Science Technology (ST)

ST 1100. Perspectives & Themes in Math. 1 Semester Hour.

ST 1102. Perspectives & Themes in Sci. 1 Semester Hour.

ST 1110. Introduction to Biomedical Research. 1 Semester Hour.
The goal of this course is to introduce first- and second-year students, as well as other students who are unfamiliar, to research in the biomedical sciences. Biomedical research is a wide-ranging, multi-disciplinary, and collaborative effort to improve health and better understand disease. Biomedical research topics are broadly relevant to students with varied post-graduate interests including medical, graduate, and other health-professional education and training and prepares students for entry into the biomedical workforces. This course is the first course leading to a biomedical research minor and helping students enter into research. Research is a high-impact educational practice with benefits that include improved academic performance, retention in their respective major and STEM, increased confidence and science-identity. These benefits are maximized the earlier students enter into research. This course will help students discern whether biomedical research is right for them, acquaint them with biomedical scientists in the community, help them to get started in research sooner, and familiarize them to the biomedical research minor. This course will also address the responsible conduct of research (RCR), rigor and reproducibility (RR) in research, research safety, and the importance of mentorship.

ST 1301. Perspectives & Themes in Sci. 3 Semester Hours.

ST 1302. Perspectives & Themes in Sci II. 3 Semester Hours.

ST 2300. Perspectives & Themes in Sci. 3 Semester Hours.
Topics in historical or contemporary issues and themes in the biological and/or physical sciences taught from an interdisciplinary perspective. Topics vary.

ST 2303. Perspectives and Themes in Mathematics and/or Information Technologies. 3 Semester Hours.
Topics in historical or contemporary issues and themes in mathematics and/or information technologies taught from an interdisciplinary perspective. Topics vary.

ST 2400. Perspectives & Themes in Math. 4 Semester Hours.

ST 3000. GRE Preparation. 0 Semester Hours.
(Fall Only) Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 3100. Perspectives and Themes in Sci. 1 Semester Hour.

ST 3110. Biomedical Workshops. 1 Semester Hour.
This course is designed with two goals in mind. First, to give students an opportunity to learn how to communicate science and research to a novice audience. Second, to expose young students to biomedical science and the type of biomedical research being done at St. Mary's University. In this course, students will develop hands-on, skill/technique-focused workshops appropriate for visiting students (high school through elementary level) under the direction of a faculty mentor. This will develop greater competence in the basic lab skills/techniques targeted in the workshops and an increased awareness of issues related to scientific rigor and reproducibility (RR) for each of the basic lab skills/techniques targeted in the workshops. Students will learn and practice clear and effective science communication and develop peer-facilitation and mentoring skills. To enroll in this course, the student must contact the Director of Biomedical Science and Research and complete the necessary paperwork in order to receive credit. This one-hour course can be used to fulfill credits toward one (1) advanced biology course or for advanced elective hours. Prerequisites: ST1110 or concurrent registration in ST1110, or ST3X30, ST4X30. (Fall/Spring/Summer).

ST 3120. Mentored Manuscript Writing. 1 Semester Hour.
This course is required for students minoring in biomedical research which requires the research be summarized in a publication quality product that may include a research thesis, manuscript preparation for publication in undergraduate research journals, pre-prints (bioRxiv) and/or micro publications—it is not required that the product be accepted for publication. Students in class will receive guidance and opportunity for developing a publication quality research thesis or other publication product as agreed upon in consultation with the research mentor. The course will introduce the purpose and typical characteristics of each section of a scientific manuscript, and provide practice writing through the "lens of a question," with cycles of feedback and revision. This course will also cover responsible authorship and accountability, proper citation, plagiarism and strategies to avoid, how to distinguish between falsification and fabrication, authorship policies for journals, and journals suitable for publication of undergraduate research. Prerequisites: ST1110 and permission of research mentor (students' research should be at a stage optimal for writing). (Spring).

