COLLEGE OF MEDICINE

As the 7th oldest medical school in the nation, the College of Medicine has a longstanding reputation for educating and training superb physicians and scientists, fostering groundbreaking research to improve patients’ lives, and actively engaging with the community of Vermont and the region.

In addition to educating medical students, the College of Medicine offers an undergraduate minor in pharmacology as well as a variety of courses available to undergraduate students.

MINORS

- Pharmacology

Anatomy Neurobiology Courses

ANNB 195. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

ANNB 196. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

ANNB 197. Undergrad Research. 1-6 Credits.
Individual laboratory research under guidance of faculty member. Prerequisite: Department permission.

ANNB 198. Undergrad Research. 1-6 Credits.
Individual laboratory research under guidance of faculty member. Prerequisite: Department permission.

ANNB 201. Human Gross Anatomy. 6 Credits.
Lectures and detailed regional cadaver dissections emphasize functional anatomy of major systems (e.g. musculoskeletal, cardiovascular, nervous). Required of Physical Therapy students; others with Department permission.

ANNB 261. Neurobiology. 3 Credits.
Focus on molecular and cellular aspects of the nervous system. Electrical signaling, synaptic transmission, signal transduction, neural development, plasticity, and diseases. Prerequisite: BIOL 103 or ANPS 019 & ANPS 020. Cross-listed with: BIOL 261.

ANNB 295. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles. Undergraduate only.

ANNB 296. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles. Undergraduate only.

Anatomy/Physiology Courses

ANPS 019. Ugr Hum Anatomy & Physiology. 4 Credits.
Two-semester lecture course with credit given upon completion of each semester. Structure and function of human body will be presented in a three lecture/week format with an additional online lab component. Completion of additional self-study units will be required. Required of all PRNU DIET, NFS, PE, ME, RADT, NMT, MLS, AT, EXMS and BSCI students; others with Instructor permission.

ANPS 020. Ugr Hum Anatomy & Physiology. 4 Credits.
The two-semester lecture course with credit given upon completion of each semester. Structure and function of human body will be presented in a three lecture/week format with an additional online lab component. Completion of additional self-study units will be required. Required of all PRNU DIET, NFS, PE, ME, RADT, NMT, MLS, AT, EXMS and BSCI students; others with Instructor permission. Prerequisite: ANPS 019.

ANPS 095. Introductory Special Topics. 1-4 Credits.

ANPS 096. Introductory Special Topics. 1-4 Credits.

Biochemistry Courses

BIOC 095. Introductory Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BIOC 096. Introductory Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BIOC 185. Survey of Biochemistry. 3 Credits.
Broad coverage of biochemical topics suitable for students in the applied health sciences. Prerequisites: CHEM 042 or acceptable coursework in organic chemistry. Cross-listed with: PBIO 185.

BIOC 187. Survey of Biochemistry: Lab. 1 Credit.
Introduction to techniques and equipment used for the isolation and quantitative analysis of amino acids, proteins, carbohydrates and DNA enzymes in biological materials. Pre/co-requisite: BIOC 185. Cross-listed with: PBIO 187.

BIOC 191. Undergraduate Research. 1-6 Credits.
Participation in a research program currently being pursued by a faculty member of department. Written report due at end of each semester. Prerequisites: CHEM 031, CHEM 032 or CHEM 035, CHEM 036. Some programs may require additional courses in Biology or Chemistry. Credit as arranged, up to four hours per semester.

BIOC 192. Undergraduate Research. 1-18 Credits.
Participation in a research program currently being pursued by a faculty member of department. Written report due at end of each semester. Prerequisites: CHEM 031, CHEM 032 or CHEM 035, CHEM 036. Some programs may require additional courses in Biology or Chemistry. Credit as arranged, up to four hours per semester.

