

PHM 564 – Medical Pharmacology

Fall Semester 2 - 2022

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Notice to Students: Although course syllabi at MSUCOM have a consistent format, important details differ by course. For this reason, you must read the syllabus thoroughly at the onset of each course to know what the course will provide and what is expected of you.

Section 1 – Course Information

Course Description

PHM 564 Basic Principles of Medical Pharmacology is a 2-credit hour course provides students with an introduction to general principles of pharmacology and toxicology. Major topics include general principles, pharmacokinetics, pharmacodynamics, pharmacogenomics, drug-drug interactions, autonomic adrenergic and cholinergic pharmacology, antimicrobial pharmacology, cancer chemotherapy pharmacology, and principles of toxicology.

Measurable Course Objectives

The American Osteopathic Association has identified osteopathic core competencies (OCC) essential for your practice as a future osteopathic physician ([reference](#)). These are embedded throughout our programmatic objectives and curriculum. Our curricular structure also encourages your proficiency in the Core Entrustable Professional Activities (EPAs) for Entering Residency as defined by the Association of American Medical Colleges to help you build toward that future phase of your journey toward medical practice ([reference](#)). By the end of this specific course, you should be able to achieve the following objectives within each domain indicated

Medical Knowledge

1. Describe the mechanism of action, indications, contraindications, adverse interactions, and immune response of drugs, vaccines, and nutritional factors used in the prevention, management, and treatment of medical conditions. (*Biomedical Science - Pharmacology*)
2. Review the structural, developmental, and regulatory mechanisms of cells, tissues, and organs as pertinent to pharmacological mechanisms of action. (*Biomedical Science - Molecular/Biochemical*)
3. Recall pathogen/host interactions and immune responses at the organismal, systemic, tissue, and cellular levels through selected clinical presentations and pharmacological interventions. (*Biomedical Science - Microbiology/Immunology*)
4. Examine the physiologic basis of health and the pathophysiologic basis of disease through selected clinical presentations and pharmacological interventions. (*Biomedical Science - Pathology/Pathophysiology*)

Osteopathic Principles, Practice, and OMM

1. Recognize that some individuals and patient groups may respond differently to certain specific drug classes. (*OPP Principles/Integration, Cultural Competency/Humility*)

Patient Care and Procedural Skills

1. Discuss pharmacological interventions as part of evidence-based, cost-effective, patient-centered care plans for common clinical presentations. (*Treatment/Management – EPA 4*)

Professionalism

1. Revisit scientific and ethical principles of basic, clinical, and translational research, specifically as related to pharmacological research, drug development, and clinical drug use. (*Ethical Research, Clinical/Translational Research*)

Professional Development and Reflection Skills

Additionally, the American Osteopathic Association indicates several other competencies on which professional development and reflection across time will foster effective medical practice. These include the ability to work effectively as part of an interprofessional team; the maintenance of an inquisitive and scientific approach to learning and medical practice; and the adoption of self-directed skills in lifelong learning and clinical decision-making. This course will contribute to the development of these longitudinal competencies as indicated:

Scientific Method

Knowledge of the scientific method in the medical domain includes topics such as ethical data collection, hypothesis testing, and conducting and/or evaluating the significance of clinical/translational research to inform evidence-based patient care. It can involve decision-making tools and procedures along with the ability to communicate with lay audiences to gain informed consent or explain research processes and findings. In this course, we foster scientific competency as you:

1. Revisit scientific and ethical principles of basic, clinical, and translational research, specifically as related to pharmacological research, drug development, and clinical drug use. (*Ethical Research, Clinical/Translational Research*)

Self-Directed and Lifelong Learning

Self-directed learning is a 4-step process that occurs within an encapsulated timeframe. The goal of self-directed learning is to help foster self-direction in your lifelong learning and clinical decision-making. In this course, one way you will see the 4 steps of self-directed learning take shape is as follows:

