
Term Information

Effective Term Spring 2024

General Information

Course Bulletin Listing/Subject Area Chemistry
Fiscal Unit/Academic Org Chemistry - D0628
College/Academic Group Arts and Sciences
Level/Career Undergraduate
Course Number/Catalog 3301
Course Title Science and Policy of Drug Development
Transcript Abbreviation Sci&PolDrgDmt
Course Description The course focus is on the science and public policy that govern drug development. The principles of chemistry and biochemistry are applied to research and development of drug therapeutics. The drug approval process of drug safety, toxicity, and clinical trials will focus on pharmaceutical industry challenges of drug affordability, safety, and drug development impact on global public health.
Semester Credit Hours/Units Fixed: 3

Offering Information

Length Of Course 14 Week, 12 Week, 7 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? No
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
Grade Roster Component Lecture
Credit Available by Exam No
Admission Condition Course No
Off Campus Never
Campus of Offering Columbus, Lima, Mansfield, Marion, Newark, Wooster

Prerequisites and Exclusions

Prerequisites/Corequisites Chem 1220 and Biology 1113
Exclusions Not open to students with credit for PHR3301
Electronically Enforced Yes

Cross-Listings

Cross-Listings Crosslisted in PHR

Subject/CIP Code

Subject/CIP Code 40.0501
Subsidy Level Baccalaureate Course
Intended Rank Sophomore, Junior, Senior

Requirement/Elective Designation

Health and Well-being

Course Details

Course goals or learning objectives/outcomes

- Students will gain an advanced understanding of the intersection of chemistry, biochemistry, and scientific policy as it applies to drug discovery, development, testing, safety, and global public health.
- Students will develop an understanding the concepts of global health how it influences other disciplines such as public health, social work, pharmaceutical sciences, and other chemistry and biology experiences.
- Students develop critical thinking skills as they analyze multiple dimensions of health and well-being by studying clinical trial results for drugs therapeutics and evaluate data on the side effects, safety, and efficacy of drugs.

Content Topic List

- Understanding the chemistry behind drug and therapeutic development.
- The policies and procedures necessary to bring therapeutics and vaccines safely to market.
- Identify diseases affecting mental and/or physical health and how therapeutics treat those diseases.
- Understanding therapeutic side effects that can negatively affect mental and/or physical health and well-being such as drug dependence.
- Develop an understanding that evolution of current therapeutics and next-generation advancements is continuing process.

Sought Concurrence

No

Attachments

- Syllabus Science and Policy of Drugs_final 01-17-23.docx: Chem 3301 Syllabus
(Syllabus. Owner: Ramirez, Ana G)
- submission-health-well-being_CHEM 3301.pdf: GE Theme Submission
(Other Supporting Documentation. Owner: Ramirez, Ana G)
- PHR concurrence for CHEM 3301.pdf: Concurrence Email PHR
(Concurrence. Owner: Ramirez, Ana G)

Comments

- Concurrence obtained from Pharmacy for cross-listed course *(by Jackman, Jane E on 06/07/2023 09:55 AM)*
- Please request a concurrence from the College of Pharmacy *(by Vankeerbergen, Bernadette Chantal on 02/16/2023 01:03 PM)*

COURSE REQUEST
3301 - Status: PENDING

Last Updated: Vankeerbergen, Bernadette
Chantal
08/22/2023

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Ramirez, Ana G	01/19/2023 02:03 PM	Submitted for Approval
Approved	Jackman, Jane E	02/06/2023 12:57 PM	Unit Approval
Revision Requested	Vankeerbergen, Bernadette Chantal	02/16/2023 01:03 PM	College Approval
Submitted	Ramirez, Ana G	06/07/2023 09:23 AM	Submitted for Approval
Approved	Jackman, Jane E	06/07/2023 09:55 AM	Unit Approval
Approved	Vankeerbergen, Bernadette Chantal	08/22/2023 08:34 AM	College Approval
Pending Approval	Jenkins, Mary Ellen Bigler Hanlin, Deborah Kay Hilty, Michael Vankeerbergen, Bernadette Chantal Steele, Rachel Lea	08/22/2023 08:34 AM	ASCCAO Approval

CHEM 3301– Spring 2024: Science & Policy of Drug Development

COURSE OVERVIEW

Instructor: Dr. Renee A. Bouley & Dr. Ryan J. Yoder

Email Address: bouley.8@osu.edu yoder.157@osu.edu

Office Hours & Communication: A schedule for office hours will be posted to the course website on Carmen. To schedule an alternative appointment, contact one of the instructors via email and include times that may be convenient for you to meet. *Please include CHEM 3301 in the subject line of any email correspondence.* We will do what we can to work with your schedule and would encourage you to directly reach out whenever you feel the need, whether your concerns relate to the material or the course itself or anything else. We will do our best to get back to you via email within 24 hours during the week and 48 hours on the weekend. The instructors will only use official OSU channels for communication both with individual students and the course as a whole (OSU Email, Carmen Inbox, etc.).

