Doctor of Medicine (MD)

By conferring the MD degree, the university certifies that the student is competent to undertake a career as a doctor of medicine. It certifies further that, in addition to medical knowledge and skills, the graduate possesses qualities of personality — compassion, emotional stability and a responsible attitude — essential to an effective professional life.

Curriculum

The curriculum includes a core experience based upon a sequence of courses that introduces students to the many domains and disciplines of medicine. The principles, methods of investigation, problems and opportunities in each of the major disciplines of medical science and medical practice are presented in such a way as to help students select the career best suited to their abilities and goals. Through all four years of the curriculum, key topics known as Threads are woven throughout the learning experience, linking clinical and course work and enhancing the learning experience.

The preclinical curriculum provides a science and investigative foundation for future clinical practice. First-year and second-year course work combines basic science taught in a variety of didactic means including lectures, small groups, simulations and case-based learning with a Practice of Medicine course that uses regular patient interactions and integrative cases to teach students to skillfully interview and examine patients, as well as integrating current health disparities and issues in the present global spectrum.

Students will also have the opportunity during their first year to complete four, 10-hour selective courses in the humanities, basic sciences and clinical areas, providing enrichment and in-depth focus on areas beyond the core curriculum. The preclinical curriculum is pass/fail.

The overall goal of the third year is implementation of fundamental interactive clinical skills necessary for the practice of medicine at the highest possible level of excellence. Students achieve this goal by participating in intensive, closely supervised training experiences in the core clinical clerkships involving inpatient and ambulatory settings and interactions with patients who present a spectrum of emergent, urgent, routine and chronic clinical problems. Through these experiences, students exhibit growth and maturation in their abilities to take medical histories, perform complete physical examinations, synthesize findings into a diagnosis, formulate treatment plans, and document and present information in a concise, logical and organized fashion.

In the final year of the medical school curriculum, the required elective program helps students to decide where major interests lie. It also enables them to benefit from the wide range of specialized knowledge and skills found in the faculty and lays the foundation for lifelong learning and application of principles. The elective program permits students to select, according to their desires, the areas they wish to explore or to study in depth. Fourth year is also an opportunity to synthesize the learning from third year in preparation for clinical residency. Toward this end, students are required to complete a Capstone course prior to graduation.

Washington University School of Medicine Medical Student Competency-Based Learning Objectives

The educational program is designed to ensure that each student will demonstrate the following:

I. Medical knowledge

Medical students must demonstrate knowledge of core concepts and principles of human biology and genetics, the scientific foundations of medicine, and the causations, epidemiology, diagnosis and treatment of diseases in individuals and diverse populations.

MK-1 Demonstrate knowledge of normal human structure and function at the molecular, genetic, cellular, tissue, organ-system and whole-body level in growth, development, and health maintenance.

MK-2 Describe the basic mechanisms involved in the causation and treatment of human disease and their influence on clinical presentation and therapy.

MK-3 Demonstrate knowledge of the epidemiology of common diseases.

MK-4 Demonstrate knowledge of the impact of ethnicity and culture, socioeconomic factors, and other social factors on health, disease, and individual patient approaches to health care.

MK-5 Describe the basic scientific and ethical principles of clinical and translational research.

II. Patient care

Medical students must demonstrate the ability to provide appropriate patient care in a multidisciplinary setting for the promotion of health and treatment of health problems across the human life span.

PC-1 Obtain appropriate medical histories that include psychosocial and behavioral factors that influence health.

PC-2 Perform accurate physical examinations.

PC-3 Perform basic procedures necessary for the practice of medicine.
PC-4 Apply the scientific method to the practice of medicine including the processes of problem identification, data collection, hypothesis formulation, and the application of deductive reasoning to problem solving, clinical reasoning, and decision-making.

PC-5 Integrate collected clinical information, including history, physical examination, and relevant laboratory, radiologic, and other studies, to develop and carry out with supervision, appropriate, individualized diagnostic and treatment plans for patients across the broad spectrum of acute and chronic conditions.

PC-6 Perform basic risk assessments and formulate plans to promote patient wellness across the human lifespan.

PC-7 Counsel and educate patients and their families based upon consideration of patient lifestyle, culture, concomitant medical conditions, psychosocial, and socioeconomic factors.