ST 3130. Research in Biomedical Sciences. 1 Semester Hour.
Students must participate in a biomedical research project (laboratory-based, computational-based, etc.) under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Director of Biomedical Sciences & Research and complete the necessary paper work in order to receive credit. This course, in combination with other upper-level ST, BL, or BIO courses can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only and/or to satisfy the biomedical research minor hours. Prerequisites: Completion of necessary paper work and approval of the Director of Biomedical Sciences & Research. (Fall/Spring/Summer). Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 3140. U-RISE Training in Biomedical Research. 1 Semester Hour.
This course is for students accepted into the NIH-funded U-RISE Program at St. Mary's University, as well as students participating in partner programs because they have an interest in preparing for and being competitive for admission to a Biomedical PhD program. This course is intended to meet NIH requirements for responsible conduct of research training (RCR). This course will also foster development of a PhD-bound, research cohort that participates in professional and technical skills development, career exploration, mentored application preparation (summer research and PhD programs), presentation of research and conference attendance, networking, mentoring, wellness, and other activities applicable to preparing for graduate school. Prerequisites: ST1110 and permission of the U-RISE Program Director. (Fall/Spring).

ST 3200. Perspectives & Themes in Math. 2 Semester Hours.

ST 3230. Research in Biomedical Sciences. 2 Semester Hours.
Students must participate in a biomedical research project (laboratory-based, computational-based, etc.) under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Director of Biomedical Sciences & Research and complete the necessary paper work in order to receive credit. This course, in combination with other upper-level ST, BL, or BIO courses can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only and/or to satisfy the biomedical research minor hours. Prerequisites: Completion of necessary paper work and approval of the Director of Biomedical Sciences & Research. (Fall/Spring/Summer). Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 3300. Perspectives and Themes in Science and Technology. 3 Semester Hours.
Topics in historical or contemporary issues and themes in the biological and/or physical sciences taught from an interdisciplinary perspective. Topics vary.

ST 3303. Perspectives and Themes in Mathematics and/or Information Technologies. 3 Semester Hours.
Topics in historical or contemporary issues and themes in mathematics and/or information technologies taught from an interdisciplinary perspective. Topics vary.

ST 3311. Perspectives & Themes in Sci. 3 Semester Hours.

ST 3312. Perspectives & Themes in Sci II. 3 Semester Hours.

ST 3330. Research in Biomedical Sciences. 3 Semester Hours.
Students must participate in a biomedical research project (laboratory-based, computational-based, etc.) under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Director of Biomedical Sciences & Research and complete the necessary paper work in order to receive credit. This course, in combination with other upper-level ST, BL, or BIO courses can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only and/or to satisfy the biomedical research minor hours. Prerequisites: Completion of necessary paper work and approval of the Director of Biomedical Sciences & Research. (Fall/Spring/Summer). Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 3430. Research in Biomedical Sci. 4 Semester Hours.

ST 4130. Research in Biomed Sciences. 1 Semester Hour.
Students must participate in a biomedical research project (laboratory-based, computational-based, etc.) under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Director of Biomedical Sciences & Research and complete the necessary paper work in order to receive credit. This course, in combination with other upper-level ST, BL, or BIO courses can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only and/or to satisfy the biomedical research minor hours. Prerequisites: Completion of necessary paper work and approval of the Director of Biomedical Sciences & Research. (Fall/Spring/Summer). Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 4230. Research in Biomed Sciences. 2 Semester Hours.
Students must participate in a biomedical research project (laboratory-based, computational-based, etc.) under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Director of Biomedical Sciences & Research and complete the necessary paper work in order to receive credit. This course, in combination with other upper-level ST, BL, or BIO courses can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only and/or to satisfy the biomedical research minor hours. Prerequisites: Completion of necessary paper work and approval of the Director of Biomedical Sciences & Research. (Fall/Spring/Summer). Additional fee associated with this course. See fee schedule for details at https://www.stmarytx.edu/admission/financial-aid/tuition/.

ST 4330. Research in Biomedical Sciences. 3 Semester Hours.
Students must participate in a laboratory-based research project under the direct supervision of a faculty member from St. Mary's or a research faculty member from another institution. Projects must incorporate the use of the scientific method, experimentation, data analysis, data presentation and interpretation, and the responsibilities of scientific integrity. To enroll in this course, the student must contact the Chair of Biology and complete the necessary paper work in order to receive credit. This course in conjunction with the one-hour seminar course (BL 3125) can be used to fulfill one (1) advanced biology course. The course may be repeated for continuing projects as elective hours only. Prerequisites: Completion of necessary paper work and approval of the Chair of Biology. (Fall/Spring/Summer).