Lecture: MW 9:00 am-10:20 am (3 credit hours)

Prerequisites: CHEM 1220 and BIOL 1113.

Course Description: This theme course takes students on a journey to learn more about the science and processes that govern how molecules become drugs. Fundamental ideas of chemistry and biochemistry will be established, which will allow a study of how those principles are applied to the research and development of drug and therapeutic candidates. The approval process for drugs to come to market will be discussed, focusing on aspects such as safety, toxicity, and clinical trials. Challenges within the pharmaceutical industry, namely affordability, will also be highlighted. Several classes of drugs that treat a variety of afflictions will serve as case studies that students will analyze together in small groups.

GE Health and Wellness Theme: This class is part of the Health and Wellness Theme of the General Education program. This course is classified as a 3-credit hour theme class. This course will deeply engage with the process of drug discovery and development, allowing students to understand the various facets involved in this process such as potency, specificity, safety, toxicity, metabolism. This class will also discuss the process of clinical trials and allow students to analyze actual data from a recent drug that went through phase III clinical trials. Students will be able to understand how drug development supports the constant improvement of health and wellness by exploring the intersection of chemical/biochemical principles and global health impacts. In addition, there will be case studies on various drug classes to appreciate how various diseases such as bacterial infection, cancer, and depression are treated. This will enable students to better grasp the complexities of each disease and how drugs are used safely to improve health and wellness through rigorous development and testing.

GE Course Goals:

- 1) Students will gain an advanced understanding of the intersection of chemistry, biochemistry, and scientific policy as it applies to drug discovery, development, testing, safety, and global public health.
- 2) Students will draw on knowledge from pre-requisite coursework to strengthen their understanding of the new concepts presented in this course. In addition, the global health aspect of this coursework will be influenced by disciplines and/or personal experiences in public health, social work, pharmaceutical sciences, and other chemistry and biology coursework that students have experience in.
- 3) Students will explore and analyze multiple dimensions of health and well-being by analyzing clinical trial results from a variety of drugs (chemotherapeutics, antidepressants, vaccines, antibiotics, etc.). In this process, students will strengthen their critical thinking skills as they evaluate data about side effects, safety, and efficacy of drug candidates for multiple disorders that affect mental and/or physical health.

Learning Outcomes:

Upon the completion of this course, students will be able to:

- 1) Understand and articulate the chemistry behind drug and therapeutic development.
- 2) Explain the policies and procedures necessary to bring therapeutics and vaccines safely to market.
- 3) Identify diseases that affect mental and/or physical health and how therapeutics are able to treat those diseases.
- 4) Summarize possible therapeutic side effects that can negatively affect mental and/or physical health and well-being such as drug dependence.
- 5) Be conscious of drug discovery and development from a variety of perspectives.
- 6) Be aware of the continuing evolution of what is known about current therapeutics and next-generation advancements and be equipped with the knowledge to understand future work in the subject area.

GE Learning Outcomes for Health and Wellness Theme:

ELO 1.1 Engage in critical and logical thinking about the topic or idea of the theme.	<p>The critical analysis of real clinical trial data will allow students to understand how drug safety must be balanced with drug potency and weigh the pros and cons of a new drug. The students will need to think about whether this new drug would <i>improve</i> health and wellness significantly.</p> <p>Exams will test critical and logical thinking by expecting students to solve scientific problems based on the knowledge they accrue during the course.</p>
ELO 1.2 Engage in advanced, in-depth, scholarly exploration of the topic or idea of the theme.	Students will generate a literature report on an FDA approved drug and read the primary literature to understand how the drug works, the disease it treats, and its safety profile. They will need to synthesize information from various sources to determine if this drug <i>improves</i> health and wellness.
ELO 2.1 Identify, describe, and synthesize approaches or experiences as they apply to the theme.	<p>This class is very interdisciplinary and will expose students to how chemistry is used to design new drugs, which are then evaluated biologically to determine things like potency and safety. Then these drugs are studied in clinical trials in the medical field.</p> <p>Analysis of clinical trial data and the literature report will require students to analyze data from various sources and synthesize them together to build a compelling argument for approval. In-class discussion of the clinical trial results will foster appreciation for different viewpoints, approaches, and experiences. These varying experiences may impact how the pros and cons may be weighted when evaluating a drug.</p>
ELO 2.2 Demonstrate a developing sense of self as a learner through reflection, self-assessment, and creative work, building on prior experiences to respond to new and challenging contexts.	<p>The challenges of the drug discovery process will be discussed throughout this class. New avenues of drug discovery, especially in the treatment of cancer, will be discussed.</p> <p>Students will prepare a literature report by the end of this class, which will allow them to build upon what they learned in this class and previous experiences. They will also need to discuss various contexts that impact a drug's ability to improve health and wellness such as cost, availability, and other cultural aspects. Students will present on their findings from their literature report to the class, which will also give students an opportunity to assess their peers. Students will then read their peer and instructor feedback to reflect on their presentation.</p>
ELO 3.1 Explore and analyze health and well-being from theoretical, socio-economic, scientific,	FDA policies that guide drug development and clinical trials will be discussed. A case study on the ethics of high prices for a

