

Macromolecules and Metabolism (MM)

Course Directors: Dr. Jennifer Kohler and Dr. Andrew Lemoff

Grading:

Final Exam: 50%

Quiz: 20%

Online Problem Sets (4): 6%

Active Learning Sessions (2): 2%

Completion of course evaluation: 2%

Calendar:

8/8 to 9/2 (first 4 weeks of class)

Lecture: 9 am – 12 pm most days

First quiz: 8/19 (2 weeks in)

Final exam: 9/2 (4 weeks in)

Required activities: active learning sessions, quiz, problem sets, final

Syllabi: The length of the syllabi varies based on the topics covered. Each syllabus provides learning objectives you can refer to test your understanding of the topic.

Textbook: As with other courses in medical school, there are no required textbooks; you will only be tested on material in the lectures/syllabus. However, some courses provide recommended texts. These are certainly not necessary, but you can refer to them if you want more background. For this course, the recommend texts are “Molecular Biology of the Cell” by Alberts et al., the 5th edition and “Biochemistry” by Berg, Tymoczko and Stryer, the 6th edition. Important note reiterated: You do NOT need to use textbooks if you do not learn effectively from them.

Additional Resources: The tutoring slides and sessions for this course are wonderful. They provide great lecture summaries and highlight important points.

General Comments:

As Macromolecules and Metabolism (MM) is the first course of medical school, it provides a great chance to start exploring your study strategy. Try the syllabi, lectures (live, streamed, or recorded), and tutoring slides/sessions to see which materials help you learn effectively and efficiently. The quiz is in the middle of the course, so if you find your strategy is not working, you will still have half the course to redirect yourself. Remember, the first semester does not count for anything at all, so do not be alarmed if your quiz grade is not what you want it to be – you just need to pass the final exam!

The main sections of this class are (a) protein structure and function, (b) metabolic pathways for key biomolecules, (c) flow of genetic information, and (d) lipoprotein metabolism and function. It is the medical school “biochemistry” course, and parts of it will be review for those who took biochemistry courses in college. It introduces many basic science concepts and ties them together with clinical medicine.

It is sometimes difficult to keep up with this course as it occurs at the same time as anatomy – the first anatomy exam is 8/26 (one week before the MM final) so try your best to stay on top of both courses because they go quickly.

Human Structure

Course Directors: Dr. Janine Prange-Kiel and Dr. Alisa Winkler

Grading:

Lecture tests (3): 41%

Laboratory tests (3): 36%

Online Embryology modules/quizzes (8): 10%

TBL activities (2): 5%

Osteology sessions (3): 1.5%

Embryology hands-on activity: 0.5%

Dissection performance: 4%

Case-based learning activities (2): 1%

Evaluation: 1%

Calendar:

8/8 to 11/15 (majority of the fall semester)

Lecture: This course has many prerecorded lectures with suggested days to watch them (to stay on track and make sure you have viewed the relevant material before each dissection)

Required activities: lecture tests, laboratory tests, embryology quizzes, TBL activities, dissections, case-based learning activities

Exam 1: 8/26

Exam 2: 10/11

Exam 3: 11/15

Syllabi: Some of the syllabi are formatted differently than for other courses because of the nature of the content. They have helpful summary tables and diagrams.

Textbook: There is no required textbook for this course. An anatomy atlas (like Netter's) is required and can be accessed online if you bring a tablet into the lab (pledge to not use the camera needs to be signed)

Additional Resources: The Veteran Dissector Lab guide is a great way to not only prepare for dissections but also review them. Some students find BlueLink Anatomy from the University of Michigan Medical School (free online) very helpful. The course also has practice lecture and laboratory tags on the test resources section of D2L. Complete Anatomy by 3D4Medical is a helpful 3D anatomy atlas – it is free through UTSW. You can get the app on your phone/laptop, and it is a great way to review structures. You can also see innervation, attachments, etc. The tutoring sessions and slides for this course are fantastic as well. Many people consider them some of the best of medical school.

General Comments:

The exams are not all weighted evenly – the first exam is weighted less than the others. This is a great way to explore strategies that work for you without dropping your grade too much – studying for anatomy is different than other subjects, and the laboratory section can be tricky if you have not studied anatomy before. It is common to do worse on exam 1 than you would have expected, so the lower weight helps lighten the load and allows you to positively redirect yourself for the rest of the course.

The exams are not cumulative. The second exam has the most material – it covers the head and neck, and there is a lot of complicated anatomy (cranial nerves, etc.). Try your best not to get behind on this material because it is a lot to learn.

Microanatomy of Tissues

Course Director: Dr. Peter Michaely

Grading:

Final Exam: 48%

Quiz: 16%

Problem-based Learning (8): 16%

Patient interaction: 2%

Multiple Choice Problem Sets (8): 8%

Annotation Problem Sets (8): 8%

Redcap Survey: 2%

Calendar:

8/15 to 9/29 (first half of fall semester)

9/9 quiz

9/29 final

Syllabus: The syllabus is detailed and includes hyperlinks to pages with illustrations and WINKE (what I need to know for exam) bullet points.

