

LARNER COLLEGE OF MEDICINE

As the 7th oldest medical school in the nation, the Larner 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 and graduate students, the Larner College of Medicine is affiliated with the cross-college minor and major in Biochemistry, and offers undergraduate minors in Pharmacology and Behavioral Change Health Studies, as well as a variety of courses available to undergraduate students.

MINORS

- Behavioral Change Health Studies (<http://catalogue.uvm.edu/undergraduate/medicine/behavioralchangehealthstudiesminor/>)
- Affiliated with the cross-college minor and major in Biochemistry (<https://www.uvm.edu/biochemistry/>)
- Pharmacology (<http://catalogue.uvm.edu/undergraduate/medicine/pharmacologyminor/>)

Anatomy Neurobiology Courses

ANNB 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANNB 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANNB 096. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

ANNB 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANNB 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANNB 193. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

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. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Prerequisite: Department Permission.

ANNB 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Prerequisite: Department permission.

ANNB 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANNB 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANNB 293. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

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.

ANNB 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small tea research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Anatomy/Physiology Courses

ANPS 019. Ugr Hum Anatomy & Physiology 1. 4 Credits.

Part I of two-semester course sequence. Structure and function of human body.

ANPS 020. Ugr Hum Anatomy & Physiology 2. 4 Credits.

Part II of two-semester course sequence. Structure and function of human body. Prerequisite: ANPS 019.

ANPS 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANPS 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANPS 095. Introductory Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ANPS 096. Introductory Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ANPS 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANPS 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANPS 193. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

ANPS 195. Intermediate Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ANPS 198. Undergraduate Research. 1 or 18 Credit.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Prerequisite: Department permission.

ANPS 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ANPS 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ANPS 293. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

ANPS 295. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

ANPS 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Biochemistry Courses**BIOC 001. Biochem: Modern Perspect I. 1 Credit.**

This is Part I of a sequence to help students develop an understanding of what the field of biochemistry is, its core principles, and what biochemists do. Prerequisites: Biochemistry major, First-year standing.

BIOC 002. Biochem: Modern Perspect II. 1 Credit.

This is Part 2 of a sequence to help students develop an understanding of what the field of biochemistry is, its core principles, and what biochemists do. Prerequisites: Biochemistry major, First-year standing.

BIOC 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BIOC 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

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 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BIOC 191. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Written report due at end of each semester. Prerequisite: Instructor permission. Credit as arranged, up to four hours per semester.

BIOC 192. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Written report due at end of each semester. Prerequisite: Instructor permission.

BIOC 193. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BIOC 194. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

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 201. Fundamentals of Biochemistry. 3 Credits.

Provides a broad introduction to the field of biochemistry.

Students will explore the molecular basis and chemical principles of biochemistry pertinent to living systems. This course is taught by LCOM faculty and emphasizes the relevance of biochemistry to health, disease, physiology and medicine. Prerequisites: CHEM 026, CHEM 042, CHEM 048, CHEM 142, or equivalent; BIOL 002, BCOR 012, BCOR 103, or equivalent.

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 048 or 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, CHEM 205, or MMG 205. Cross-listed with: CHEM 206, MMG 206.

BIOC 207. Biochemistry Lab. 3 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. Prerequisite: BIOC 205, CHEM 205, or MMG 205. Cross-listed with: CHEM 207, MMG 207.

BIOC 263. Nutritional Biochemistry. 3 Credits.

Comprehensive study of the metabolism of the macro-nutrients by humans with emphasis on hormonal control of biochemical pathways, nutritional and metabolic interrelationships and dietary disorders. The biochemistry of the micronutrients and vitamins will also be studied. Prerequisite: BIOC 201, BIOC 205 or NFS 183.

BIOC 275. Adv Biochem of Human Disease. 3 Credits.