historical, cultural, technological, policy and/or personal perspectives.	critical drug will be discussed to understand the socio-economic side of drug development. Various technological advances in the drug discovery pipeline will be discussed in regard to their impact on the industry. Students will analyze clinical trial data and need to discuss the various policies set by the FDA in deciding whether to vote to approve the drug or not.
ELO 3.2 Identify, reflect on, or apply strategies for promoting health and well-being.	Students will identify in their literature report how a specific FDA-approved drug significantly improves the health and well-being of the public by treating a specific disease/disorder. Students will reflect on how the specific drug balances a therapeutic effect with safety/toxicity concerns. Students will also identify and reflect on these factors in analyzing real clinical trial data at the end of Unit II.

HOW THIS COURSE WORKS

Credit hours and work expectations: This is a **3-credit-hour course**. According to [Ohio State policy](#), students should expect around 3 hours per week of time spent on direct instruction in addition to 6 hours of study and preparation to achieve an overall C grade in the course. Students should expect to spend additional time outside of class to receive a higher grade.

COURSE MATERIALS AND TECHNOLOGIES

Textbooks:

1. [Fundamentals of Chemistry for Today, 1st ed.](#) Spencer L. Seager, Tiffiny Rye-McCurdy, Ryan J. Yoder (Cengage, published Autumn 2023)
2. [Textbook of Drug Design and Discovery, 5th ed.](#) Edited by Kristian Stromgaard, Povl Krogsgaard-Larsen, and Ulf Madsen. (Rent from Vital Source for 180 days, \$66.00)
3. [Basic Principles of Drug Discovery and Development, 1st ed.](#) Benjamin Blass. (E-text FREE through [OSU Library](#))

Primary literature sources:

1. Gornall, J and Hoey, A. A pill too hard to swallow: how the NHS is limiting access to high priced drugs. *BMJ* (2016) 354, i14117. <https://doi.org/10.1136/bmj.i4117>
2. Rasmussen, S.G.F., DeVree, B.T., Zou, Y. et al. 2011. Crystal structure of the β_2 adrenergic receptor-Gs protein complex. *Nature* 477:549–555
3. Penmatsa, A., Wang, K.H., and Gouaux, E. 2013. X-ray structure of dopamine transporter elucidates antidepressant mechanism. *Nature* 503:85–91
4. Borgelt, L.M., Franson, K.L., Nussbaum, A.M., and Wang, G.S. 2013. The pharmacologic and clinical effects of medical cannabis. *Pharmacotherapy* 33:195–209.
5. Kwak, E.L., Bang, Y.-J., Camidge, D.R. et al. 2010. Anaplastic lymphoma kinase inhibition in non-small-cell lung cancer. *New Engl. J. Med.* 363:1693–1703.

Course Technology: For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP) **Email:** [servicedesk@osu.edu](mailto: servicedesk@osu.edu) **TDD:** 614-688-8743

Baseline Technical Skills and Required Equipment/Software:

- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).
- [CarmenZoom virtual meetings](#): Please read the Zoom App handout posted on Carmen on the Modules page.

- [Microsoft Office 365](#): All Ohio State students are eligible for free Microsoft Office 365 through Microsoft's Student Advantage program. Full instructions for downloading can be found [at go.osu.edu/office365help](http://go.osu.edu/office365help).

