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 (https://md.wustl.edu/academics/curriculum/first-year) provides a science and investigative foundation for future clinical practice. First-year and second-year course work combines basic science taught via a variety of didactic means, including lectures, small groups, simulations and case-based learning. It also includes a Practice of Medicine course that uses regular patient interactions and integrative cases to teach students to skillfully interview and examine patients while integrating current health disparities and issues in the present global spectrum.

In addition, students have the opportunity during their first year to complete four 10-hour selective courses (https://md.wustl.edu/academics/curriculum/first-year/selectives-requirements) in the humanities, the basic sciences and various clinical areas, which provides 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 the implementation of the 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, which involve 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.

During the final year (https://md.wustl.edu/academics/curriculum/electives-fourth-year) of the medical school curriculum, the required elective program helps students to decide where their major interests lie. It also enables them to benefit from the wide range of specialized knowledge and skills found in the faculty, and it lays the foundation for lifelong learning and the application of principles. The elective program permits students to select, according to their desires, the areas that they wish to explore or to study in depth. The fourth year is also offers students the opportunity to synthesize the learning from the 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:

**Foundational Knowledge for Practice**

1. Demonstrate knowledge of normal human structure and function at the molecular, genetic, cellular, tissue, organ-system and whole-body level.
2. Demonstrate knowledge of the basic mechanisms involved in the pathogenesis of common human diseases and their influence on clinical presentation and therapy.
3. Demonstrate knowledge of the epidemiology of common and clinically significant diseases.
4. Demonstrate basic knowledge of the impact of ethnicity, culture, socioeconomic status, patient and provider biases, and other social factors on health and disease.
5. Demonstrate basic knowledge of the ethical principles and professional values that underpin the medical profession.
6. Demonstrate basic knowledge of the common scientific methods used to study health and disease.
7. Demonstrate basic knowledge of the methods and principles used for improving the quality, safety and costs of health care delivery.

**Patient Care**

1. Obtain appropriate medical histories that include the psychosocial and behavioral factors that influence health.
2. Perform accurate physical examinations.
3. Discuss the indications, risks and benefits of common medical procedures; demonstrate proficiency in performing the required procedures of the Washington University School of Medicine graduate.
4. Formulate a prioritized differential diagnosis for the patient’s presenting symptoms, discuss expected physical
examination findings based on the differential, and identify the diagnostic testing required.
5. Interpret common physical examination, laboratory and radiographic studies to inform the differential diagnosis and treatment plan.
6. Develop and carry out, with supervision, appropriate individualized diagnostic and treatment plans for patients across the broad spectrum of acute and chronic conditions.
7. Assess individual patient risk factors for common clinical conditions.
8. Educate patients and families about strategies to reduce risk and promote health.

**Interpersonal and Communication Skills**
1. Demonstrate respectful and effective verbal and nonverbal interpersonal and communication skills with patients, families, colleagues and all members of the healthcare team.
2. Discuss diagnostic and treatment options in a manner that will facilitate the participation of patients and their families in shared decision making.

**Professionalism**
1. Maintain a professionally appropriate demeanor.
2. Exhibit high standards of professional integrity.
3. Demonstrate an awareness of potential conflicts of interest.
5. Act in the patient’s best interest and serve as a patient advocate.
6. Recognize, monitor and address psychological and physical factors in oneself that may affect professional performance.

**Systems-Based Practice**
1. Work collaborative and effectively in interprofessional teams.
2. Recognize the roles of various members of the interprofessional healthcare team and the scope of their practice.
3. Demonstrate the ability and willingness to adapt to various healthcare delivery settings (e.g., inpatient, ambulatory, operating room, labor and delivery, emergency department).
4. Recognize barriers to and facilitators of safe, high-quality patient care.
5. Describe individual, team and system challenges that may contribute to medical errors; demonstrate the ability to identify medical errors when they occur.

**Practice-Based Learning and Improvement**
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.
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.

**Contact Information**
For additional information or specifics about the MD curriculum, please use the following contact information:
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**

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<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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<tr>
<td>Biochem 502</td>
<td>Molecular Foundations of Medicine</td>
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<tr>
<td>CellBio 501</td>
<td>Physiology</td>
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<tr>
<td>Genetics 511</td>
<td>Medical Genetics</td>
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<tr>
<td>Path 523</td>
<td>Immunology</td>
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<tr>
<td>MolMB 526</td>
<td>Microbes and Pathogenesis</td>
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<tr>
<td>Neurosci 554</td>
<td>Neural Science</td>
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<tr>
<td>MolBio/Pha 500</td>
<td>Principles of Pharmacology</td>
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<tr>
<td>Medicine 507</td>
<td>Practice of Medicine I</td>
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<tr>
<td><strong>Selectives</strong>:</td>
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<tr>
<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>
<td>Cardiovascular Disease</td>
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<td>Medicine 612B</td>
<td>Pulmonary Diseases</td>
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<tr>
<td>Medicine 613B</td>
<td>Renal &amp; Genitourinary Diseases</td>
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<tr>
<td>Medicine 614</td>
<td>Dermatology</td>
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<tr>
<td>Medicine 620A</td>
<td>Gastrointestinal and Liver Diseases/Nutrition</td>
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<tr>
<td>ObGyn 635B</td>
<td>Obstetrics and Gynecology</td>
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<tr>
<td>Neurol 632</td>
<td>Diseases of the Nervous System</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 six allowed. Students must enroll in a minimum of one course 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 department pages (http://bulletin.wustl.edu/medicine/departments/#academicdepartments) and are offered at the 800 level.

Research

Students pursuing the Doctor of Medicine degree may receive elective credit for research projects completed during their fourth year. For additional information about the enrollment process and to learn more about research elective opportunities, please email 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 to 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

2019-2020 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
Stephen Gregory, MD
Lai Kuan Dionne, 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 and the humanities.

Second Year

**Clinical Topics in Otolaryngology**
Joseph Bradley, MD

**Endocrinology and Metabolism**
Amy Riek, MD
Marina Litvin, MD

**Cardiovascular Disease**
Dana Abendschein, PhD
Justin Sadhu, MD, MPHS
Pulmonary Disease
Adrian Shifrin, PhD
Jeffrey Atkinson, MD

Renal and Genitourinary Diseases
Steven Cheng, MD

Dermatology
David Sheinbein, MD
Heather Jones, 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
Lisa Zickuhr, 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

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 of this Bulletin. Please reference a specific 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 courses (MXX 5XX), second-year courses are designated as 600-level courses (MXX 6XX), third-year courses are designated as 700-level courses (MXX 7XX), and fourth-year courses are designated as 800-level courses (MXX 8XX).