

BSc in Mathematics Program Program Intended Learning Outcomes

Mathematics Department – offering 8 programs

- a) MATH-PM: Pure Mathematics Track
- b) MATH-PMA: Pure Mathematics (Advanced) Track
- c) MATH-AM: Applied Mathematics Track
- d) MATH-STFM: Statistics and Financial Mathematics Track
- e) MATH-CS: Computer Science Track
- f) MATH-MP: Mathematics and Physics Track

a) Intended Learning Outcomes for MATH-PM Majors

Upon successful completion of the program, students will be able to:

1. Explain key concepts, principles and application of mathematical theories at an undergraduate level, utilizing precise mathematical language.
2. Recognize the power of abstraction and generalization of mathematical information, and apply independent judgment to investigative mathematical work.
3. Apply rigorous logical and analytic methods to execute tasks and solve mathematical problems.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of mathematical sciences.
9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical sciences in the international science community.

b) Intended Learning Outcomes for MATH-PMA Majors

Upon successful completion of the program, students will be able to:

1. Explain key concepts, principles and application of mathematical theories at the highest undergraduate level, utilizing precise mathematical language.
2. Recognize the power of abstraction and generalization of mathematical information, and

apply independent judgment to investigative mathematical work.

3. Apply rigorous logical and analytic methods to execute tasks and solve mathematical problems.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of mathematical sciences.
9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical sciences in the international science community.

c) Intended Learning Outcomes for MATH-AM Majors

Upon successful completion of the program, students will be able to:

1. Explain the key concepts, theories, principles and applications of quantitative techniques in mathematical sciences at an advanced level.
2. Model real-world problems and information mathematically and exercise independent judgment in applying structural and analytical approaches to achieve justifiable solutions.
3. Apply logical, analytic and highly numerate methods to execute tasks and solve real-world mathematical problems.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of mathematical sciences.
9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical sciences in the international science community.

d) Intended Learning Outcomes for MATH-STFM Majors

Upon successful completion of the program, students will be able to:

1. Explain key concepts, principles, theories and application of information prediction techniques in statistical and financial analysis at an advanced level.
2. Critically evaluate quantitative information on the basis of statistical knowledge, and exercise independent judgment in the objective prediction of quantitative information.
3. Apply quantitative reasoning underpinned by statistical knowledge to analyze the core issues and evaluate the key assumptions in financial decision-making scenarios and statistical modeling.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical and statistical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical and statistical sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of mathematical and statistical sciences.
9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical and statistical sciences in the international science community.

e) Intended Learning Outcomes for MATH-CS Majors

Upon successful completion of the program, students will be able to:

1. Explain the key concepts, theories, principles and applications of information technology in mathematical and computer sciences at an advanced level.
2. Critically evaluate information and exercise independent judgment in applying mathematical and computer sciences principles and methods to achieve justifiable solutions.
3. Apply quantitative analytic methods and IT skills to execute tasks and solve problems in mathematical and computer sciences.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical and computer sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of

mathematical and computer sciences.

9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical sciences in the international science community.

f) Intended Learning Outcomes for MATH-MP Majors

Upon successful completion of the program, students will be able to:

1. Explain the key concepts, theories, principles and application of tools in mathematical and physical sciences at an advanced level.
2. Critically evaluate information and exercise independent judgment in applying mathematical and physical principles and methods to achieve justifiable solutions.
3. Apply quantitative analytic methods to execute tasks and solve problems in mathematical and physical sciences.
4. Work independently and collaborate effectively in a team.
5. Communicate mathematical and physical concepts and approaches effectively to a range of audiences, both orally and in writing.
6. Evaluate individual performance to identify and work towards achieving targets for personal, academic and career development.
7. Apply the fundamental principles and conventions of ethical scientific practice and academic integrity.
8. Analyze the influence of mathematical and physical sciences and their impact on human activity, and inspire in others an interest in the beauty, logic and precision of mathematical and physical sciences.
9. Draw on a global perspective and sound scientific evidence to evaluate the role of mathematical and physical sciences in the international science community.