

## **University of Kentucky College of Medicine 2012 Curricular Revision Overview**

### **Summary of Planning Process**

In lieu of a program change form (which is not available for professional programs or required by University Senate rules), this cover letter serves as an overview and summary of the proposed changes. The College of Medicine (COM) proposes to revise the years one and two (“M1” & “M2”) curriculum of the four-year program leading to the MD degree. This revision is the result of a six-year planning process that involved numerous committees and task forces and brought together faculty, student, and administration input.

- In 2005 the report resulting from a joint faculty/student retreat recommended transitioning from the current discipline-based hybrid model toward a more organ systems-based hybrid curriculum.
- In 2008 a faculty/student task force utilized the 2005 report and produced specific recommendations, including that the COM undertake a detailed planning process that would move the curriculum toward a more systems-based hybrid curriculum.
- In 2010 an implementation committee of faculty and students was formed to carry out the 2008 task force recommendations. The implementation committee proposed a working framework that was widely circulated and discussed at a variety of College meetings - including Council of Chairs, course directors - general faculty, departmental, and Faculty Council meetings.
- Subsequent feedback guided a revised framework which included a three-tiered faculty/student committee planning process. In summer 2011, this process was implemented under the Dean’s charge to develop specific M1 and M2 curricular proposals.

### **Rationale for Revision**

1. Foundational science is a defining characteristic of physician practice. Nevertheless, numerous studies show that the foundational science learned in the first two years of medical school is quickly forgotten, often by the third year of medical school.
2. Educational studies have affirmed that retention of knowledge is enhanced when taught in context. For medical education, this suggests that foundational science principles will be better retained if integrated within a clinical context.
3. The current curriculum focuses on learning normal human structure and process in the M1 year, followed by abnormal processes (i.e., disease and its therapeutics) in the second year. Therefore, the M1 year is taught largely devoid of clinical context.
4. In contrast, a systems-based curriculum restructures most instruction in a clinical context. For example, students in a cardiology systems course learn the anatomy, physiology, histology, pathology, microbiology and pharmacology of the heart, but in the clinical context of associated conditions and treatments. Most U.S. allopathic medical schools have moved to a systems-type curriculum in the last decade.
5. The current structure teaches material from a discipline-based viewpoint, but, in most cases does not horizontally integrate systems concepts vital to learning medicine. The administrative structure of the College does not provide a natural vesting of the responsibility for this integration; consequently, the task of integrating discipline-based concepts into clinical systems often falls to the students themselves.

6. The proposed curricular structure allows instruction in a systems-based fashion while vesting discipline-based (i.e., horizontal) integration at the departmental level where it can be better maintained by an existing administrative structure. (Appendix A)
7. At UKCOM, students must pass the first two parts (“Step 1” and “Step 2”) of the United States Medical Licensing Examinations (USMLE) to graduate from medical school (and, later, to compete for desired residency programs). Adding credence to our proposed curricular changes are significant structural changes occurring in the USMLE examinations. All Step examinations (including Steps 2 and 3) will now reinforce foundational science principles. Step 1, has traditionally been a foundational science examination taken after the second year of medical school. *The Step 1 has completely redesigned its question format, such that all questions are in clinical vignettes, and demand the student understand foundational science principles in their clinical context. As a result, retaining foundational science knowledge will be critical for student success on these examinations. A systems-based curriculum, taught in an integrated foundational science/clinical context, will prepare students more effectively for these changes.*

