

# MD Educational Program: Curriculum Components

## *Welcome to the UAB School of Medicine Curriculum!*

The School of Medicine core undergraduate medical curriculum: (1) builds upon integrating basic science with clinical knowledge, including real & simulated clinical applications; (2) encourages active, case-based learning and teamwork; and (3) seeks to train medical students as future physicians involved in competent and compassionate patient care.

### 1. “The Big Picture” View:

#### 1.1. Overview of the [MD Program Curriculum](#):

All students are enrolled in the pre-clerkship phase on the main campus in Birmingham for the first (MS1) and second (MS2) years.

- (1) The pre-clerkship curriculum includes Orientation and exposure to Patient, Doctor, & Society where students are first introduced to health care systems and aspects of health care.
- (2) The majority of the first semester of the MS1 year is comprised of the Fundamentals of Medicine (includes anatomy, biochemistry, genetics, histology, immunology, microbiology, pathology, pharmacology, physiology, etc.).
- (3) Beginning in January of the MS1 year, the students participate in organ-based system modules for the remainder of the pre-clerkship curriculum. The organ-based modules include Cardiovascular, Pulmonary, Gastrointestinal, Renal, Neurosciences, Musculoskeletal & Skin, Endocrine, Reproductive, and Hematology, ending with Evidence-Based Medicine to wrap up the MS2 year.
- (4) The Introduction to Clinical Medicine courses (ICM 1, ICM 2) weave longitudinally throughout the first two pre-clerkship curriculum years, exposing students to clinical history taking, physical exam, and interviewing skills with Clinical Skills Scholars. Students gain additional clinical exposure through regular OSCEs and dedicated Clinical Skills Scholars faculty mentorship.
- (5) After the completion of the pre-clerkship curriculum, there are several weeks of dedicated USMLE Step 1 study preparation for students, augmented by required transition to clinical clerkships orientations before students enter the clerkship curriculum.

Students are enrolled at each of four clinical campuses (Birmingham, Huntsville, Montgomery, and Tuscaloosa) and participate in clinical clerkships, acting internships, and electives during the third (MS3) and fourth (MS4) years.

- (1) Required clerkship disciplines include internal medicine, family medicine, pediatrics, obstetrics-gynecology, surgery, neurology, and psychiatry. All students are enrolled in the seven clerkship disciplines on all campus sites. The clerkships on the Birmingham, Huntsville, and Montgomery campuses are traditional four-to-eight-week block clerkships, while students on the Tuscaloosa campus are specifically admitted into and enrolled in a longitudinal integrated parallel curriculum Tuscaloosa Primary Care Track.
- (2) Clerkship disciplines across all four clinical campuses adhere to the same clerkship objectives and assessments within each of the respective disciplines for comparable educational experiences across campus sites.

- (3) Fourth-year students are enrolled in a required two-week residency preparation course in the spring of the MS4 year, prior to graduation.

Longitudinally throughout the medical school experience:

- (1) Students participate in required Learning Communities with Learning Community mentors and peers. Students participate in interprofessional education and simulation experiences as part of their required courses and clerkships.
- (2) Students also have opportunities to participate in optional service-learning activities and volunteer in the student free community clinic with faculty preceptors (Equal Access Birmingham, EAB).
- (3) There are opportunities for optional medical student research and required Scholarly Activity throughout the four-year curriculum.
- (4) Students are introduced to required Scholarly Activity at the beginning of their MS2 year and submit their Scholarly Activity projects in the spring of the MS4 year prior to graduation.
- (5) Students also have the opportunity to engage in required Special Topics mini-1-to-2-week courses, and optional semester-based Co-Enrolled Electives to round out their medical school experience, on topics that are of particular interest to individual students.

## 1.2. MD Educational Program Objectives & Competency Areas:

The [MD Educational Program Objectives for the SOM curriculum](#) are based upon ACGME Competencies:

- 1) **Patient Care:** Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health;
- 2) **Knowledge for Practice:** Demonstrate knowledge of the established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care;
- 3) **Practice-based Learning and Improvement:** Demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning;
- 4) **Interpersonal and Communication Skills:** Demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals;
- 5) **Systems-Based Practice:** Demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care;
- 6) **Professionalism:** Demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles”

Additionally, each clinical clerkship and required acting internship in a given discipline adheres to the same objectives for that discipline across all four clinical campus sites.