1. **Self-Assessment of Learning Needs** – Students are provided learning materials to prepare for upcoming, case-based sessions. They are asked to reflect on individual learning needs related to these materials by considering level of efficacy or confidence with identified learning objectives and by completing a formative assessment quiz.
2. **Identification, Analysis, & Synthesis of Information** – Based on these reflections and quiz results, students have an opportunity to seek further or clarifying information on content to achieve learning objectives. This may include re-engaging with course materials or seeking supplemental information through sources such as Internet or database research, peer discussion, or discussion with faculty.
3. **Appraisal of Information Source Credibility** – During case-based sessions, students apply and critique synthesized knowledge through guided questions and group discussion. This also allows

time for students to appraise the credibility of information sources and learning within the context of specific, varied patient cases.

4. **Feedback on Information-Seeking Skills** – Faculty facilitators of case-based sessions provide feedback on information-seeking skills through use of both probing questions and direct responses. Additionally, students receive another point of feedback to inform study through completion of a summative assessment or unit exam.

Course Director

This course is jointly directed by Drs Cobbett and Restini. For questions about the course, students can email either Dr Cobbett or Dr Restini.

Name: Peter J. Cobbett, Ph.D.
 Phone: 517-353-5479
 Email: cobbett@msu.edu (preferred method)
 Address: 1355 Bogue St., Room B432, East Lansing, MI 48824

Name: Carolina Restini, Pharm.D., Ph.D.
 Phone: 586-263-6757 (MUC) and 313.578.9646 (DMC)
 Email: restinic@msu.edu (preferred method)
 Address: 44575 Garfield Road, Building UC4 Clinton Township, MI 48038 – Macomb University Center (MUC) and 4707 Saint Antoine, Detroit, MI 48201 – Detroit Medical Center (DMC).

Course Faculty

Name	Email	Phone	Site
Peter J. Cobbett, Ph.D.	cobbett@msu.edu	517-353-5479	EL
Karen Liby, Ph.D.	libykare@msu.edu	517-884-8955	EL
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Richard Neubig MD, Ph.D.	rneubig@msu.edu	517-353-7145	EL
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Curriculum Assistants

Site	Name	Email	Phone
EL	Becky Brandt	brandtb2@msu.edu	517-884-3880
DMC	Papiya Saha	sahapapi@msu.edu	313-578-9629
MUC	Beata Rodriguez	rodri583@msu.edu	586-263-6799

Lines of Communication

- For administrative aspects of the Course: contact the course director by email preferably.
- For content questions relating to a specific lecture or topic: contact the faculty presenter for that specific portion of the course.
- For absences/missed exams (see excused absence information below)
- Please set your notifications in D2L to immediate to receive posted News announcements. You may

choose to receive notifications by email or SMS.

Office Hours

The Course Directors can be available in person (Dr Cobbett in East Lansing and Dr Restini in Detroit) or through Zoom, on request, to discuss administrative issues and matters which a student would prefer not to discuss with a specific instructor. Individual instructors will set up Office Hours sessions on Zoom to permit students to ask questions regarding lecture content.

Course Web Site

The URL for the Course website is: <https://d2l.msu.edu>

Textbooks and Reference Materials

Required

- PHM 564 Course Pack

Recommended

- Brunton, L., et. al (2017) The Pharmacological Basis of Therapeutics, 13th ed. [ISBN 9781259584732]. The 13th edition may be accessed at no cost through <https://ezproxy.msu.edu/login?url=https://accessmedicine.mhmedical.com/book.aspx?bookID=2189> if you have an active MSU account.
- Katzung, B.G., et. al (2020) Basic and Clinical Pharmacology, 15th ed. [ISBN 9781260452310]. The 15th edition may be accessed at no cost through <https://ezproxy.msu.edu/login?url=https://accessmedicine.mhmedical.com/Book.aspx?bookid=2988> if you have an active MSU account.