III. Interpersonal and communication skills
Medical students must demonstrate their ability to communicate effectively with members of the medical community and with patients and their families from all socioeconomic and cultural backgrounds. (ED-10)

ICS-1 Demonstrate respectful and effective verbal and nonverbal interpersonal communication skills with patients.

ICS-2 Discuss diagnostic and treatment options in a manner that will facilitate the participation of patients and their families in shared decision-making.

ICS-3 Communicate effectively with members, including both physician and non-physician professionals, of the health care team.

ICS-4 Maintain accurate and thorough medical records and written documents.

IV. Professionalism
Medical students must demonstrate a commitment to professional responsibilities, adherence to ethical behaviors, and sensitivity to patients of diverse backgrounds.

PROF-1 Maintain a professionally appropriate demeanor, exhibit high standards of professional integrity, and demonstrate an awareness of potential conflicts of interest.

PROF-2 Apply legal and ethical principles governing the physician-patient relationship to interactions with patients and their families.

PROF-3 Act in the patient's best interest and serve as a patient advocate.

PROF-4 Work collaboratively and effectively in interprofessional teams.

PROF-5 Treat all patients and patients' family members respectfully and compassionately with respect for privacy.

V. Systems-based practice
Medical students must demonstrate an awareness of the larger context and system of health care and its impact on patients and the practice of medicine.

SBP-1 Demonstrate a knowledge of the U.S. health care delivery system, including the impact of financing, health policy, and the regulatory structure on health care.

SBP-2 Describe how health care disparities impact access and delivery of medical care for individuals and describe strategies for addressing these disparities.

SBP-3 Recognize the need for cost awareness and the role of risk benefit analysis in patient and population-based care.

SBP-4 Define patient safety and quality improvement, and discuss strategies to maximize the safety and quality of patient care.

VI. Practice-based learning and improvement
Medical students must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve their patient care skills based on external feedback and self-evaluation.

PBLI-1 Demonstrate the skills needed for lifelong learning including the ability to identify and address personal strengths and weaknesses to incorporate formative feedback, and to self-assess knowledge and performance to develop a self-improvement plan.

PBLI-2 Apply an evidence-based approach to medical practice through selecting, appraising and utilizing evidence from scientific studies related to clinical questions and patients’ health problems.

PBLI-3 Participate in the education of peers and other members of the health care team.

PBLI-4 Identify and address biases (both personal and in others) that may impact health care delivery.

Contact Information
For additional information or specifics about the MD curriculum, please contact:
Washington University School of Medicine
Office of Medical Student Education
Bernard Becker Medical Library, Room 301
CB 8214
660 S. Euclid Ave.
St. Louis, MO 63110
Hours: 8:30 a.m.-5:00 p.m., Monday-Friday
Phone: 314-362-7122
MD Program Website (https://md.wustl.edu)
# Degrees & Requirements

## Medical Degree Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td><strong>First Year:</strong></td>
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<tr>
<td>Neurosci 501B</td>
<td>Human Body: Anatomy, Embryology, Imaging</td>
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<tr>
<td>Neurosci 502A</td>
<td>Histology and Cell Biology</td>
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<td>Biochem 502</td>
<td>Molecular Foundations of Medicine</td>
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<td>CellBio 501</td>
<td>Physiology</td>
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<td>Path 523</td>
<td>Immunology</td>
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<td>MolMB 526</td>
<td>Microbes and Pathogenesis</td>
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<td>Neural Science</td>
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<td>MolBio/Pha 500</td>
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<tr>
<td>Medicine 507</td>
<td>Practice of Medicine I</td>
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<td>Selectives*</td>
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<td><strong>Second Year:</strong></td>
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<tr>
<td>Oto 660B</td>
<td>Clinical Topics In Otolaryngology</td>
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<tr>
<td>Medicine 615A</td>
<td>Endocrinology and Metabolism</td>
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<td>Medicine 611B</td>
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<td>Medicine 620A</td>
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<td>Medicine 607</td>
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<td>Surgery 790</td>
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<td>Neurol 720</td>
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<td>Medicine 707</td>
<td>Practice of Medicine III</td>
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<td><strong>Fourth Year:</strong></td>
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<td>InterDis 849</td>
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<tr>
<td>Electives**</td>
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* All first-year medical students are required to take and successfully complete at least four Selective courses (https://md.wustl.edu/academics/curriculum/first-year/selectives-requirements) with a maximum number of six. Students must enroll in a minimum of one each of humanities, basic sciences, clinical and an additional selective from the basic science or clinical category.