## 1.3. Core MD Graduation Requirements:

All students in the regular MD degree program are required to successfully pass all components of the MD core curriculum, USMLE Step 1 and Step 2, and complete a required Scholarly Activity project and four weeks of required Special Topics credit in order to graduate. All students are required to participate in the four-year Learning Communities curriculum from matriculation to graduation.

- [MD Graduation Requirements](#)
- [Medical Student Research and Scholarly Activity](#)

#### **1.4. Academic Year Calendars & Curriculum Schematics:**

- [Curriculum Schematics](#)
- [Academic Year Calendars](#)

#### **1.5. Regional Campuses:**

- [Huntsville Regional Campus](#)
- [Montgomery Regional Campus](#)
- [Tuscaloosa Regional Campus](#) and [Tuscaloosa Primary Care Track](#)

#### **1.6. Parallel Curricula and Dual Degree Programs:**

The School of Medicine offers several parallel curriculum experiences (e.g., [Primary Care Track](#) longitudinal curriculum at the Tuscaloosa clinical campus; [MD-PhD MSTP Medical Scientist Training Program](#)) as well as several [dual degree programs](#) (e.g., MD-PhD, MD-MPH, MD-MSPH, MD-MBA, etc.). Students enrolled in any parallel curricula and/or dual degree programs are expected to adhere to those specific program requirements for successful completion of those programs and degrees, in addition to the established core MD graduation requirements for the School of Medicine for successful completion of the medical school training program.

#### **1.7. LCME Accreditation:**

The School of Medicine is a LCME-accredited medical school institution. The next LCME site visit will be 2022.

## 2. The “Nuts & Bolts” View:

Detailed Components of the UAB SOM Curriculum:

- 2.1: Longitudinal Components throughout the four-year SOM Curriculum
- 2.2: MS1 & MS2 Pre-clerkship Curriculum
- 2.3: MS3 Required Clerkship Curriculum
- 2.4: MS3/4 “Pre-Residency” Curriculum: Acting Internships, Electives, Residency Prep, etc.