Course-based Academic Support

The course faculty are here to facilitate your learning. Please feel free to contact the Course Director with any personal issues you may have involving this course. Additional academic support resources can be accessed through MSUCOM Academic and Career Guidance and MSUCOM Personal Counseling.

Courses Begin and End Dates

PHM 564 begins on 10/25/22 and ends on 12/13/22. See addendum for detailed daily course schedule.

Exams/Assessments

The successful achievement of learning objectives will require knowledge and skills acquired in other portions of the overall MSUCOM educational program. Students will be expected to apply concepts and vocabulary learned in other courses to problem-solving for exams/assessments in this course.

To maintain security of assessments, you may NOT post questions on the discussion board regarding exam questions or quiz questions. Kindly email your questions to the course director.

Assessments	Projected Points	Material to be Covered
Quiz #1 - D2L Quiz OPEN: 10/31/22 at 9AM	4	Lectures 1-6 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Quiz #2 - D2L Quiz OPEN: 11/3/22 at 9AM	4	Lectures 7-12 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Unit Exam 5 11/7/22	33	Lectures/modules/cases 10/25/22 through 11/4/22
Quiz #3 - D2L Quiz OPEN: 11/14/22 at 10AM	4	Lectures 13-17 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Quiz #4 - D2L Quiz OPEN: 11/17/22 at 11AM	4	Lectures 18-21 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Unit Exam 6 11/21/22	27	Lectures/modules/cases 11/9/22 through 11/18/22
Quiz #5 - D2L Quiz OPEN: 11/30/22 at 9AM	4	Lectures 22-26 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Quiz #6 - D2L Quiz OPEN: 12/1/22 at 10AM	4	Lectures 27-28 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Quiz #7 - D2L Quiz OPEN: 12/7/22 at 10AM	4	Lectures 29-30 Open for 24 hours ONLY! Once opened you will have 10 minutes to complete. (NO MAKE UP AVAILABLE)
Unit Exam 7 12/13/22	30	Lectures/modules/cases 11/22/22 through 12/8/22

Course Grades

The course faculty determine the threshold for satisfactory performance in each preclerkship course. Your course percentage score will be determined by the following formula:

$$\frac{((\text{Unit Exam 5} + \text{Unit Exam 6} + \text{Unit Exam 7}) + (\text{Quiz 1} + \text{Quiz 2} + \text{Quiz 3} + \text{Quiz 4} + \text{Quiz 5} + \text{Quiz 6} + \text{Quiz 7}))}{\text{total points possible (118)}} \times 100$$

= Final Percent Score

- **P-Pass**—means that you have achieved a satisfactory level of performance and will receive credit for this course. To obtain a “P” grade for this course, you must earn a Final Percent Score of 70%.
- **N-No Pass Grade**—means that you have not achieved a satisfactory level of performance and no credit will be granted for this course. If you earn a final percent score **below 70%**, you will receive an “N” grade.
 - **Remediation** – If you receive an “N” grade and earn a final percent score in the course of 65 % or greater, you will be eligible to attempt remediation. The remediation opportunity for this course will be by examination. The pass level for the remediation exam is 70%.

All remediation exams for semester 2 are scheduled for January 3, 2023, and January 4, 2023. Refer to the remediation policy information provided in Section 2 of this syllabus for more information.

Student Evaluation of the Course

We want your feedback on how to improve this course.

- Informal Feedback: Feel free to approach the Course Directors or any of the other course faculty with your reactions and suggestions.
- Formal Evaluation: In addition to the above, we ask every student in the class to complete formal on-line course evaluation upon conclusion of the course. Student feedback provides Course Directors with valuable information regarding their performance, the performance of their colleagues, and the quality of the course. The information gained from these evaluations is used to continuously improve future offerings of this course. Students can access the evaluation system at: [MSUCOM Pre-clerkship Evaluation System](#).

Section 2 – Policies

Please refer to the Student Handbook at <https://com.msu.edu/current-students/student-handbook-course-catalog> for these and other policies.