** The elective year allows students to develop a flexible, individualized program of study at a crucial time in the continuum of formal medical education. Course offerings are found within each department on the specific academic departments (http://bulletin.wustl.edu/medicine/departments/#academicdepartments) page and are 800-level.

## Research

Students pursuing the Doctor of Medicine degree may receive elective credit for research projects completed in their fourth year. For additional information about the enrollment process and to learn more about research elective opportunities, please contact the Electives Office (wusmelectives@wustl.edu).

Research opportunities are not mandatory, but the majority of MD students participate in some form of research during their educational career at Washington University School of Medicine. Our Medical Student Research Program provides a wide array of research opportunities to complement different student interests and suit various career paths. For more information about these research opportunities and the application process, please reference the Office of Medical Student Research website (https://mdstudentresearch.wustl.edu).

## Faculty

### 2018-2019 Course & Clerkship Directors

#### First Year

**Human Body: Anatomy, Embryology, Imaging**
Kari Allen, PhD  
Amy Bauernfeind, PhD

**Histology and Cell Biology**
Paul Bridgman, PhD

**Molecular Foundations of Medicine**
Linda Pike, PhD

**Physiology**
Robert Mercer, PhD

**Immunology**
Brian Edelson, MD, PhD

**Medical Genetics**
Sabrina Nunez, PhD
Microbes and Pathogenesis
Henry Huang, PhD
Scott Hultgren, PhD

Neural Sciences
David Van Essen, PhD
Krikor Dikranian, MD, PhD
Timothy Holy, PhD

Principles of Pharmacology
Simon Haroutounian, PhD

Practice of Medicine I
Timothy Yau, MD

First-Year Selectives
Faculty members from many departments and divisions at Washington University School of Medicine offer first-year selective course options focused on basic science, clinical experience, or the humanities.

Second Year
Clinical Topics in Otolaryngology
Joseph Bradley, MD

Endocrinology and Metabolism
William Clutter, MD

Cardiovascular Disease
Dana Abendschein, PhD
Justin Sadhu, MD

Pulmonary Disease
Adrian Shifrin, MBBCH

Renal and Genitourinary Diseases
Steven Cheng, MD

Dermatology
David Sheinbein, MD

Gastroenterology and Liver Disease/Nutrition
Sandeep Tripathy, MD, PhD

Obstetrics and Gynecology
Kenan Omurtag, MD

Diseases of the Nervous System
Allyson Zazulia, MD

Diseases of the Nervous System: Psychiatry
Marcie Garland, MD

Infectious Diseases
Nigar Kirmani, MD
Steven Lawrence, MD

Rheumatology
Richard Brasington, MD

Hematology and Oncology
Meagan Jacoby, MD, PhD
Eric Knoche, MD

Pediatrics
Amanda Emke, MD
Ericka Hayes, MD

Pathology
Erika Crouch, MD, PhD

Practice of Medicine II
Megan Wren, MD

Third Year
Integrated Surgical Disciplines Clerkship
Michael Awad, MD, PhD

Medicine Clerkship
Gerome Escota, MD

Neurology Clerkship
Robert Naismith, MD

Obstetrics and Gynecology Clerkship
Stewart Massad, MD
Tammy Sonn, MD

Pediatrics Clerkship
Laura Hall, MD
Colleen Wallace, MD

Psychiatry Clerkship
Brendan O’Connor, MD

Practice of Medicine III
Timothy Yau, MD

Fourth Year
Capstone
Gina LaRossa, MD

Fourth-Year Electives
Faculty members within all departments and divisions at Washington University School of Medicine offer a vast selection of clinical elective rotations and independent study opportunities for students in their final year of the MD program.

Courses
Descriptions of courses offered for students pursuing the Doctor of Medicine degree are listed within the Academic Department (http://bulletin.wustl.edu/medicine/departments/#academicdepartments) sections in this Bulletin. Please reference the department page for a complete listing of MD courses offered in that specialty. Across all School of Medicine departments, first-year MD courses are designated as 500-level (MXX 5XX), second-year courses are designated as 600-level (MXX 6XX), third-year courses are designated as 700-level (MXX 7XX), and fourth-year courses are designated as 800-level (MXX 8XX).