Bachelor of Science in Mathematics
Applied Mathematics

Mathematics Learning Outcomes

The overall mission of the mathematics majors is to prepare students for the lifelong study and use of mathematics. As for the specific educational goals of the program, we expect our graduates to be able to:

A. Organize and analyze data and information and synthesize problem solutions using appropriate mathematical tools;

B. Formulate conjectures, find counterexamples and state and prove theorems carefully;

C. Learn mathematics outside of the classroom through self-study or group-study, including the ability to refresh knowledge;

D. Communicate mathematics effectively both orally and in writing;

E. Use technology to aid in the above.

Applied Mathematics Learning Outcomes

We expect our graduates to be able to:

1. Formulate problems from another field mathematically or statistically:
2. Use mathematical/statistical tools and concepts in another field;
3. Use technology and numerical methods to solve problems;
4. Communicate solutions in the original context of the problem.

Learning Outcomes Crosswalk

Finance & Economics Track

Course Prefix/Number	Course Title	Learning Outcomes	Credit Hours
CSIT 121	Computer Science I	E	3
MATH 122	University Calculus 1	A, E	4
MATH 123	University Calculus II	A, E	4
MATH 210	Mathematical Structures and Proof	B, D (writing)	4
MATH 223	University Calculus III	A, E	4
MATH 224	Differential Equations	A, E	3
MATH 231	Linear Algebra	A, B, E	4
MATH 329	Mathematical Modeling	A, C, D, E, 1, 2, 3, 4	3
STAT 350	Probability and Statistics	A, C, D (writing), E, 1, 2, 3, 4	3
MATH 365	Financial Mathematics	A, C, 1, 2, 3, 4	3
MATH 405	Senior Seminar	A, B, C, D, E	1
MATH/STAT Elective[1]		A, B, C, D (writing)	3
ECON 201	Principles of Macroeconomics		3
ECON 202	Principles of Microeconomics		3
ACCT 201	Financial Accounting		3
ACCT 202	Managerial Accounting		3
ACCT/BUAD/ECON elective	See list below		3
ACCT/BUAD/ECON elective	See list below		3
ACCT/BUAD/ECON elective	See list below		3
ACCT/BUAD/ECON elective	See list below		3

List of ECON/BUAD/ACCT electives:

ECON 300	Statistical Analysis
ECON 305	Intermediate Microeconomic Theory
ECON 310	Intermediate Macroeconomic Theory
ECON 315	Money/Banking/Monetary Economics
ECON 350	Managerial Economics
ECON 400	Econometrics & Business Applications
ECON 410	Mathematical Economics
BUAD 315	Principles of Business Finance
BUAD 317	Corporate Finance I
BUAD 320	Managerial Finance
BUAD 416	Investment Analysis
BUAD 418	Corporate Finance II
ACCT 303	Cost Management
ACCT 304	Taxation I
ACCT 305	Taxation II

Learning Outcomes Crosswalk

Statistics/Operations Research Track

Course Prefix/Number	Course Title	Learning Outcomes	Credit Hours
CSIT 121	Computer Science I	E	3
MATH 122	University Calculus 1	A, E	4
MATH 123	University Calculus II	A	4
MATH 210	Mathematical Structures and Proof	B, D (writing)	4
MATH 223	University Calculus III	A	4
MATH 224	Differential Equations	A, E	3
MATH 231	Linear Algebra	A, B, E	4
MATH 329	Mathematical Modeling	A, C, D, E, 1, 2, 3, 4	3
STAT 350	Probability and Statistics	A, C, D (writing), E, 1, 2, 3, 4	3
STAT 355	Mathematical Statistics	A, B, C, D (writing)	3
MATH 405	Senior Seminar	A, B, C, D, E	1
Applied MATH/STAT Elective[1]		A, C, D, E, 1, 2, 3, 4	3
Applied MATH/STAT Elective[1]		A, C, D, E, 1, 2, 3, 4	3
MATH/STAT Elective[2]		A, B, C, D (writing)	3

[1] Two of the following three courses: STAT 351 – Applied Statistics, MATH 359 – Probability Models in Operations Research, MATH 375 – Deterministic Models in Operations Research

[2] Additional MATH or STAT courses numbered 311 or higher, as advised.

Minor in a Field that Uses Statistics or Operations Research:

_____

student chooses that course as an elective.

Learning Outcomes Crosswalk

Physics Track

Course Prefix/Number	Course Title	Learning Outcomes	Credit Hours
CSIT 121	Computer Science I	E	3
MATH 122	University Calculus 1	A, E	4
MATH 123	University Calculus II	A	4
MATH 210	Mathematical Structures and Proof	B, D (writing)	4
MATH 223	University Calculus III	A, E	4
MATH 224	Differential Equations	A, E	3
MATH 231	Linear Algebra	A, B, E	4
MATH 325	Numerical Analysis	A, C, E, 3	3
MATH 329	Mathematical Modeling	A, C, D, E, 1, 2, 3, 4	3
STAT 350	Probability and Statistics	A, C, D (writing), E, 1, 2, 3, 4	3
MATH 405	Senior Seminar	A, B, C, D, E	1
MATH/STAT Elective[1]		A, B, C, D (writing)	3
PHYS 230	University Physics I		4
PHYS 231	University Physics II		4
PHYS 232	University Physics I Lab		1
PHYS 233	University Physics II Lab		1
PHYS 234	Modern Physics		4
PHYS 331 or PHYS 333	Theoretical Mechanics or Electricity and Magnetism		3
PHYS 425	Mathematical Physics I		3
PHYS 426	Mathematical Physics II		3

[1] Cooperative Engineering students on the 3-2 plan may count PHYS 324 Circuit Analysis II as MATH/STAT elective.