Academic Honesty and Professionalism

Every student is responsible for their behavior and is expected to adhere to all MSU and MSUCOM policies of academic honesty and professionalism, as outlined in the MSUCOM Student Handbook and the MSU Medical Student Rights and Responsibilities. These documents may be found on the MSUCOM website. Additional guidance on academic integrity may be found on the MSU Ombudsperson's website at <https://ombud.msu.edu/sites/default/files/content/Academic-Integrity-at-MSU-updated-August-2017.pdf>

Incidents of academic dishonesty or professional misconduct will be addressed by the faculty, administration, or staff; such action may include, but is not limited to: giving a failing grade, referring a student for judicial review, directing the student to the Associate Dean of Medical Education, evaluation by the Committee on Student Evaluation, and other actions outlined in the Medical Student Rights and Responsibilities document.

Types of Class Session

MSUCOM designates lectures and other class sessions by their delivery method. While additional terms may be used in a specific course, the following will provide general guidance to the type of session:

- Live or livestream lecture: broadcast at a designated time; intended to be viewed synchronously
- Online Lecture: recorded content, may be viewed asynchronously
- Webinar: more interactive session where student participation is expected
- Lab: may refer to on-site clinical skills training or online lab session; see details

Changes to Course Schedule or Requirements

Due to external circumstances, the course requirements published in the course syllabus and/or course schedule may be subject to change. Timely notification Communication regarding changes will be

provided to enrolled students via the course D2L site and/or email. Any changes made will consider the MSU Code of Teaching Responsibility and the MSU Medical Students Rights and Responsibilities.

Mandatory and Optional Class Sessions

All lectures and other class sessions are considered to be integral to the course, and students are expected to attend, view, or participate in each session. Some sessions are designated as “mandatory” in that attendance at the session on the scheduled date and time is required. Depending on the course, a student may earn points for attending or participating in a mandatory session or may lose points for failing to attend or participate. Availability of make-up points for missed sessions is at the discretion of the course director. Optional class sessions are offered by faculty to assist students in learning or reviewing course content.

Absences from Mandatory and Examinations/Assessments

It is the responsibility of the student to know which class sessions are deemed as mandatory and comply with the MSUCOM policy regarding absences from mandatory sessions and examinations. This policy may be found in the MSUCOM Student Handbook on the MSUCOM website. Requests for an excused absence must be submitted via the [student portal](#).

Computer-Based Testing

It is the responsibility of each student to know and comply with the MSUCOM policy on computer-based testing. This policy may be found in the MSUCOM Student Handbook on the MSUCOM website.

Administration of quizzes, examinations, and other assessments may be self-proctored, virtual proctored, or classroom proctored. Regardless of the proctoring method, you are expected to take the exam in a quiet, private setting. Just like in a proctored exam, you are not to access notes, textbooks, references, your phone, or other materials, and you are not to interact with fellow students or others. Remember that integrity is defined as what you do when no one is looking.

You are also expected to not record, photograph, take screen shots, make notes of, or otherwise attempt to make a copy of any exam item for any purpose, including your personal use. A student who is discovered to have cheated or breached exam security will be subject to formal disciplinary action, up to and including dismissal from MSUCOM.

If you have concerns or evidence of an exam security breach on this or any exam, you may report that to an MSUCOM administrator or through the online concern form.

Medical Student Rights and Responsibilities

If problems arise between instructor and student, both should attempt to resolve them by informal, direct discussions. If the problems remain unsolved, the Associate Dean for Medical Education and/or the MSU Ombudsperson may be consulted. The MSU Medical Student Rights and Responsibilities (MSRR) document defines processes for additional steps, including submission of a formal grievance. The MSSR may be found in the MSUCOM Student Handbook and online at splife.studentlife.msu.edu.

iClicker Reef/(iClicker Student) Policy

It is your responsibility to know and comply with the iClicker Reef (iClicker Student) Policy. This policy may be found in the MSUCOM Student Handbook. If you forget your device or if it does not work, for whatever reason, no make-up experiences will be provided, and no points will be given.