### 2.1. Longitudinal Components throughout the four-year SOM Curriculum

- (1) Several **longitudinal themes** are woven throughout the pre-clerkship curriculum and may extend into the third and fourth year of the clinical curriculum. Examples of longitudinal themes include cultural competence and health disparities, women’s health, geriatrics and palliative care, behavioral sciences, ethics and humanities, prevention and patient education, to name a few.
- (2) **Required & optional service learning and interprofessional education** opportunities are available throughout the curriculum, in conjunction with community-based collaborations (such as Equal Access Birmingham), courses and clerkships, Learning Communities, Introduction to Clinical Medicine (ICM), and the UAB Center for Interprofessional Education and Simulation (CIPES).
- (3) **Interprofessional Simulation** hands-on experiences within a team-based setting with students and faculty provide an opportunity for students to apply knowledge to clinically-relevant scenarios. Faculty members give real-time feedback using a structured debriefing format.
- (4) **Learning Communities (LC)** span all four years of medical school as a core curriculum requirement. The goal of the Learning Communities program is to create healthy people who will be effective physician leaders. The mission of the Learning Communities course is to foster longitudinal relationships in a safe and inclusive environment to promote personal wellness and professional development. LCs meet on a regular basis throughout medical school, covering a wide variety of topics, aimed to develop skills that students need to become healthy, successful people and physician leaders. Components of the Learning Communities curriculum include service learning, health and wellness, ethics, interprofessional education, communication, health disparities, and culturally responsive health care. Students are assigned to LCs upon matriculation and remain in these LCs until graduation. Attendance at Learning Community meetings is required, with the exception of social activities, which are optional. Students are required to attend 80% of the LC meetings (excluding social activities) to successfully pass the course. Learning Communities are Pass/Fail.
- (5) **Special Topics** represent one-to-two week “mini-immersion” courses on a broad array of topics that students may select or develop based upon interest. Students and/or faculty may propose a Special Topics course, subject to approval for enrollment by the Associate Dean for Undergraduate Medical Education. Special Topics are available throughout the MS2, MS3, and MS4 years. Four weeks of Special Topics are required for graduation, but students may participate in additional special topics courses on topics of interest.
- (6) **Co-enrolled Electives** are optional semester-like experiences that occur concurrently with pre-clerkship and/or clinical courses. Co-enrolled Electives represent additional opportunities for students to engage in topics of interest to augment their educational course of study and may explore a wide variety of issues facing medicine today. Similar to Special Topics offerings, Co-enrolled Elective offerings vary by term and by campus. Students must be active in good standing & may only enroll in one Co-enrolled Elective at a time.
  - a. Students in the MS1 fall term are not eligible to enroll in Co-Enrolled Electives. Provided there is a Co-Enrolled Elective accepting MS1s and the MS1 is in good standing, an MS1 may enroll in a Co-Enrolled Elective in the MS2 spring term.
  - b. Co-enrolled electives may be available for concurrent enrollment of one or more medical student classes during a specified term. For example, it may be possible for a Co-Enrolled Elective to accept students in the MS2-MS4 years. Also, it may be possible for a Co-Enrolled Elective to be limited to the MS2, MS3, and/or MS4 year depending upon the course objectives and scope.
  - c. Successful completion of a Co-enrolled Elective may be credited toward 2 weeks of elective credit for graduation. A maximum of 4 weeks of Co-enrolled Electives credit (i.e., a maximum of 2 co-enrolled electives only) may be used toward the elective requirement for graduation. That said, eligible students may still enroll in more than two Co-enrolled Electives during their medical school experience and based upon their interests;

however, they may not apply any additional Co-Enrolled Elective credit toward graduation requirements beyond the maximum of two (4 weeks Co-Enrolled Elective credit maximum).

- (7) **Scholarly Activity** is a required component of the four-year curriculum and culminates with completion of the scholarly project, presentation and/or publication. Students choose a Scholarly Activity project of interest, participate in Scholarly Activity required experiences in the curriculum, and work with a Scholarly Activity mentor.
- a) Whether a student intends to pursue a career in academic medicine or in private practice, skills in analytical thinking and rational decision making are essential for medical practice in the 21<sup>st</sup> century. By having students design, perform, and present a scholarly project of their own choosing, the Scholarly Activity provides a unique opportunity to develop and enhance skills in analytical thinking and rational decision making.
  - b) The goals of the Scholarly Activity are to
    - 1) provide students with an opportunity to employ their unique skills and talents to pursue a project of their choosing under the mentorship of an expert in the field;
    - 2) provide mentorship and guidance for students interested in careers that integrate research, teaching, and clinical service (academic medicine);
    - 3) foster development of analytical thinking skills, rational decision making, and attention to the scientific method;
    - 4) enhance communication skills; and
    - 5) provide opportunities to enhance student self-directed learning.
  - c) Faculty serve as Scholarly Activity mentors in a variety of focus areas, depending upon the nature of their research, including but not limited to: (a) Laboratory-based biomedical research, (b) Patient-based research, (c) Medicine and humanities, including ethics, (d) Community and rural health, (e) Public and international health, (f) Health education and outcomes research/quality measures/informatics. It is the hope that under the mentorship of a faculty expert that students will use this opportunity to develop a project that embodies not only student *talents*, but also student *passions*.
  - d) Students must complete the Introduction to Scholarly Activity at the beginning of the MS2 year and then successfully submit their Scholarly Activity project in the MS4 year by the project deadline.
  - e) The Scholarly Activity project must be designed to test a specific hypothesis or investigate a specific question within a focus area. This can be achieved through (1) data collection and analysis or (2) a critical review of the literature or existing data. Depending upon the nature of the project, students may work independently or as part of a team. However, the Scholarly Activity requires that each student submit a sole authored final paper, even if the student plans to submit the paper for publication under joint authorship.