Carmen Access (<https://carmen.osu.edu>): You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps: If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

COURSE SCHEDULE

WEEK	Monday	Wednesday
1	Syllabus and course introduction <u>Unit I: Science of Drug Development</u> Text #1 Ch. 8: Organic structure	Text #1 Ch. 10 Carbonyl functional groups
2	NO CLASS	Text #1 Ch. 12: Amino acids and Proteins
3	Quiz 1 Text #2 Ch. 1: Intro to Drug Design & Discovery	Text #2 Ch. 2: Molecular recognition
4	Text #2 Ch. 3: Ligand-Based Drug Design	Text #2 Ch. 5: Drug-Like Properties
5	MIDTERM EXAM	<u>Unit II: Policies of Drug Development</u> Text #3 Ch. 2: History of drug discovery, from ancient times to today
6	Text #3 Ch. 2: Societal and governmental impacts	Text #3 Ch. 8: Safety and Toxicity
7	Text #3 Ch. 8: Safety and Toxicity	Quiz 2 Text #3 Ch. 9: Basics of Clinical Trials
8	Text #3 Ch. 9: Basics of Clinical Trials	Text #3 Ch. 11: The Pharmaceutical Industry
9	Ethics of a high-priced drug (BMJ article)	ANALYSIS OF REAL CLINICAL TRIAL RESULTS
10	SPRING BREAK	SPRING BREAK
11	<u>Unit III: Drug Case Studies</u> Text #2 Ch. 11: Enzyme Inhibitors	Text #2 Ch. 11: Enzyme Inhibitors
12	Text #2 Ch. 12: Receptors and Signal Transduction	Text #2 Ch. 18: Antidepressants
13	Quiz 3 Text #2 Ch. 19: Opioid and Cannabinoids	Text #2 Ch. 21: Anticancer agents
14	Text #2 Ch. 23: Antibiotics	Text #1 Ch. 13: Immune System & Antibodies
15	Text #1 Ch. 13: COVID-19 & Vaccines	Student Presentations on FDA approved drugs
F	Student Presentations on FDA approved drugs Take-home final exam due	

***SCHEDULE SUBJECT TO CHANGE! ANY CHANGES WILL BE COMMUNICATED THROUGH OFFICIAL COURSE CHANNELS
HOW YOUR GRADE IS CALCULATED**

Your performance in the course will be evaluated on the basis of total points earned for the semester. The goal of the instructor is for the course average at the end of the semester to fall as close as possible to the dividing line between a C+/C. Thus, should individual assignments have averages well below that threshold, adjustments in points could be made to certain assignments. Assignments in the course schedule below (and the schedule itself) are subject to change. The distribution of points and the OSU grading scale are shown below.

Assignment Type	Points	Description of Assignment and Points	Percentage
Pre-lecture assignments	150	15 pre-lecture assignments worth 10 pts each	15%
Quizzes	150	3 quizzes each worth 50 pts	15%
Exam	150	Midterm exam worth 150 pts	15%
Clinical Trial Analysis	150	Analysis of real clinical trial results	15%
Drug literature report	150	Literature report on an FDA approved drug	15%
Final Presentation	100	Presentation on literature report, peer-feedback, and self-reflection	10%
Take-home final exam	150	Take-home (open-note/book) cumulative final exam	15%
Total Points	1000		100%

OSU Grading Scale

93–100: A	73–76.9: C
90–92.9: A-	70 –72.9: C-
87–89.9: B+	67 –69.9: D+
83–86.9: B	60 –66.9: D
80–82.9: B-	Below 60: E
77–79.9: C+	

ASSIGNMENT DESCRIPTIONS:

Pre-lecture assignments: Students will answer questions and summarize key terms from the assigned reading before attending lecture. These assignments will be worth 10 pts each and turned in on Carmen prior to the start of class.

Clinical trial analysis: Students will be provided with real clinical trial results during class and will work together in groups to analyze the results and make a decision on the approval of the drug. Each group will need to summarize their results to the class and discuss and debate the pros and cons of the drug. Each group member will fill out a group evaluation form to report on the individual contributions of each member of the group.

Drug literature report: Students will be assigned an FDA approved drug to research. Students will compile a literature report on that drug with information about the effectiveness of the drug, its biological target, and safety and toxicity.

Final Presentation: Each student will prepare a short presentation on their literature report on an FDA approved drug and present in class (70 points). Students will also provide feedback to each other during these presentations (10 points). Finally, students will submit a reflection on their presentation after they have read over the peer and instructor feedback (20 points).

Take-home final exam: Students will complete a cumulative take-home final exam, in which they will be able to use their notes and books/literature sources to complete. Each student will complete the exam individually and will have one week to complete the exam.