The course takes a deep dive into five distinct areas of biochemistry related to a disease or group of diseases primarily through group learning. Key biochemical principles are reviewed and extended. Additionally students will read and discuss a primary literature article with each area. Prerequisites: NSF 183, BIOC 201, or BIOC 205.

BIOC 284. Biochemistry Senior Seminar. 1 Credit.

Oral and written presentation of a subject of current biochemical interest. Prerequisite: Senior standing.

BIOC 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

BIOC 292. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BIOC 293. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

BIOC 294. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

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.

College of Medicine Undergraduate Courses**COMU 001. Healthy Brains, Healthy Bodies. 3 Credits.**

Examines the effects the college experience has on the minds and bodies of individuals. Students will learn the basic physiological and psychological factors that are associated with optimal physical and cognitive functioning at every stage of life.

COMU 002. Intro to Medical Imaging. 3 Credits.

Medical imaging plays a central role in healthcare delivery. Students will learn about X-Ray, CT, MRI, PET, and ultrasound imaging. Their clinical applications and role in healthcare both in the US and around the world will be discussed.

COMU 021. Your Brain on Drugs. 3 Credits.

Demonstrates the effects of drugs and alcohol on behavior and the brain. Pre/Co-requisite: COMU 001.

COMU 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

COMU 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

COMU 096. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

COMU 122. Family Wellness Coaching. 3 Credits.

Introduces students to the science behind health promotion in a family setting. Students will learn about motivational interviewing and family based, evidenced based strategies to raise healthy children and keep families healthy in all areas of life. Pre/Co-requisites: COMU 001.

COMU 123. The Effects of Adversity. 3 Credits.

Provide students with an understanding of how adversity affects the brain and genome through the use of imaging techniques such as MRIs and EEGs, epigenetics, and questionnaire data. Pre/Co-requisite: COMU 001.

COMU 125. The Science of Happiness. 3 Credits.

Surveys the science of well-being with a goal toward up-ending the standard medical approach of curing illness or reducing dysfunction in favor of pursuits such as making meaning, pursuing goals, enhancing well-being, and fulfilling potential. Prerequisite: COMU 001.

COMU 131. Sex, Love, Neurosci of Relationships. 3 Credits.

Surveys the state-of-science of close relationships, sexual behavior, and the human experience of love and intimacy. Examines the neurobiology of love and relationships while exploring aspects of attraction, attachment, affection, identity, pathology, and neurodiversity. Prerequisite: COMU 001.

COMU 150. Sleep and the Brain. 3 Credits.

Discusses topics including neurobiology of sleep, sleep across the lifespan, and neuropsychological/psychiatric correlates of sleep. Students will also have the opportunity to engage in sleep assessments and debate topics pertinent to sleep science. Prerequisite: COMU 001.

COMU 153. Anxiety, Inattention & the Brain. 3 Credits.

Provides an in-depth examination of the functional neuroanatomy and clinical phenomenology associated with common emotional and behavioral problems that arise during childhood, adolescence, and early adulthood. Topics will include inattention/hyperactivity, anxiety, depression, autism spectrum, and externalizing problems. Emphasis on human neuroimaging studies. Prerequisite: COMU 001.

COMU 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

COMU 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

COMU 195. How You Became You: Personality Development. 3 Credits.

Explores the development of temperament and personality from early childhood to adulthood. Students first assess their own personality, then course proceeds in three parts: fundamental concepts, influences on personality, and special topics. Prerequisite: COMU 001 or PSYS 001.

COMU 196. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

COMU 197. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

COMU 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

COMU 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

COMU 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded.

COMU 296. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

COMU 297. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

COMU 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Molecular Physiology Biophysics Courses**MPBP 090. Internship. 1-3 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

MPBP 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

MPBP 095. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

MPBP 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

MPBP 191. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion. Prerequisite: Department permission.

MPBP 192. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion. Prerequisite: Department permission.

MPBP 193. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

MPBP 195. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

MPBP 197. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

MPBP 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

MPBP 292. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

MPBP 293. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

MPBP 295. Advanced Special Topics. 1-18 Credits.