## 2.2. MS1 & MS2 Pre-clerkship Curriculum

The pre-clerkship curriculum focuses on developing students' communication and clinical skills while exposing students to a wide array of basic science knowledge and clinical scenarios. A variety of instructional strategies are employed that include large group and small group instruction, including but not limited to large group discussions, face-to-face and online lecture materials, hands-on demonstrations, virtual imaging and gross dissection laboratories, simulated learning experiences, team-based learning, case-based sessions, patient-based presentations, and self-directed and independent learning activities. In general, required Fundamentals and organ-based system courses in the pre-clerkship curriculum are referred to as "modules," each representing structured segmental experiences in the MS1 and MS2 years that serve to consolidate basic science knowledge and clinical correlates and incorporate with elements of integration and review. The Fundamentals of Medicine module in the first semester of the MS1 year is led by a Module Director and five block leaders. Typically, each organ-system module is coordinated and led by a Module Director (a joint health medical sciences faculty member) and one or more Clinical Co-director(s) so as to balance and reinforce the relationship of basic science knowledge with clinical correlations and patient care.

### MS1 Fall Semester:

There are two introductory modules in the fall term of the MS1 year, following MS1 Orientation:

- (1) The **Patient, Doctor, and Society (PDS)** module is 2 weeks. This course reinforces with students the principles of professional behavior and medical ethics, evidence-based medicine, effective communication skills; the importance of self-directed learning and reflection; health care systems and the historical context of medicine.
- (2) The **Fundamentals of Medicine** module is 17 weeks and split into five blocks. This course focuses on building and reinforcing a solid foundation of basic science knowledge that is important to understanding the elementary

principles in the basic sciences, cell biology and genetics, microbiology and immunology, the pathophysiology of disease, and principles and mechanisms of pharmacology.

### MS1 Spring Semester through MS2 Spring Semester:

The remainder of the MS1 and MS2 curriculum is comprised of **nine organ-based modules** that address basic science concepts as they relate to particular organ system functioning, pathophysiology, and disease management. Basic science principles are woven together with clinical correlates to prepare students for the clerkship years.

- a) The MS1 organ-based modules include:
  - (1) **Cardiovascular** (5 weeks)
  - (2) **Pulmonary** (5 weeks)
  - (3) **Gastrointestinal** (6 weeks)
  - (4) **Renal** (5 weeks)
  
- b) The MS2 organ-based modules include:
  - (1) **Neurosciences** (10 weeks)
  - (2) **Musculoskeletal & Skin** (6 weeks)
  - (3) **Endocrine** (3 weeks)
  - (4) **Reproductive** (4 weeks)
  - (5) **Hematology** (4 weeks)

### End of MS2 Spring Semester:

- (1) A one-week **Evidence-Based Medicine (EBM)** course occurs at the end of the MS2 year, upon completion of the organ-based system modules.
- (2) EBM is followed by at least six-seven weeks of **dedicated USMLE Step 1 preparation time**.
- (3) Students must successfully complete the pre-clerkship curriculum and earn a passing score on the **USMLE Step 1 examination** before students may enter the clinical curriculum, including clerkships.

