The University of Illinois at Urbana-Champaign Doctor of Medicine (MD) program is conducted on the Urbana Campus in the Carle Illinois College of Medicine. The college offers a professional, four-year MD degree program that integrates engineering concepts with the traditional pillars of medicine, namely the basic health sciences and clinical training, and prepares students for postgraduate medical education programs. This curriculum produces students who are trained and equipped to incorporate analytical and quantitative techniques, modeling and computation, innovation, and human systems approaches to advancing and delivering high quality healthcare. The curriculum emphasizes professional, compassionate, and ethical care and the utilization of team-based approaches to transform healthcare delivery and improve healthcare outcomes through the continuum of care: preventive medicine through acute care. In addition to required courses, elective rotations provide opportunities for students to explore specialized areas of interest. The educational program spans four (4) years. Students are exposed to extensive clinical training, professional development and scientific and engineering education through a case-driven active learning curriculum.

The college selects applicants with the best combination of academic and extracurricular achievement, maturity, integrity, and motivation. Selection of students is based on an assessment of all available data and an evaluation of skills and aptitude. The quality of work in all subject areas is considered, with an emphasis on quantitative methods, breadth of education, and experiences that demonstrate initiative, creativity and interest in compassionate patient care.

For more information about the University of Illinois at Urbana-Champaign MD program, including Admissions, Financial Aid, and the Curriculum, please consult https://medicine.illinois.edu/.

BSE Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/BSE/)

### Biomedical Sciences Engr Courses

**BSE 612  Foundations: Molecules to Populations  credit: 13 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/612)

This course, which covers the fundamental elements of medical science, serves as a baseline for the rest of the medical school curriculum. Topics to be covered include foundational anatomy, cell biology, histology, physiology, integration of engineering science, systems, microbiology, pharmacology, genetics, and behavioral science, concepts of populations, social behavior, chronic disease, health care team, patient safety, statistics, big data, Patient-Centered Medical Home, palliative care, quality, compensation, and mobile health technologies. No graduate credit. 13 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 631  Cardiovascular  credit: 4 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/631)

Topics include ischemic heart Dx, cardiomyopathy/CHF, aortic stenosis, atrial fibrillation, peripheral vascular disease, pediatric ASD. No graduate credit. 4 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 632  Respiratory  credit: 3 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/632)

Topics include asthma – peds, COPD, Pulmonary Fibrosis, Respiratory failure, pulmonary vasculitis. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 633  Renal  credit: 3 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/633)

Topics include UTI with pyelonephritis, urinary obstruction-BPH, acute renal failure-toxic, chronic renal failure-DM, polycystic renal disease-peds. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 634  Clinical Neuroscience  credit: 5 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/634)

Topics include neurovascular disorders, seizures, brain injury, dementia, tumors of the brain, disorders involving neuroinflammation, psychotic disorders, affective disorders, anxiety disorders, as well as disorders of the peripheral nervous system and neuromuscular junction. No graduate credit. 5 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 635  Musculoskeletal  credit: 4 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/635)

Topics include primary inflammatory diseases such as rheumatoid arthritis, lupus, polymyalgia rheumatica and associated disorders, degenerative diseases of the joints such as osteoarthritis, primary diseases of muscle, primary diseases of bone such as osteoporosis and osteogenesis imperfecta as well as mechanical trauma to bone leading to fracture. No graduate credit. 4 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 636  Digestion  credit: 3 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/636)

Topics include GERD with stricture/Barretts, Crohn's disease, peptic ulcer disease with hemorrhage, chronic diarrhea, pyloric stenosis – peds hepatitis C, colonic polypsis No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 637  Nutrition & Metabolism  credit: 2 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/637)

Topics include malabsorption syndrome, vitamin D deficiency, G6PD deficiency, TPN, obesity. No graduate credit. 2 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

