

Bachelor of Science in Applied Mathematics

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. The applied mathematics comprehensive major consists of a concentration in mathematics and a second concentration in one of the following: physics, biology, chemistry, or environmental science
2. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate scientific hypotheses.
3. Gain experience with working independently as well as part of a team.
4. Demonstrate proficiency using theories and practice (field and laboratory) in physics, biology, chemistry, or environmental biology.
5. Communicate mathematical and scientific findings in standard written and oral formats.
6. Develop a realistic understanding of the various challenges and benefits of applied mathematics vocations through work studies, internships, or summer research opportunities.
7. Identify, formulate, abstract, and solve mathematical problems that use tools from a variety of mathematical areas, including algebra, analysis, probability, numerical analysis and differential equations.
8. Maintain a core of mathematical and technical knowledge, including software and algorithmic processes necessary in quantitative analysis, and mathematical modeling.
9. Demonstrate analytical skills and extensive experience with the tactics of problem solving and logical thinking; ask pertinent questions and perform suitable quantitative analysis.
10. Demonstrate a solid understanding of rigorous mathematical proof; write clear well-organized and logical mathematical arguments.

Bachelor of Science in Biological Chemistry

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate scientific hypotheses.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using biological chemistry principles in theory and practice (field and laboratory).
4. Communicate scientific findings in scientifically standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of biological chemistry oriented vocations through work studies, internships, or summer research opportunities.
6. Demonstrate understanding of the fundamentals of chemistry and biology including biomolecules structure and function, biological catalysts, ligand binding, enzyme kinetics, allosteric regulation, bioenergetics and equilibria, metabolism and regulation, signal transduction, supramolecular assemblies, enzyme mechanisms and inhibition, protein folding and denaturation.
7. Demonstrate basic laboratory skills in modern biochemical techniques, including the ability to work safely, effectively, and ethically and a comprehension of the mechanisms underlying these techniques through in-class activities.

Bachelor of Science in Biology

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate scientific hypotheses.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using environmental, organismal, cellular and molecular biological principles in theory and practice (field and laboratory).
4. Communicate scientific findings in scientifically standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of biology vocations through work studies, internships, or summer research opportunities.

Bachelor of Science in Chemistry

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate scientific hypotheses.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using chemical principles in theory and practice (laboratory).
4. Communicate scientific findings in scientifically standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of chemistry vocations through work studies, internships, or summer research opportunities.
6. Demonstrate knowledge of chemical and instrumental analysis, organic and inorganic chemistry, atomic and molecular structure, thermodynamics, kinetics, quantum mechanics and spectroscopy.
7. Synthesize and characterize, by chemical or physical means, both organic and inorganic compounds.
8. Apply chemistry to environmental, industrial and health issues.
9. Perform experiments to obtain fundamental thermodynamic and kinetic data on chemical systems.
10. Operate scientific instruments that provide basic spectroscopic and electrochemical information and interpret data obtained.
11. Write and present formal laboratory reports on the results of chemical experiments. This includes computation, error analysis, and graphic data displays. This should include skills with computer based simulations and computational models.
12. Use modern instrumentation and classical techniques, to design experiments, and to properly record the results of their experiment.

13. Demonstrate proper procedures and regulations for safe handling and use of chemicals.

Bachelor of Science in Computer Information Systems

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate computer information systems projects and problems.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using computer information systems principles in theory and practice (field and laboratory).
4. Communicate project findings in standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of computer information systems vocations through work studies, internships, or summer research opportunities.
6. Demonstrate a solid understanding of theory and concepts underlying computer information systems.
7. Demonstrate strong programming skills which may include writing debugging or testing computer programs.
8. Analyze a problem and identify and define the computing requirements to solve problems (e.g. programming networking database and Web design).
9. Design and implement a computer-based system, process, component or program as well as design non-computing requirements.
10. Evaluate, verify, trouble-shoot, test and analyze an existing computer-based system, process, component or program.
11. Evaluate and discuss IT security issues and protocols.
12. Analyze the local and global impact of computing on individuals, organizations, and society.