### MS1 & MS2 Longitudinal Experiences:

- (1) Throughout the pre-clerkship curriculum, **gross anatomy** is taught in conjunction with the Fundamentals and organ-based modules via a combination of laboratory, lecture, small group, case-based, self-directed learning, and team-based learning strategies. Experiential learning in gross anatomy focuses on cadaver dissections and prosections that are complemented with radiological and surgical anatomy, including ultrasound and CT images
- (2) **Introduction to Clinical Medicine (ICM)** extends longitudinally throughout the first two years concurrently with the pre-clerkship modules to provide students with history taking, physical exam, and practical clinical skills and doctor-patient communications training. Clinical experiences in ICM in the pre-clerkship curriculum provide a foundation for clinical experiences in the clerkship curriculum. Throughout ICM, students will learn about and practice demonstrating the professional behavior and skills of self-directed learning that will make them a successful physician. Initially, students will develop the communication skills necessary for effective therapeutic patient relationships and will learn to share patient information and communicate effectively with colleagues and other caregivers. Students will become familiar with the techniques of medical interviewing and history taking, as well as more challenging aspects of the medical interview, such as dealing with emotion in the interview and inquiring about sensitive topics. Students then progress to the clinical skills of physical examination techniques, physical diagnosis and case presentation.
  - a. ICM develops and reinforces history-taking and physical exam skills in combination with small group meetings, lectures and large group discussions, demonstrations, practice exam sessions, and other clinically related experiences. The material presented in ICM is integrated to correlate with each pre-clerkship module (PDS, Fundamentals of Medicine, and the nine organ-based modules).
  - b. From the first week of medical school, students are exposed to patients. ICM provides students with opportunities to interact with patients, to learn clinical skills, and to begin to apply students' growing medical knowledge.

- c. The majority of ICM experiences include small group meetings with the Clinical Skills Scholars (CSS) or with fourth-year medical students who serve as clinical skills teaching associates (CSTAs). Upon matriculation, each student is assigned to an ICM small group. Each ICM group is paired with a Clinical Skills Scholar (CSS) who is a trained physician clinical educator who facilitates the CSS-led ICM small group meetings with students throughout the entire pre-clerkship curriculum. ICM groups are also assigned to CSTAs for CSTA-led experiences throughout ICM.
- (3) **Learning Communities, Special Topics, Co-Enrolled Electives, Scholarly Activity** (previously discussed).

### 2.3. MS3 Required Clerkship Curriculum

**ATTENTION:** Students must successfully complete all required clerkships before taking USMLE Step 2 CK or participating in “away”/extramural electives.

**Required clerkship disciplines at all clinical sites include internal medicine, family medicine, pediatrics, obstetrics-gynecology, surgery, neurology, and psychiatry.**

Third-year clerkship rotations provide the opportunity for students to apply the basic sciences, improve problem-solving and critical reasoning skills, continue the development of skills in interviewing and examining patients, and engage students in increasing levels of responsibility for patient care in both hospital and ambulatory settings. Clerkship disciplines across all four clinical campuses adhere to the same clerkship objectives and assessments within each of the respective disciplines for comparable educational experiences across campus sites.

- For clerkship rotations, students are enrolled at each of four clinical campuses (Birmingham, Huntsville, Montgomery, and Tuscaloosa). Students are enrolled in all seven clerkship disciplines on a given clinical campus. Students enrolled in the Primary Care Track on the Tuscaloosa Regional Campus take clerkships in accordance with the Tuscaloosa Primary Care Track program parallel clerkship curriculum.
- The clerkships on the Birmingham, Huntsville, and Montgomery campuses are traditional four-to-eight-week block clerkships, while students on the Tuscaloosa campus are specifically enrolled in a parallel curriculum Primary Care Track (consists of traditional and longitudinal experiences).
- Traditional eight-week clerkships include Medicine, Surgery, Pediatrics, and Obstetrics/Gynecology. Traditional four-week clerkships include Psychiatry, Neurology, and Family Medicine. Clerkships may be taken in any order.
- Students must successfully complete all 44 weeks of required clerkships at their clinical campus sites.

Additionally, students in the MS3 year do have the opportunity to defer one clerkship to the MS4 year and take one or more acting internships (AIs) or clinical electives in its place. For example, a student may wish to defer a clerkship to explore specialty fields of interest further. That said, a student in the MS3 year only may defer a clerkship or ambulatory acting internship (AI) from the MS3 year to the MS4 year provided that the student has successfully completed the (1) Medicine Clerkship, (2) Surgery Clerkship, and (3) any clerkship discipline in which the student is planning to take as the AI or elective, in place of the deferred clerkship. Students must complete all required clerkships before participating in any “away”/extramural electives.

**Special Topics** and **Co-Enrolled Electives** experiences may also be available for enrollment throughout the pre-clerkship, clerkship and pre-residency phases of the SOM curriculum.