### **Structural Overview of M1 Curriculum**

1. **General Structure:** In the first semester of M1, inherently foundational sciences which are not organ-specific (i.e., biochemistry, genetics, the basics of cell biology and histology) will continue to be taught in discipline-based frameworks. Similarly, gross anatomy basics will remain in the first semester rather than dispersed among the systems courses, primarily for reasons of access to the cadaver laboratory (which is shared with other health care colleges). Further, the anatomy and embryology courses utilize team-building and cooperative activities and exercises that are vital to students’ ongoing orientation to medical school and the medical profession. In all the above mentioned courses, clinical correlates will be more strategically integrated with course content. The first course of the second semester will be a Foundations of Disease and Therapeutics course (described below). The first year will culminate with two systems courses, neurology and psychiatry.
2. **Credit hours:** Review of the current UKCOM curriculum revealed little standardization or justification for current course credit hour allocation. Thus, the College of Medicine seeks to standardize the assignment of credit hours: preclinical courses will be awarded/assigned one credit hour per every 20 hours of required course activity. (Several of the minor course changes submitted involve this change in credit hour allotment to be more consistent across courses.)
3. **Specific M1 courses and revisions** (See Appendix B)
  - A. **MD 814 Human Structure: (Gross Anatomy):** The basics of cell biology and histology will be added to the proposed 9-week (9 credit hours) gross anatomy course and the course name will be changed to “Anatomy.”
  - B. **MD 812 Human Structure: (Histology):** This course will be dropped and the basics of histology will be incorporated into the anatomy course; the organ-specific histology will be repositioned in the systems courses.
  - C. **MD 819 Cellular Structure & Function: Biochemistry (7 credit hours) and MD 816 Cellular Structure & Function: Genetics (4 credit hours):** These courses will continue to be taught in a shared 11-week block.
  - D. **MD 815 Nutrition I:** This course will be dropped and the biochemical aspects of nutrition will be incorporated into the biochemistry course. Nutrition counseling will be incorporated into the Introduction to Clinical Medicine I course.
  - E. **MD 818 Physiology:** This course will be dropped, with organ-specific content taught in the organ systems courses.

- F. **MD 810 Foundations of Disease and Therapeutics:** This 9-week (9 credit hours) course will be the only entirely new course offered in the M1 year. This course will include the basics of immunology, and pharmacology as well as disease and therapeutics which span across all systems.
- G. **MD 817 Neurology:** This 8-week (8 credit hours) course will be the first systems course, combining the current neuroanatomy course with neurophysiology, neurohistology, neuropathology, neuromicrobiology and neuropharmacology.
- H. **MD 813 Behavioral Basis of Medicine:** This 3-week (3 credit hours) course will encompass the content of the current 2-week M2 psychiatry course, with psychopharmacology added.
- I. **MD 811 Introduction to Clinical Medicine I:** Changes to this course largely reflect alignment of credit hours from 12 to 10 credit hours.

