SCIENCE (SCI)

SCI 100 Pre-Nursing 101 1 credit
This course is designed for students interested in pursuing a degree in nursing. The course will support student success in science prerequisite coursework and overall preparation for the University's pre-licensure bachelor of Science Nursing program. Key concepts in the course include introductory scientific and medical terminology, study strategies for science-based coursework which are foundational to the nursing program and will support success in the nursing program, exposure to the field of nursing, and overall student preparedness for the university's pre-licensure Bachelor of Nursing program.

SCI 120 Live Science: How Scientific Issues Impact Your Daily Life 4 credits
Not excited about taking a science general education course? This course will show you how much science affects your day-to-day life. You will learn about current issues and controversies in the areas of biology, chemistry, and environmental science, including global warming, alternative energy, fracking, recycling, vaccination, GMOs, cloning and gene therapy, and stem cells. This course will equip you to think critically, find reliable sources of information, and to make educated decisions when it comes to your health, your environment, and political issues. This course includes a lab, which will help you to learn the theory behind the scientific method and give you exposure to how scientific research is carried out.

SCI 255 Global Regulatory and Legal Requirements of Quality 3 credits
This course is focused on "why" global regulations were adopted and the evolution of the quality systems grounded in science.

SCI 270 Product Development and Validation 3 credits
In this course, students will be exposed to the major design processes that are critical to life science product, process and specification development. Topics covered include: product and process development, design of experiments, variability, control, and validation methodology. Participants learn how rigorous human factor engineering studies and clinical trials provide essential inputs into the product development process. The participants are introduced to concepts such as gap analysis, risk assessment, process characterization, equipment qualification, measurement system analysis, repeatability and reproducibility, and performance qualification/ validation. (Prerequisite: SCI 250 or SCI 255)

SCI 280 Risk and Failure Analysis 3 credits
Risk and failure analysis underpins every decision made in the life science industries. In this course, participants will be exposed to the use of risk analysis proactively to inform product development, as well as reactively to find true root cause to product, process and system failures. Through the use of historical risk analysis techniques, such as FMEA, Fishbone, and 5 Why?s, participants are able to analyze a holistic set of data (in-production, across product lines, across equipment, human variability, on-market, on-stability, validation studies, change control, etc.) that lead to scientifically justified investigations supported by evidence, and the identification of effective corrective and preventative actions (CAPA). (Prerequisite: SCI 250)

SCI 435 Research and Techniques 4 credits
This course provides the students with an opportunity to master a number of research tehniques through participation in a collaborative research project. Significant time will be spent reading and analyzing scientific literature related to the research project. Emphasis may be given to molecular biology, cell and bacterial culture, or HP-LC mass spectrometry. This course is inteded for students with little to no research experience. Students will meet during regularly scheduled class time to learn techniques and design experiments. Time will be required outside of class to carry out and maintain experiments. (Prerequisites: BIO 130 and CHE 115)

SCI 436 Advanced Research & Techniques 4 credits
This course provides the students with an opportunity to master a number of research techniques through participation in a collaborative research project. Significant time will be spent reading and analyzing scientific literature related to the research project. This course is intended for students that have taken SCI 435 and are interested in further pursuing advanced research opportunities. Time will be required outside of class to carry out and maintain experiments. (Pre-requisite: SCI 435)

SCI 453 Science Senior Capstone 2 credits
This course is a required course for all majors within the Science department and should be taken within two semesters of graduation. This course will focus on key skills required of science graduates: communication, scientific writing, analysis of primary literature, and an ability to describe the research skills gained during laboratory experiences. Part of this course will also emphasize career preparation, focusing on the transition from college to a graduate program or job. (Prerequisite: BIO 120).

SCI 455 Research in Science 4 credits
This course offers students the opportunity to do original research in science under the direction of university faculty. When applicable, the research will result in a presentation at a research symposium. (Prerequisite: BIO 120 and instructor approval)

SCI 456 Advanced Research in Science 4 credits
This course offers students the opportunity to do original research in science under the direction of university faculty. When applicable, the research will result in a presentation at a research symposium. This advanced course is intended for students with prior research experience.