BIOC 195. Intermediate Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BIOC 196. Intermediate Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BIOC 205. Biochemistry I. 3 Credits.
Introduction to chemistry and structure of biological macromolecules; examination of mechanisms of chemical processes in biological systems including enzyme catalysis, biosynthesis, regulation, and information transfer. Prerequisite: CHEM 142 or CHEM 144. Cross-listed with: CHEM 205 and MMG 205.
BIOC 206. Biochemistry II. 3 Credits.
Continuation of Biochemistry I, Biochemistry of nucleic acids; nucleic acid based processes, such as replication and transcription; cellular information transfer, genomics, and proteomics. Prerequisite: BIOC 205. Cross-listed with: CHEM 206, MMG 206.

BIOC 207. Biochemistry Lab. 2 Credits.
Introduction to biochemical tools, including spectrometry, chromatography, and electrophoresis; natural and recombinant enzyme isolation; assays of DNA-modifying enzymes; computer-based structure/function exercises. Co-requisite: BIOC 205 or BIOC 206. Cross-listed with: CHEM 207, MMG 207.

BIOC 212. Biochemistry of Human Disease. 3 Credits.
Molecular approach to genetic, metabolic, and infectious diseases; recombinant DNA technology and medicine; molecular biology of cancer. Prerequisites: CHEM 042 or CHEM 141.

BIOC 240. Macromol Struct Prot&Nucl Acid. 3 Credits.
Introduction to structural biology and macromolecular structure with an emphasis on protein-protein and protein-nucleic acids interactions. Prerequisites: BIOL 001, BIOL 002; Organic Chemistry; Junior standing recommended. Cross-listed with: MMG 240. Alternate years.

BIOC 284. Biochemistry Senior Seminar. 1 Credit.
Oral and written presentation of a subject of current biochemical interest. Prerequisites: Audit of BIOC 381. Cross-listed with: CHEM 284, MMG 284.

BIOC 295. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

BIOC 296. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

Graduate Courses
GRAD 291. Undergrad Research. 3 Credits.

Molecular Physiology Biophysics Courses
MPBP 019. UG Human Anatomy & Physiology. 4 Credits.
Two-semester course with credit given only upon completion of both semesters. Structure and function of human body using cadaver dissections, histological material, and physiological experiments. Required of Medical Technology, Nursing, Nutritional Sciences, Dental Hygiene, Radiologic Technology, and Physical Education; others with Instructor permission. Prerequisite: MATH 019 for MATH 020.

MPBP 020. UG Human Anatomy & Physiology. 4 Credits.
Two-semester course with credit given only upon completion of both semesters. Structure and function of human body using cadaver dissections, histological material, and physiological experiments. Required of Medical Technology, Nursing, Nutritional Sciences, Dental Hygiene, Radiologic Technology, and Physical Education; others with Instructor permission. Prerequisite: MATH 019 for MATH 020.

MPBP 191. Undergraduate Research. 3-6 Credits.
Individual laboratory research under guidance of faculty member. Prerequisite: Department permission.

MPBP 192. Undergraduate Research. 3-6 Credits.
Individual laboratory research under guidance of faculty member. Prerequisite: Department permission.

MPBP 295. Advanced Special Topics. 0-6 Credits.
Topics of interest to high level Undergraduate and Graduate students beyond the scope of existing courses.

Neuroscience Courses
NSCI 095. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 096. Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 097. Readings & Research. 1-6 Credits.

NSCI 098. Readings & Research. 1-6 Credits.

NSCI 110. Exploring Neuroscience. 0 or 4 Credits.
Neuroscience survey, including cellular and molecular functioning of neurons, anatomical and functional organization of the nervous system, and diseases of the nervous system. With lab. Prerequisites: PSYC 001, BCOR 011, BCOR 012.

NSCI 195. Intermediate Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 196. Intermediate Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 197. Intrmd Readings & Research. 1-6 Credits.

NSCI 198. Intrmd Readings & Research. 1-6 Credits.

NSCI 225. Human Neuroanatomy. 0-3 Credits.
Functional anatomy of the human nervous system and its cells. Focus on both peripheral and central nervous system. Lectures and laboratory (gross and microscopic anatomy). Prerequisite: Instructor permission.

NSCI 270. Diseases of the Nervous System. 3 Credits.
Senior level, seminar-style capstone course in which students bring together information learned in other courses for an in-depth study of disease states of the nervous system. Pre/co-requisites: NSCI 110 and Senior standing.