Textbook: There are no required textbooks

Office Hours: Dr. Michaely hosts daily office hours at noon, free of charge.

Additional Resources: **This course has dedicated TA's who may be approached for tutoring, which is generally recommended over SASS tutoring for practical questions.**

Under course resources, there is a 'Microanatomy Study Guide' that highlights all the high-yield points of the course. **It is strongly recommend using this to guide your studying.** There is also a practical study guide that is helpful too. The tutoring slides are relatively new for this course (began with class of 2025) and are helpful. Mason's Anki is a commonly used anki deck in the o-drive. The lab guide (accessed from d2l) is a great resource as well. Dr. Michaely also makes "PBL walkthroughs" with what he intends to be the PBL takeaways, and these videos are very useful as well.

General Comments:

The lectures in the course are prerecorded and can be viewed at any time. They are all from Dr. Michaely, so they have consistent formatting, except for one lecture on peripheral blood given by Dr. Lily Huang. You should view the lecture material before the TBL. The course has 8 sections each pre-recorded lectures, problem sets (multiple choice and annotation) and a PBL. Make sure to view the material beforehand to get the most out of the PBL since it moves quickly.

Unlike other courses besides anatomy lab, there is a laboratory section to the quiz/exam in this course that consists of tagging structures based on clues. The PBLs help prepare for the laboratory section, so I recommend taking them seriously. You can also use the lab guide on d2l to study. Additionally, this course requires students to show competency with the use of a microscope during a demonstration to pass the course.

The quiz (for the class of 2025) only had 8 multiple choice questions and 8 annotation questions, so it is not entirely indicative of your microanatomy knowledge (since it tests a small subset of the content). However, the questions are similar in format to what you will see on the final exam, so it is great practice.

Make sure to download all the slides for the course in advance (many students use an external hard drive because the slides take up a lot of storage) so you have them ready for the PBLs.

Cells

Course Director: Dr. Peter Michaely

Grading:

Final Exam: 48%

Problem Sets (23): 23%

Quiz: 15%

Workbooks (2): 6%

Cell Structure PBL: 3%

Patient Interactions (3): 3%

Redcap Survey: 2%

Calendar:

9/6 to 9/23

Quiz 9/16 (2 weeks in)

Syllabus: The syllabus is detailed and has hyperlinks to a lab guide with illustrations and key concepts.

Textbook: There is no required textbook for this course.

Office Hours: Dr. Michaely hosts daily office hours at noon, free of charge.

Additional Resources: The lab guide and the cells study guide are very helpful (both accessed via d21). The cells study guide has the most important concepts outlined so you can know what to study.

General Comments:

Some of this information may already be familiar to you based on which biochemistry and molecular biology courses you took in undergrad. If not though – no problem – they start from the top and cover all the details. This course has many details, so it is important to know what you should memorize. **The cells study guide is a great way to know which concepts to focus on.**

If you don't understand something, the lab guide is a great way to refresh and see helpful illustrations.

Genetics

Course Directors: Dr. Markey McNutt and Dr. Jonathan Rios

Calendar:

9/26 to 10/17

Required activities: you should attend all the team and individual sessions as well as the final exam.

Grading:

Final Exam: 50%

Team Multiple-Choice Assessments: 25%

Individual Multiple-Choice Assessments: 24%

Course Feedback Survey 1%

Syllabus: The syllabus for this course is extremely brief because the course directors intend the syllabus to be a supplement to the recommended textbook, course materials available on D2L, and, more importantly, the practice problem sets also available on D2L.

Lectures: There are Introductory and Review lectures for each of the three primary course content areas, which go over high-yield concepts. The Introductory lectures provide background knowledge, and the Review lectures consist of brief reviews led by the Instructors that cover topics frequently missed on the problem sets as well as open time for the Instructors to answer any student questions (students are expected to arrive with questions, if any, that will address any confusions or reinforce any specific content topic). It is highly recommended that you attend both the Introductory and Review sessions. Prior knowledge of genetics and genetic principles (i.e. from undergraduate education) are not required to pass this course, and any knowledge gaps can be easily filled with the Introductory and Review sessions. Other supportive content (Practice Problems and recorded lectures) are available on D2L.

Textbook: Nussbaum, R.L., Hamosh, A., Nussbaum, R.L., McInnes, R. R., & Willard, H.F. (2016). *Thompson and Thompson genetics in medicine* (Eighth edition). Elsevier.

This is available through the UTSW Library. Specific relevant textbook sections are noted in the Syllabus.

Additional Resources: Throughout the course, both Instructors are available to address any questions that arise. You can reach the Instructors via email, or there is a dedicated Discussion Board on D2L (preferred). The Discussion board is constantly monitored by both Instructors, and all content in the Discussion board is viewable by all students. As well, we are providing “transcripts” of previous years’ Discussion boards as additional study material.