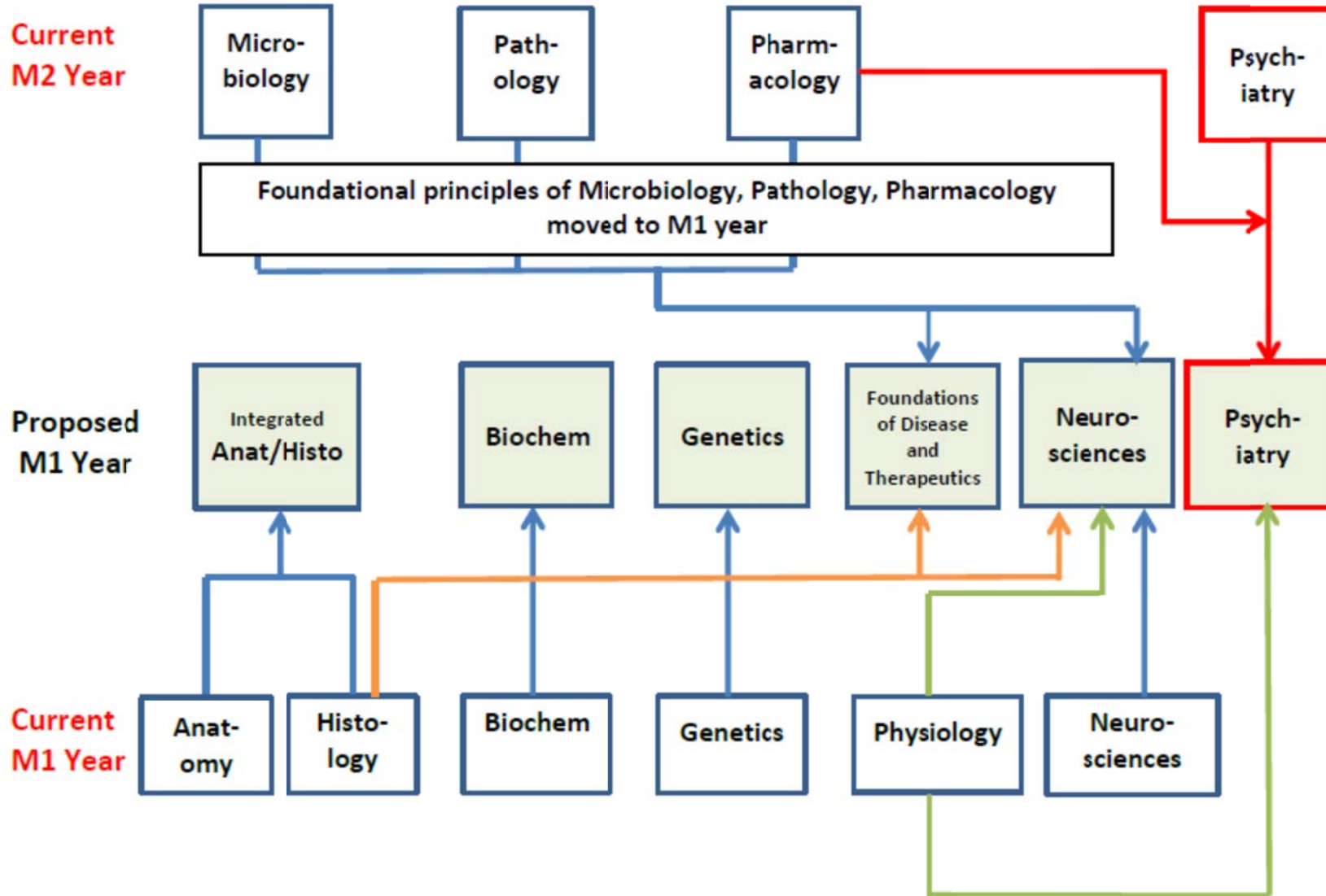
In summary, these nine courses are required in the M1 year and will yield a total of 50 credit hours. The proposed M1 curriculum will begin Fall 2013. (The proposed M2 curriculum will begin in Fall 2014. During Academic Year 2013-2014, students in the M2 year (entering class of 2011-2012) will take the current M2 courses.)