Topics of interest to high level Undergraduate and Graduate students beyond the scope of existing courses.

MPBP 297. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

Neuroscience Courses**NSCI 030. First-Yr Neuroscience Seminar. 1 Credit.**

Introduces first-year neuroscience majors to the field of neuroscience by introducing students to different perspectives and subfields through researchers and students at UVM.

NSCI 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NSCI 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

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 111. Exploring Neuroscience. 3 Credits.

In-depth survey of neuroscience topics, including neuron function, the anatomical and functional organization of the nervous system, and diseases of the nervous system. Prerequisites: PSYS 001; and one of the following: (BIOL 001 and BIOL 002) or (BCOR 011 and BCOR 012) or BCOR 021 or (ANPS 019 and ANPS 020). Pre/Co-requisites: CHEM 023 or CHEM 031.

NSCI 112. Exploring Neurosci Laboratory. 1 Credit.

Laboratory course in neuroscience designed to provide hands-on experience with methods of inquiry in neuroscience. Goals of this course include the development of problem-solving skills, data analysis, the scientific method, and science communication. Neuroscience majors only. Prerequisites: PSYS 001; CHEM 023 or CHEM 031; and one of the following: (BIOL 001 and BIOL 002) or (BCOR 011 and BCOR 012) or BCOR 021 or (ANPS 019 and ANPS 020).

NSCI 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NSCI 192. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

NSCI 193. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

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. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NSCI 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

NSCI 210. Model Systems in Neuroscience. 3 Credits.

Provides students with a deeper level of scientific fluency with guidance on how to critically read and understand primary scientific literature and how to communicate those findings, using model systems as our guide. Prerequisites: BCOR 101 and (BCOR 103 or NSCI 111). Cross-listed with: BIOL 210.

NSCI 222. Cellular Neurophysiology. 3 Credits.

Fundamentals of cellular neurophysiology through lecture, independent student reading and faculty-led group discussions of journal articles. Prerequisites: NSCI 110 or, NSCI 111 and NSCI 112, or Instructor Permission.

NSCI 225. Human Neuroanatomy. 0 or 3 Credits.

Functional anatomy of the human nervous system on both the microscopic and macroscopic scales. Focuses on the structures of the peripheral nervous system, spinal cord, and brain, and how they work together to achieve behavior. Lectures and a required laboratory (gross and microscopic anatomy). Prerequisite: NSCI 111.

NSCI 230. Comparative Neurobiology. 3 Credits.

Examination of the cellular mechanisms that underlie selective motor and sensory abilities, and unique behaviors that have evolved in various species. Discussion and student presentations. Prerequisite: ASCI 141 or BIOL 106 or NSCI 111 or PSYS 115 or Instructor permission.

NSCI 255. Neuroregeneration. 3 Credits.

Clinical neuroscience of injury and healing in the human nervous system, factors leading to different outcomes, and the impact of successful and failed repair on functional recovery. Explores cutting-edge approaches to treating neurological disease. Prerequisite: NSCI 111 or BIOL 261.

NSCI 261. Neurobiology for Majors. 3 Credits.

Exploration of the fundamental concepts in neurobiology. Topics include cell biology of the nervous system, electrical signaling/synaptic transmission, signal transduction, plasticity, and motor and sensory systems, and behavioral neuroscience. Credit not awarded for both BIOL 261 and NSCI 261. Prerequisites: BCOR 101, NSCI 111.

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 280. Glia: Not Just Neuron Glue. 3 Credits.

Interdisciplinary course in which students engage in a focused, in-depth exploration of how glial cells contribute to neurological and psychiatric disorders. Prerequisites: NSCI 111; Course director approval. Pre/Co-requisites: NSCI 111; Course Director permission.

NSCI 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

NSCI 292. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

NSCI 293. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

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. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team specific student, which occurs outside the traditional, for which credit is awarded. Offered at department discretion.