Expectations: As students in this course, you can expect that the Instructors will be prepared for class and that they will work together to present the Problem Set material in the best manner possible to facilitate students’ comprehension. The Instructors have intentionally designed the course in this format. Historically, the primary challenge for students is adjusting study and comprehension habits to address questions formatted as problem sets (application of concepts).

Because of this, the course focusses on a few key genetics concepts that you are most likely to experience in your clinical practice.

As Instructors in the course, we expect students to recognize the unique and new challenges posed by a course taught in this manner and to recognize that sufficient opportunities are provided for students to master the presented concepts sufficiently to pass this course. Successful completion of this course is largely dependent on students' independent study and successful completion of the material, seeking help and clarification from course instructors (for example, the D2L Discussion Board), and professional communication with the Instructors and other members of your team.

General Comments:

This course is unique in that the instruction, rather than in a lecture format, is provided via Problem Sets that test knowledge, comprehension, and application of key concepts covered in the course/syllabus. There is a brief syllabus, some pre-recorded videos, and module introductions/reviews. Instead of being instruction-based, this course is problem solving-based. Because of this format, success in the course is largely student-driven, including maximizing the study time scheduled as part of the course, repetitive use of practice problems, and, most importantly, reaching out to Instructors with questions. In past years, most of the Discussion board activity occurs in the final week of the course; however, Instructors are available from the first day of the course to the last day of the course via this Discussion board or email. Instructors are also willing to meet in one-on-one sessions or in small groups.

Remember that pre-clerkship is pass/fail, so do not take it too hard if your team misses some questions. It's not a big deal. What matters is being able to solve them on the final exam. No student has ever failed the course because of the Problem Sets. Your ability to solve the problem sets **independently** is the best predictor of passing the final exam.

Although the textbook is highly recommended, many past students did not use it as they felt the syllabi and intro/review lectures were sufficient if you understand the problem sets. The Instructors do recommend you read all relevant sections of the textbook, as this provides background knowledge as you approach the material in the Problem Sets. We would not have assigned a textbook/sections if we did not think it would be helpful.

If you don't understand something, please ask somebody, use the textbook, or reach out to the Instructors via the Discussion board. It is very important to be able to solve all of the problem set questions by yourself. You will be prepared for the final examination if you can do so. Make sure to pay attention when Dr. McNutt and Dr. Rios are discussing the problem sets. It is important to understand the explanations.

Pharmacology

Course Director: Dr. Ron Taussig

Associate Course Director: Dr. Joseph Albanesi

Calendar:

10/18 to 10/31

Grading:

Final exam: 50% (a score of 70% is needed for a passing grade)

Take home quizzes: There are 2 – each worth 25% (these are open book quizzes)

Syllabus: The syllabi are helpful – some are shorter than they are for other courses.

Textbooks: Again, no required textbook but recommended are *The pharmacologic Basis of Therapeutics* by Goodman and Gilman 13th edition and *Basic and Clinical Pharmacology* by Katzung 15th edition.

Additional Resources: Some students find Sketchy helpful. Dr. Michaely has a helpful resource – pharmacopeia. Check it out to see if you're interested in it. Tutoring slides are relatively new to this course.

General Comments:

The first week of this course is about pharmacokinetics/pharmacodynamics. Be warned that this is generally much easier than the second week when you start getting into all of the drugs, so prepare accordingly. Make sure to understand all the practice problems – they are high-yield. All the questions focus on material presented in class lectures, this is the best place for preparation for the exam/quizzes. There will be more emphasis this year on learning the classes of drugs and mechanisms of action rather than memorizing many drugs from the drug lists. Dr. Michaely's Pharmacopeia helps with this.

Organisms and Host (O&H)

Course Director: Dr. David Greenberg

Calendar: 11/1 to 12/16

Grading:

Final Exam: 40%

Quizzes (2): 30%

TBL: 15%

Pathology quizzes (5): 5%

Microbiology quiz: 4%

Microanatomy PBL: 3%

Immunology Problem sets (2): 2%

Pathology gross tissue review: 1%

Syllabus: As with other courses, the syllabi for this course are detailed and sometimes contain information beyond what you will be tested on. There are some helpful images/tables.

Textbook: No textbooks are required, but pathologists love *Robbins Basic Pathology* (and it is the recommended book for this course)

Additional Resources: Tutoring slides. Some people like using Sketchy to learn the bugs/drugs. Pathoma is also a good resource. Sketchy/Pathoma sometimes cover material beyond the scope of this course so keep that in mind.

General Comments:

This course is a long and intense, but many students favorite of their first semester! It contains a lot of immunology in the beginning and then starts to cover bugs/drugs and pathology. This is one of the first courses with mainly clinical applications rather than just basic science, so many people find it very interesting.

One of the challenges of the course is the overlap with anatomy – most of the overlapping portion is while immunology is being taught which is considered one of the more difficult parts of the course. Try to not get behind on immunology while studying for the third anatomy exam. However, once anatomy ends, you will be down to one course and be able to really focus on O&H. Learn the ‘bugs and drugs’ well the first time because you will see them in future courses and on USMLE. There is a ton of content, so start early and pace yourself.