### M2 revisions

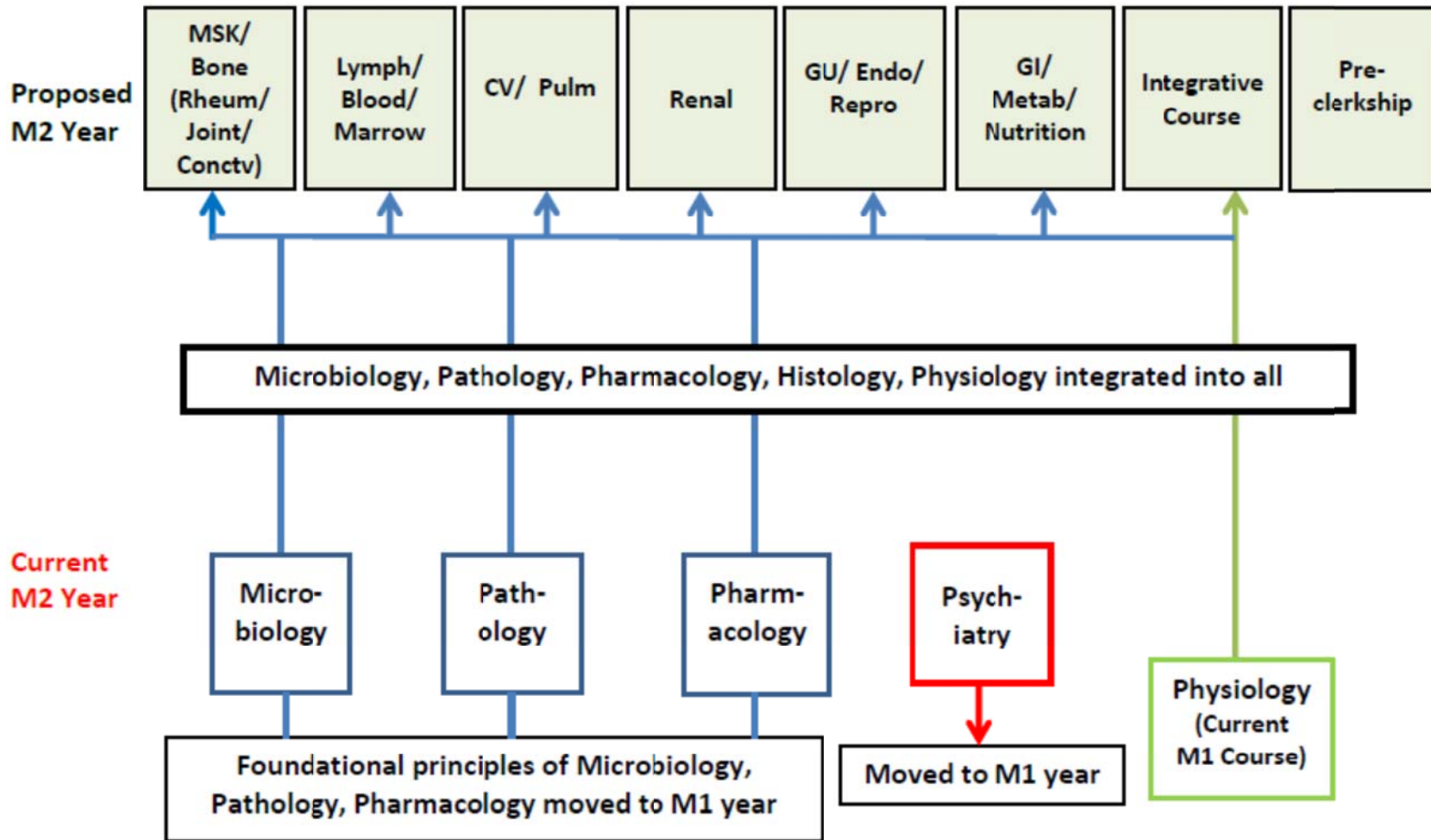
- A. **General:** The M2 courses are new systems courses and are currently in active development.  
**Systems courses:** Current courses in active development are musculoskeletal (includes rheumatology and dermatology), hematology, cardiology, pulmonary, gastrointestinal/nutrition, renal, endocrine/reproductive system, and an integrated systems course. These courses are expected to be 3-5 credit hours each.
- B. **Infection, Immunology, and Infectious Disease (MD822), Pathology (MD 823), Pharmacology (MD 824), and Nutrition II (MD 825):** These courses will be dropped effective Fall 2013. Immunology will be incorporated into the Foundations of Disease and Therapeutics, as will the basics of microbiology, pathology, and pharmacology. Organ-specific microbiology, pathology, and pharmacology will be incorporated into the M2 systems courses. The 1-hour Nutrition I course will be incorporated into the M2 gastrointestinal course. These courses will be brought to the various committees for approval in 2012, to be implemented in the M2 year in Academic Year 2013-14.

Appendix A  
Diagram of Proposed Curriculum

M1 Proposal Diagram



## M2 Proposal Diagram



**Appendix B**  
**Specific Course Changes**

Course	Action	Credit Hours	Approval Form needed
<b>MD 811 ICM1</b>	Adjust credit hrs.	From 12 to 10	<b>Course change</b>
<b>MD 812 Histology</b>	Integrated with Anat	NA	<b>Drop Course form</b>
<b>MD 814 Anatomy</b>	Integrated with Histo; adjust credit hrs.	From 6 to 9	<b>Course change</b>
<b>MD 815 Nutrition</b>	Integrated into Biochem and 2 <sup>nd</sup> year	NA	<b>Drop Course</b>
<b>MD 817 Neurosciences</b>	Adjust content and credit hrs.	From 6 to 8	<b>Course Change</b>
<b>MD 818 Physiology</b>	Integrated with other courses	NA	<b>Drop Course</b>
<b>MD 810 Foundations of Disease and Therapeutics</b>	Create new course (syllabus)	9	<b>New Course Form</b>
<b>MD 813 Behavioral Basis of Medicine</b>	Create new course (syllabus)	3	<b>New Course Form</b>