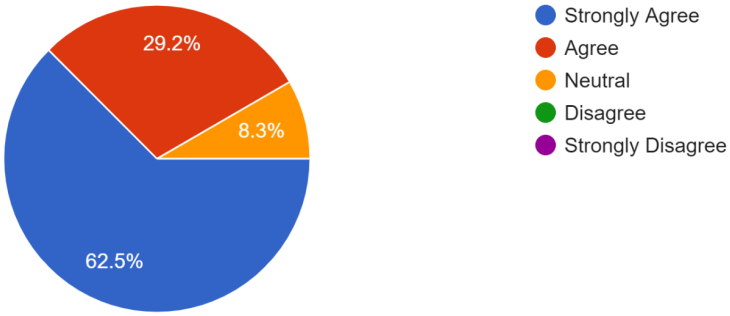
The course helped you to learn about the relationships between the primal and dual problems.

96 responses



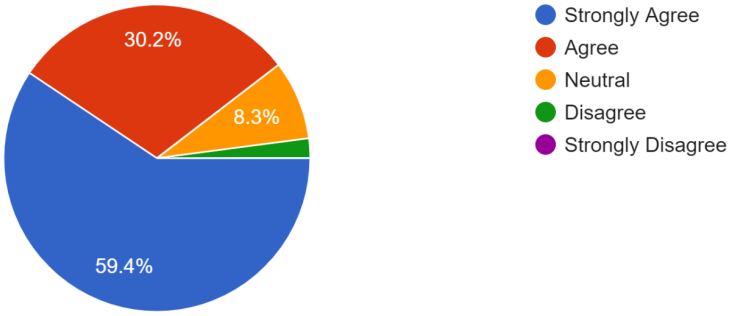
The course taught you to solve transportation and assignment problems.

96 responses



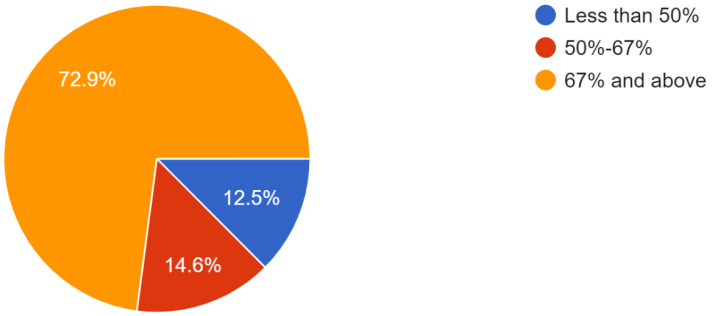
The course provided you the ability to apply linear programming method to solve two-person zero-sum game problems.

96 responses



How much was your attendance in this course?

96 responses



Observations:

From the given responses, it is observed that 75%-85% of students who opted for this course strongly agreed and agreed that they were able to understand and apply Introduction to Linear Programming Linear programming problem: Graphical solution; Convex and polyhedral sets, Hyperplanes, Extreme points; Basic solutions, Basic feasible solutions, Reduction of feasible solution to a basic feasible solution. They were able to understand the Simplex method, Big-M method, Duality and Theory of Linear Programming Motivation and formulation of dual problems. They were able to use Transportation Problem, Game Theory. It is also observed that students had an interest in the paper as more than 72% 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.