

COB Educational Program

Master of Science in Biomedical Sciences

Overview

The College of Biosciences offers a master of science in biomedical sciences. Students interested in pursuing the accredited master of science in biomedical sciences can enroll in either the 12-month or the research track program (about 2 years).

The 12-month track includes coursework in biochemistry, cell biology, genetics, epidemiology, physiology, molecular biology, neurosciences and anatomy, and places emphasis on the acquisition of knowledge regarding state-of-the-art research methodologies and protocols, regardless of the field one chooses to enter. The research track is designed for individuals interested in pursuing careers as research scientists in major laboratories.

All students in the master of science in biomedical sciences degree programs, whether in the one-year or research track, will be full-time students, unless specifically approved to be part-time. The one-year master's program is more classroom intensive and does not involve the conduct of original research. The research master of science degree program includes advanced courses and requires writing a thesis based upon the results of original research. The time required to conduct original research necessitates this track to at least two-years.

Masters of Science in Biomedical Sciences (One-Year Track)

Standard Curriculum

Fall Semester

BIOS 501	Human Anatomy (3)
BIOS 503	Cell Biology and Histology (3)
BIOS 505	Human Physiology I (3)
BIOS 509	Introduction to Epidemiology (3)
BIOS 513	Biochemistry (3)

Spring Semester

BIOS 502	Human Anatomy(3)
BIOS 506	Human Physiology II (3)
BIOS 507	Neuroscience (3)
BIOS 508	Human Genetics (3)
BIOS 510	Introduction to Research Methodology (2)
BIOS 514	Molecular Biology (3)

Summer Semester

- BIOS 571 Seminar/Mini-Thesis (3)
- BIOS 570 Synthesis/Comprehensive Exam (3)

Length of one-year program is approximately 11 months.

Master of Science in Biomedical Sciences (Research Track) (Approximately Two Years)

Students in the research program will take an individualized curriculum based on their entering backgrounds and goals. Example curriculum noted below:

Fall Semester (First Year)

- BIOS 503 Cell Biology and Histology (3)
- BIOS 513 Biochemistry (3)
- BIOS 505 Human Physiology I (3)
- BIOS 515 Scientific Communications (1)
- BIOS 580 Research Project (3)

Spring Semester (First Year)

- BIOS 508 Human Genetics (3)
- BIOS 506 Human Physiology II (3)
- BIOS 514 Molecular Biology (3)
- BIOS 580 Research Project (3)
- BIOS 520 Research Seminar I (1)

Summer Semester (First Year)

- BIOS 511 Advanced Research Ethics (1)
- BIOS 580 Research Project (5)

Fall Semester (Second Year)

- BIOS 512 Adv. Tech Biochem and Molecular Biology(3)
- BIOS 580 Research Project (9)

Spring Semester (Second Year)

- BIOS xxx Bioscience Elective (3)
- BIOS 580 Research Project (9)
- BIOS 521 Research Seminar II (1)

Summer Semester (Second Year)

- BIOS 522 Seminar III (1)
- BIOS 590 Thesis Dissertation (6)

Length of the Research Track is about 24 months. (This may vary depending on the time needed to complete an original research project, i.e., collect enough data for a thesis dissertation.)

The curriculum for each student in the research track will be determined in consultation with the student and a graduate advisory committee composed of three or more faculty members, at least one of whom should be affiliated with another university. The director of the student's research project will be a member of the committee and serves as the student's academic adviser, as appointed by the Dean of the College of Biosciences. The graduate advisory committee must approve any changes to the originally approved curriculum. The thesis must be successfully defended before the graduate advisory committee to fulfill the requirements for the degree.

Master of Arts in Bioethics

Overview

KCUMB offers Kansas City's only graduate-level degree in bioethics. The bioethics program, which started in 2007, provides students with a broad orientation to the interdisciplinary field of bioethics, attending to both philosophical and religious ethics as well as contributions from the social sciences and medical humanities. Students must complete 30 semester hours of course work.

The final course in the degree program, the final project, allows students to pursue a bioethics question of special interest. This final project may take the form of either a traditional master's thesis or a non-traditional project, such as the creation of a bioethics educational curriculum for in-service training of health-care providers. It is intended as a directed study in which the student works under the direction of a faculty member to make a significant contribution to bioethics. After completion of the project, the student presents their project in a conference with the KCUMB bioethics faculty and selected student peers.

While ensuring that students have a solid foundation in bioethics, the bioethics program encourages critical creative thinking, collaborative work with other students and faculty, and innovative approaches to bioethics problems.