**BSE 638  Endocrinology  credit: 3 Hours.** (https://courses.illinois.edu/schedule/terms/BSE/638)

Topics include diabetes – type II, ketoacidosis, hypothyroidism, hyperthyroidism, adrenal insufficiency, Cushing’s syndrome, diabetes insipidus. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.
BSE 639 Genitourinary credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/BSE/639)
Topics include hypogonadism, erectile dysfunction, testicular torsion, infertility, sexual orientation, BPH. No graduate credit. 2 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 640 Women’s Health credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BSE/640)
Topics include dysmenorrhea, menorrhagia, polycystic ovarian disease, cervical dysplasia, menopause – vasomotor, pelvic pain. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 641 Obstetrics credit: 2 Hours. (https://courses.illinois.edu/schedule/terms/BSE/641)
Topics include normal delivery, breach, multiple gestation, medical illness of pregnancy – diabetes, placenta previa. No graduate credit. 2 professional hours. Approved for S/U grading only. Prerequisite: Restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 642 Hematology & Oncology credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BSE/642)
Topics include lung cancer, colon cancer, breast cancer, renal cancer, prostate cancer, pancreatic cancer, iron deficiency anemia, sickle cell anemia, lymphoma- non-Hodgkin, acute myelocytic leukemia, chronic lymphocytic leukemia, idiopathic thrombocytopenia. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 643 Infection & Immunity credit: 3 Hours. (https://courses.illinois.edu/schedule/terms/BSE/643)
Topics include pneumonia, sepsis UTI – pyelonephritis, cellulitis, HIV anaphylaxis, allergic dermatitis, myocardiitis encephalitis. No graduate credit. 3 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 650 Global Studies/Service Learning Elective credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/BSE/650)
This course will engage the student in interdisciplinary studies or projects and demonstrate understanding of complex global events and processes of globalization. Students will learn about issues and problems in health care from a global perspective. No graduate credit. 1 to 4 professional hours. Approved for S/U grading only. May be repeated to a maximum of 28 hours. Prerequisite: This course is restricted to Carle Illinois College of Medicine students.

BSE 655 Research Elective credit: 1 to 16 Hours. (https://courses.illinois.edu/schedule/terms/BSE/655)
The goal of this course is to introduce the students to the foundations of selected multi-disciplinary research in medical/engineering field. Students will learn about the purpose for research; identifying researchable issues; finding, evaluating, and using sources effectively; recognizing methods associated with different types of data and disciplines; and writing a literature review. No graduate credit. 1 to 16 professional hours. Approved for S/U grading only. May be repeated up to 16 hours in the same semester, to a maximum of 64 hours in separate semesters. Prerequisite: This course is restricted to Carle Illinois College of Medicine students.

BSE 660 Self-Designed Study credit: 1 to 16 Hours. (https://courses.illinois.edu/schedule/terms/BSE/660)
Students will develop skills and gain experience working collaboratively with other professional through a self-designed study. Develop a self-guided study when students have an interest in an intellectual issue that is best studied through an integrative approach based in multiple academic disciplines. This course will introduce the student to a selected multi-disciplinary study or project in the medical/engineering field. This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

BSE 665 Special Topics credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/BSE/665)
Subject offerings of new and developing areas of knowledge in medicine intended to augment the existing curriculum. No graduate credit. 1 to 4 professional hours. Approved for S/U grading only. May be repeated to a maximum of 16 hours in the same or subsequent semesters. Prerequisite: This course is restricted to Carle Illinois College of Medicine students.

CLE Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/CLE)

Clinical Sciences Engr Courses

CLE 611 Clinical Integration I credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/CLE/611)
This course examines and exposes to the fundamentals of clinical work including office support with basic history, vitals, understanding the team, communicating with patients, observing health care roles and processes. No graduate credit. 6 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

CLE 612 Clinical Integration II credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/CLE/612)
This course examines and exposes to the fundamentals of clinical work including office support with basic history, vitals, understanding the team, communicating with patients, observing health care roles and processes. No graduate credit. 6 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

CLE 621 Physical Diagnosis I credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/CLE/621)
This course addresses concepts of history and physical assessment, includes H&P, preoperative assessment, routine physicals. No graduate credit. 6 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.

CLE 622 Physical Diagnosis II credit: 6 Hours. (https://courses.illinois.edu/schedule/terms/CLE/622)
This course addresses concepts of history and physical assessment, includes H&P, preoperative assessment, routine physicals. No graduate credit. 6 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.
CLE 631  Clinical Elective  credit: 1 to 4 Hours. (https://courses.illinois.edu/schedule/terms/CLE/631)
This course will expose the students to a clinical specialty to learn more about treatment of disorders, lifestyle of the physicians and the experiences of the patients. Students will learn about interpersonal communication skills, gain a deeper understanding of the environment in which medical devices are used, observe therapeutic treatment in real time, and strengthen the clinical skills. No graduate credit. 1 to 4 professional hours. Approved for S/U grading only. May be repeated up to 16 hours in the same semester to a maximum of 40 hours over separate semesters. Prerequisite: This course is restricted to Carle Illinois College of Medicine students.

CLE 640  Family Medicine Clerkship  credit: 10 Hours. (https://courses.illinois.edu/schedule/terms/CLE/640)
This longitudinal clerkship provides an exciting opportunity for students to have clinical experiences within their own student clinic, as well as ambulatory practices in disciplines such as psychiatry, pediatrics, and family medicine. Students will learn the core skills and knowledge essential to the practice of primary care: diagnosis and treatment of common outpatient complaints, management of chronic medical conditions, and strategies for health promotion and disease prevention. No graduate credit. 10 professional hours. Approved for S/U grading only. Prerequisite: This course is restricted to students enrolled in the MD program at Carle Illinois College of Medicine.