NSCI 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Obstetrics Gynecology Courses**OBGY 200. Understanding Human Pregnancy. 3 Credits.**

Healthy pregnancy outcome depends on a confluence of sexual, social and biological processes. Explores the female sexual response, how a child is conceived (or not), maternal gestational physiology and embryology, and medical management of common diseases. Prerequisite: ANPS 019 and ANPS 020, or ASCI 141, or BIOL 255 or Instructor permission.

OBGY 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. 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 293. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Pathology Courses

PATH 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PATH 092. Independent Study. 1-18 Credits.**PATH 095. Special Topics. 1-18 Credits.**

See schedule of courses for specific titles.

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. Prerequisites: ANPS 019 and ANPS 020.

PATH 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PATH 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PATH 195. Special Topics. 1-18 Credits.**PATH 197. Teaching Assistantship. 1-3 Credits.**

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PATH 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PATH 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PATH 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PATH 295. Advanced Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

PATH 297. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PATH 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Public Health Courses

PH 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PH 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PH 096. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

PH 100. Careers in Public Health. 1 Credit.

Students learn the public health functions and services through the lens of the public health workforce. Careers in public health and related fields are explored.

PH 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PH 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

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

See Schedule of Courses for specific titles.

PH 197. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PH 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PH 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PH 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PH 296. Special Topics. 1-18 Credits.**PH 297. Teaching Assistantship. 1-3 Credits.**

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PH 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

Pharmacology Courses**PHRM 091. Internship. 1-3 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PHRM 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PHRM 096. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

PHRM 191. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PHRM 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PHRM 193. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PHRM 196. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

PHRM 197. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PHRM 200. Medical Cannabis. 3 Credits.

An introduction to the pharmacology underlying recreational and medicinal uses of Cannabis. Focuses on Cannabis taxonomy, chemistry of cannabinoids, physiological effects, and emerging therapeutic applications. Discusses historical, political and socio-economic influences on medical marijuana legislation. Prerequisite: BCOR 103, NSCI 110, NSCI 111 or PHRM 201, or Instructor permission.

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, macromoles, cytoskeleton, ion channels and pumps, and mechanisms of drug resistance. Prerequisite: Introductory course in organic chemistry, background in physiology or health sciences.

PHRM 291. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

PHRM 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

PHRM 293. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

PHRM 296. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

PHRM 297. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Prerequisite: PHRM 201. Offered at department discretion.

Surgery Courses**SURG 090. Internship. 1-3 Credits.**

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

SURG 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

SURG 096. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

SURG 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

SURG 191. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

SURG 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

SURG 193. Special Topics. 1-18 Credits.

See schedule of courses for specific titles.

SURG 194. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

SURG 200. Emergency Medicine Research I. 4 Credits.

Lecture course with 4 hour lab. Introduction to research in Emergency Medicine with clinical exposure including shadowing EMTs, RNs, and MDs. Students will learn about research ethics, informed consent, and clinical epistemology. Prerequisites: Minimum Sophomore standing and Instructor permission; First-Year students who have prior clinical experience (e.g. EMTs) or are non-traditional students are considered on a case-by-case basis.

SURG 201. Emergency Medicine Research II. 4 Credits.

Advanced discussion and research training in emergency medicine with continued emergency department-based human subjects laboratory. Includes eight hours of clinical time per week helping recruit patients for ongoing research projects as well as a one hour seminar per week. Prerequisites: SURG 200 with minimum grade B; Instructor permission.

SURG 220. Emerg. Medicine Research III. 3 Credits.

Emergency medicine research under guidance of a faculty member, including facilitating study enrollment and implementation of research project proposed during SURG 201. Prerequisites: SURG 200, SURG 201; Instructor permission.

SURG 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

SURG 291. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory level course in the discipline, for which credit is awarded. Offered at department discretion.

SURG 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

SURG 294. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

SURG 295. Advanced Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles. Prerequisite: Instructor permission.