Although the requirements are identical for all students in the master of arts in bioethics program, there are three distinct tracks for completion of the degree:

- Dual degree with the osteopathic medicine program (D.O./M.A.)
- One-year track (full-time)*
- Career enhancement track (part-time)

** Special Note: Students accepted into the one-year bioethics degree program are expected to maintain full-time status in the fall and spring semesters and no less than half-time status in the summer semesters, unless otherwise approved by the dean of the College of Biosciences.*

Master of Arts in Bioethics (One-Year Track)

Standard Curriculum

Summer Semester

BETH 510 Selected Topics (3)

Fall Semester

BETH 501 History and Methodology for Bioethics (3)

BETH 502 Introduction to Bioethics (3)

BETH 503 Religious Perspectives and Bioethics (3)

BETH 504 Diversity, Culture and Bioethics (3)*

– or –

BETH xxx Elective (3)

Students are strongly encouraged to submit their Final Project Proposal (FPP) to their bioethics adviser prior to the conclusion of the fall term.

Spring Semester

BETH 504 Diversity, Culture and Bioethics (3)*

– or –

BETH xxx Elective (3)

BETH 505 Bioethics at the Margins (3)

BETH 508 Clinical Topics in Bioethics (3)

BETH xxx Elective

Summer Semester

BETH 550 Bioethics Final Project (3)

** Special Note: BETH 504 is a required course and will be offered either in the fall or spring semester depending upon scheduling availability.*

Additionally, students in the one-year bioethics degree track are required to submit their Final Project Proposal (FPP) form to their bioethics adviser at least eight weeks prior to enrolling in BETH 550: Bioethics Final Project. Failure to submit the FPP in the appropriate timeframe will result in a hold being placed on the student's academic record, which not only prevents registration and the ability to secure a transcript, but can also delay graduation and/or prevent admission into the COM program.

This track is approximately 12 months in length and is especially designed for students who expect to continue their education by pursuing a D.O., M.D., J.D. or Ph.D. in the future. Today some of the most critical challenges in medicine are ethical issues. These ethical issues include questions about stem cell research, genetic engineering, end-of-life care, health-care equity and public policy, the “globalization” of medical practice and the relationship between environmental quality and human health. It is crucial that persons especially trained in bioethics provide leadership for addressing these vital ethical issues. This track will prepare students to integrate their bioethics degree with another professional or academic degree in order to provide the critical leadership needed for addressing these social and ethical issues.

Master of Arts in Bioethics (Dual-Degree Track)

Fall Semester (MSI)

IDIS 110 Ethics for Physicians (1)*

Spring Semester (MSI)

BETH 506 Exploring the Foundations of Bioethics (2)*

Summer Semester (MSI)

BETH 501 History and Methodology in Bioethics (3)

BETH 504 Diversity, Culture and Bioethics (3)

Fall Semester (MSII)

BETH 503 Religious Perspective on Bioethics (3)

Spring Semester (MSII)

BETH 505 Bioethics at the Margins (3)

Summer Semester (MSII)

BETH xxx Elective (3)

BETH xxx Elective (3)

Fall Semester (MSIII)

BETH 507 Clinical Dilemmas Seminar (3)

Spring Semester (MSIII)

BETH xxx Elective (3)

Fall and/or Spring Semester (MSIV)

BETH 550 Bioethics Final Project

The dual-degree track is approximately 44 months in length and is designed for KCUMB medical students who decide to pursue a joint master's degree in bioethics. Since dual degree students are not required to remain in Kansas City for their third- and fourth-year clerkships, some of their course work is delivered online. This degree is especially designed for students who want to provide leadership as physicians in helping to address the plethora of complex ethical issues confronting medicine today. With the joint degree, graduates should be especially well placed to provide bioethical leadership on hospital ethics committees, among their physician peers and in the local community. This degree should also help students be more competitive when applying for residencies or fellowships after obtaining their medical degree.

* Special Note: Dual degree students who are simultaneously completing the D.O. program and M.A. in bioethics program may substitute a combination of IDIS 110: Ethics for Physicians and BETH 506: Exploring the Foundations of Bioethics in lieu of the required course, BETH 502: Introduction to Bioethics. However, dual degree bioethics students who choose this option may not use IDIS 110 to partially fulfill their 4 semester elective requirement in the D.O. program.

Master of Arts in Bioethics (Career Enhancement Track)

This track is designed for health-care professionals – physicians, nurses, social workers, attorneys, chaplains, medical technicians, etc., who have developed an interest in bioethics professionally and would like to pursue master’s-level training in bioethics. These students may pursue the master’s degree on a part-time basis, although the expectation is that the degree will be completed by five years. There is no required order of courses for completion of the bioethics degree. Therefore, career enhancement students may take the required and elective courses in the order that works best for their individual schedules.