NSCI 295. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 296. Advanced Special Topics. 1-18 Credits.
See Schedule of Courses for specific titles.

NSCI 297. Advanced Readings & Research. 1-6 Credits.

NSCI 298. Advanced Readings & Research. 1-6 Credits.
Obstetrics Gynecology Courses

OBY 295. Advanced Special Topics. 1-12 Credits.
Lectures, readings and discussion for advanced students within areas of expertise of faculty and staff. Prerequisite: Permission of the Instructor.

Orthopedic Surgery Courses

ORTH 291. Rsch in Orth & Rehab. 3 Credits.
Work on research problem under the direction of a faculty member. Review of literature, preparation of manuscript. Prerequisite: Instructor permission. In collaboration with clinical faculty of the Department.

ORTH 292. Special Topics:Orthopaedics. 3 Credits.
Work on research problem under the direction of a faculty member. Review of literature, preparation of manuscript. Prerequisite: Instructor permission. In collaboration with clinical faculty of the Department.

Pathology Courses

PATH 101. Intro to Human Disease. 3 Credits.
Elementary course in human pathology designed for Allied Health students. First portion deals with general mechanisms of disease, followed by disorders of specific organs. Prerequisite: College biology, anatomy, and physiology.

PATH 295. Advanced Special Topics. 1-3 Credits.
See Schedule of Courses for specific titles.

Public Health Courses

PH 196. Intermediate Special Topics. 1-18 Credits.

Pharmacology Courses

PHRM 201. Introduction to Pharmacology. 3 Credits.
This course will focus on biochemical and physiological actions of prototype drugs used in the treatment and prevention of human diseases. Prerequisite: Introductory courses in Biology and Organic Chemistry.

PHRM 240. Molecules & Medicine. 3 Credits.
This course conveys an understanding about drug design and the molecular mechanisms by which drugs act in the body. It highlights the importance of medicinal chemistry as it overlaps with the disciplines of chemistry, biochemistry, microbiology, cell biology, and pharmacology. Prerequisites: Intro to Organic Chemistry, Intro to Biology; Permission.

PHRM 272. Toxicology. 3 Credits.
This course is intended to provide an understanding of the chemical, biochemical and physiological factors that determine the pathological effects of chemicals in living systems. Prerequisites: Organic chemistry, background in Biology, or Instructor permission.

PHRM 290. Topics Molecular&Cell Pharm. 3 Credits.
Focuses on basic principles, drug interactions with receptors, membranes, synapses, neurotransmitters, macromolecules, cytoskeleton, ion channels and pumps, and mechanisms of drug resistance. Prerequisite: Introductory course in organic chemistry, background in physiology or health sciences.

PHRM 297. Advanced Pharmacology Research. 2 Credits.
Independent laboratory research performed under faculty supervision in an area of ongoing pharmacology research. Students must make arrangements with faculty prior to registering. Prerequisite: PHRM 201.

Surgery Courses

SURG 195. EMT - Basic. 1-6 Credits.
SURG 196. EMT - Basic. 1-6 Credits.
SURG 197. EMT - Intermediate. 3 Credits.
SURG 198. EMT - Intermediate. 3 Credits.
SURG 200. Emergency Medicine Research I. 3 Credits.
Introduction to research in emergency medicine with a laboratory focusing on human subjects research in the emergency department. Prerequisites: Junior status or Instructor permission; completion of mandatory hospital training at least one month before semester.

SURG 201. Emergency Medicine Research II. 3 Credits.
Advanced discussion and research training in emergency medicine with continued emergency department-based human subjects laboratory. Prerequisite: SURG 200.

SURG 220. Adv Topics Emerg Med Research. 3-6 Credits.
Emergency medicine research under guidance of a faculty member. Prerequisites: SURG 200, SURG 201 and/or faculty permission.

SURG 295. Advanced Special Topics. 1-6 Credits.
See Schedule of Courses for specific titles. Prerequisite: Instructor permission.