Bachelor of Science in Computer Science

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate computer science tasks or projects.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using computer science principles in theory and practice.
4. Communicate project findings in standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of computer science vocations through work studies, internships, or summer research opportunities.
6. Demonstrate fluency and competency in an object-oriented programming language.
7. Integrate learning from other areas to apply concepts, principles, and theories relating to computer science to new situations.
8. Compare and evaluate design and algorithm choices used to solve computing requirements.
9. Assess the quality, accuracy, and timeliness of data.
10. Identify appropriate practices within a global, professional, legal, and ethical framework.
11. Apply relational database concepts, principles, and theories to designing and creating information systems.
12. Apply operating system and hardware concepts and principles to problem solving in the context of computer systems.
13. Apply knowledge of networking concepts and principles to solving problems related to networked computer systems.

Bachelor of Science in Health Care

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate pathologies and the treatments thereof.
2. Gain experience with working independently as well as part of a team.
3. Demonstrate proficiency using biological and chemical principles in theory and practice (laboratory).
4. Communicate scientific findings in scientifically standard written and oral formats.
5. Develop a realistic understanding of the various challenges and benefits of healthcare vocations through work studies, internships, or summer research opportunities.
6. Synthesize and demonstrate comprehensive knowledge from the arts, humanities, sciences and nursing to develop a foundation in nursing in specialized areas of health promotion and disease prevention.
7. Demonstrate the use of critical thinking skills in the integration of current nursing knowledge and evidence-based findings to direct clinical practice decisions.
8. Demonstrate the use of effective communication strategies to identify, manage and exchange knowledge with clients, healthcare professionals, and community members.
9. Engage in rational inquiry to evaluate the interdisciplinary health care needs of diverse populations across the lifespan toward achieving the goal of healthy individuals, families, groups and communities.
10. Define, design and implement effective professional nursing leadership in the healthcare system among diverse cultures and populations.

11. Demonstrate knowledge of complex legal, moral, and ethical healthcare policy decision-making of all components of nursing practice in global healthcare organizational systems.
12. Use information technology to care for patients, manage knowledge, communicate, inform and facilitate decision making in health care.

Bachelor of Science in Mathematics

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate mathematical principles and applications.
2. Communicate findings in standard written and oral formats.
3. Develop a realistic understanding of the various challenges and benefits of mathematics vocations through work studies, internships, or summer research opportunities.
4. Demonstrate a working knowledge of fundamental algebraic structures (e.g., groups, rings, and fields), number and calculus theories.
5. Identify, formulate, abstract, and solve mathematical problems that use tools from a variety of mathematical areas, including algebra, analysis, probability, and differential equations.
6. Demonstrate a solid understanding of rigorous mathematical proof and express mathematical concepts accurately and concisely in numerical and spoken language.
7. Demonstrate a basic working knowledge of the properties of complex numbers and complex-valued functions.
8. Working knowledge of computer software and algorithmic processes necessary for quantitative analysis.
9. Apply mathematical concepts to concrete and abstract problems, and draw logical conclusions using the logic, and inductive and deductive reasoning.

Science and Technology Core Outcomes

The following Program Learning Outcomes have been established by Evangel faculty to define the areas of knowledge and skills that students graduating from this major degree program should have developed:

1. Acquire foundational level of scientific literacy.
2. Develop a mature Christian worldview that integrates faith and science.
3. Deal wisely and ethically with the technological issues facing society.
4. Develop a positive attitude toward science.
5. Make contributions to the church, their profession, and society.
6. Demonstrate readiness for graduate school and/or the chosen professions.
7. Demonstrate critical thinking and problem-based learning skills to understand, interpret, and evaluate scientific hypotheses.
8. Gain experience with working independently as well as part of a team.
9. Demonstrate proficiency using scientific principles in theory and practice (field and laboratory when appropriate).
10. Communicate scientific findings in scientifically standard written and oral formats.
11. Develop a realistic understanding of the various challenges and benefits of science vocations through work studies, internships, or summer research opportunities.