If iClicker Reef/iClicker Student is used to take attendance for an on-campus event, you will be expected to arrive to the physical location on time and to stay for the duration of the assigned activity. If iClicker Polling is used to take attendance for an online event, you will be expected to start the session at the scheduled time and participate for the duration of the assigned activity.

As a matter of professionalism, please note that under no circumstances should you provide access to your iClicker Reef/Student account to another student by sharing your device and/or account login, nor should you accept another student's device or login credentials to access iClicker Polling on their behalf. Answering questions or checking in for attendance on behalf of another student by using their device or account is considered to be academic dishonesty and may result in disciplinary action up to and including dismissal from the college.

Remediation

The MSUCOM Policy for Retention, Promotion and Graduation requires successful completion of each required course to progress in the curriculum. If you receive an "N" grade in a course, that grade will be recorded on your official transcript; you must meet the course requirement by successfully remediating or repeating the course.

Eligibility to attempt remediation of the course is determined by criteria described in the "Course Grades" section of the syllabus. If you are not eligible to attempt remediation, or if you fail the remediation, you must retake the course, provided you are eligible to continue in the program as determined by the Committee on Student Evaluation. The remediation exam for PHM564 Fall 2022 will be scheduled for Tuesday 3 January 2023 or Wednesday 4 January 2023.

Student Safety and Well-being

The MSUCOM website and Student Handbook provide information on student safety, campus security, access to medical care and counseling services, and to policies on injuries and exposures. If you have an injury or acute illness on campus, an incident report should be completed. The form is available on the MSUCOM intranet or from Academic Programs.

Academic Support Resources at MSUCOM

As a way to acclimate you to the curriculum at MSUCOM, we have created a program called On Target: <https://michiganstate.sharepoint.com/sites/OnTargetforAcademicSuccess>

On this site you will find semester roadmaps which gives a general overview of each semester, tools needed to be successful in the curriculum and targeted resources for your unique learning situation. In each semester's road map, you will also find course expectations, tips for success, potential trouble spots, longitudinal course integration, and specific course study guides.

Requests for Accommodations

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities (RCPD) at 517-884-7273 or online at rcpd.msu.edu. Once eligibility for an accommodation has been determined, you may be issued a Verified Individualized Services and Accommodation (VISA) form. Each VISA includes an expiration date; to request an accommodation, you must have an active VISA. You may work with RCPD to renew a VISA.

During the preclerkship curriculum, the college will help to coordinate accommodations for additional testing time. Provide your VISA to Nancy Thoma, thoman@msu.edu, A333 East Fee Hall at the start of the term and/or at least two weeks prior to the assessment event (test, project, labs, etc.). Requests for accommodations received with less notice will be honored whenever possible. You may choose whether or not you wish to use accommodations for a particular event. For other accommodations, you may also review your VISA with the course director and curriculum assistant assigned to that course.

Title IX Notifications

Michigan State University is committed to fostering a culture of caring and respect that is free of relationship violence and sexual misconduct, and to ensuring that all affected individuals have access to services. For information on reporting options, confidential advocacy and support resources, university policies and procedures, or how to make a difference on campus, visit the Title IX website at titleix.msu.edu.

Limits to confidentiality. Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, you should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. Instructors must report the following information to other University offices (including the Department of Police and Public Safety):

- Suspected child abuse/neglect, even if this maltreatment happened when you were a child;
- Allegations of sexual assault, relationship violence, stalking, or sexual harassment; and
- Credible threats of harm to oneself or to others.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the MSU Counseling and Psychiatric Services.

Addendum: Course Schedule

Course schedule for the current semester will be posted to D2L. Changes to the course schedule will be noted on the class academic calendar ("Google calendar") and communicated to students via D2L and/or email. The schedule for the most recent offering of this course will be posted on the MSUCOM website under Current Students/Preclerkship Curriculum.