**Learning Communities** and **Scholarly Activity** continue throughout the four-year curriculum.

## 2.4. MS3/4 “Pre-Residency” Curriculum: Acting Internships, Electives, Residency Prep, etc.

- (1) **Learning Communities** and **Scholarly Activity** continue throughout the four-year curriculum.
- (2) **Special Topics** and **Co-Enrolled Electives** are available for enrollment throughout the pre-clerkship, clerkship and pre-residency phases of the SOM curriculum.
- (3) **Teaching Associate/Skills Training Experiences:** There are opportunities for students to revisit anatomy and the core pre-clerkship sciences with focused anatomic dissection based upon anticipated residency training (such as surgery). There are also opportunities for students to enroll as clinical skills teaching associates (CSTAs) with ICM and teaching associates for interprofessional education simulation experiences.
- (4) **Acting Internships & Electives:** Typically, students participate in required acting internships (AIs) and electives after completion of MS3 required clerkships. [As previously noted, an exception to this is where one MS3 clerkship has been deferred to the MS4 year and an AI or elective is taken in its place earlier in the MS3 year. Students must complete all required clerkships before participating in any “away”/extramural electives.]
- (5) **Career Advising:** Students will select from a list of Career Advisors in the field of medicine the student has chosen to pursue. With a Career Advisor, each student will select a schedule that completes a well-rounded education that also is targeted to prepare the student for residency. This is likely to include opportunities for the student to learn teaching skills that are important in residency.
- (6) **Residency Prep Course:** Students are enrolled in a two-week residency preparation course in the spring of the MS4 year, prior to graduation.

### Required Acting Internships:

- 1) During their senior year, students must complete 12 weeks of required Acting Internships (AIs).
- 2) AI’s may be taken in any order following completion of any required prerequisites and clerkships.
- 3) Any AIs completed beyond the required AIs count toward elective credit.
- 4) Core Required AIs for the MD Degree, unless otherwise approved by the Medical Education Committee (MEC), include
  - (a) four weeks Medicine AI or Pediatrics AI,
  - (b) four weeks Ambulatory AI, and
  - (c) four weeks Surgery AI or Critical Care AI or OB/Gyn AI or Emergency Medicine AI
- 5) Primary Care Track Required AIs and other Primary Care Track requirements for the MD degree are taken in accordance with the Primary Care Track parallel curriculum on the Tuscaloosa Regional Campus.
- 6) The Medicine AI/Pediatrics AI and Ambulatory AI must be taken on the student’s assigned clinical campus.
- 7) Completion of the Family Medicine clerkship is a prerequisite for enrollment in any required Ambulatory AI.
- 8) When students enroll in the required Ambulatory AI may vary by student and by clinical campus in completion of other clerkship and required experiences: (1) MS3 students on the Birmingham campus may enroll in the third-year Rural Medicine clinical elective for elective credit or a four-week required Ambulatory AI (may include Rural Medicine) for Ambulatory AI credit. (2) MS3 students on the Huntsville, Tuscaloosa, and Montgomery regional campuses must enroll in a required Ambulatory AI in Rural Medicine that follows the Family Medicine clerkship on that assigned campus. However, students on the regional campuses have the option of deferring both the Family Medicine clerkship and the required Ambulatory AI in Rural Medicine to the fourth year with permission and approval from the respective regional campus.

### Electives:

Students must also complete 22 weeks of Electives:

- 1) Students must successfully complete all required clerkships before taking USMLE Step 2 CK or participating in “away”/extramural electives.
- 2) Electives may be taken within the tri-campus system or at approved “away” sites, including international locations.
- 3) Extramural elective opportunities are subject to screening and approval by the School of Medicine.
- 4) Any AIs beyond the required AIs for graduation may be counted toward Elective credit.
- 5) A maximum of four weeks of Co-Enrolled Electives (optional) may be used toward the Elective requirement for graduation.

**Students must successfully pass USMLE Step 1 and Step 2 to graduate.**