OTHER COURSE POLICIES

Copyright Disclaimer: The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [*Code of Student Conduct*](#), and that all students will complete

all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct." The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact the instructor.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

Title IX Statement: All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources. If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu. For Title IX concerns contact Shawn Jackson, Title IX Coordinator (jackson.368@osu.edu or (740)725-6219). To make a confidential report contact the Office of Counseling & Wellness counselors Leslie Beary (beary.4@osu.edu) or Ellen Thomas (thomas.1159@osu.edu). For more information regarding Title IX concerns refer to <https://titleix.osu.edu/>.

Diversity Statement: The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

The Office of Counseling & Wellness: Services for students are available through tele-mental health appointments via Zoom. Mental health concerns or stressful events can lead to diminished academic performance or a reduction in the ability to function well. If you or a student you know is struggling with life on or off-campus, help is available by calling (740) 725-6349 or emailing Leslie Beary (beary.4@osu.edu). If you are in crisis call 9-1-1. To speak to someone outside of normal office hours, students can reach the OSU After-Hours Line at (614) 292-5766. Help is also available through the National Suicide Prevention Lifeline by calling (800) 273-8255 or contacting Crisis Text Line by texting 4Hope to 741-741.

Trigger Warning Language: Some content of this course may involve media that may be triggering to some students due to descriptions of and/or scenes depicting acts of violence, acts of war, or sexual violence and its aftermath. If needed, please take care of yourself while watching/reading this material (debriefing with a friend, contacting a Sexual Violence Support Coordinator at 614-292-1111, or Counseling and Consultation Services at 614-292-5766, and contacting the instructor if needed). Expectations are that we all will be respectful of our classmates while consuming this media and that we will create a safe space for each other. Failure to show respect to each other may result in dismissal from the class.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

-As this is a Marion campus course, accommodations should be made through the Marion campus ODS!

Requesting Disability Services (ODS) Accommodations: The university strives to make all learning experiences accessible to all students. If you anticipate or experience academic barriers based on your disability (including mental health,

chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, register with the Office for Disability Services at <https://sierra.accessiblelearning.com/OSU/ApplicationStudent.aspx>. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. ODS contact information: marionds@osu.edu; 740-725-6247; <https://osumarion.osu.edu/academics/academic-support-services/disability-services.html>; 128 Maynard Hall, 1461 Mount Vernon Avenue, Marion.

Accessibility of Course Technology: This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor. Note: Closed captioning should be available for lecture videos on YouTube.

- [CarmenCanvas accessibility](#), Streaming audio and video, [CarmenZoom accessibility](#)

Financial Aid/Attendance Reporting

Regularly attending class is critical in achieving academic success. If you receive some form of financial aid, such as the Pell Grant and/or the Federal Direct Student Loan, federal regulations require you to attend classes. In part, this is why your instructor records attendance. Maintaining satisfactory academic progress (SAP) is important in preserving your future eligibility for financial resources. The Ohio State University is required by federal law to verify the enrollment of students who participate in Federal Title IV student aid programs (Federal grants and student loans) and/or who receive educational benefits through the Department of Veterans Affairs. It is the responsibility of the university to identify students who do not commence attendance or who stop attendance in any course for which they are registered and paid. Non-attendance is reported by each instructor and can result in a student being administratively withdrawn from the class section. Please contact the Financial Aid Office located in Maynard Hall, room 100 at 740-724-6389 for information regarding the impact of course withdrawals on financial aid eligibility.

Academic Success Center (ASC): The Academic Success Center (ASC) offers tutoring services (at no additional cost to normal tuition) to assist OSU student learning. The physical location of the center is in Morrill Hall 216, however, services will be offered primarily through virtual means this semester. The Center consists of three parts: Math Lab, STEM Center, and Writing Center, that each provide professional tutoring help on a drop-in and appointment basis. Additionally, if you would like to submit a request for assistance in a subject outside these disciplines, please submit an online application for a tutor [here](#). For the most up-to-date information regarding all aspects of the center please visit our website (<https://u.osu.edu/marionasc/>), or email AcademicSuccess@osu.edu. Please remember that the Ohio Public Health situation is very fluid and constantly changing, thus your flexibility is much appreciated and will help us to provide you with the most assistance! The STEM Center offers assistance with courses in science and engineering. Dr. Tiffany Rye-McCurdy will provide assistance with chemistry and biology concepts during Zoom drop-in hours (<https://osu.zoom.us/j/4557368017>) and Zoom appointments by request (rye-mccurdy.1@osu.edu.) The center also aims to continue offering tutoring by appointment for geography, physics, and engineering courses. Please visit the Stem Center website (<https://u.osu.edu/stemcenter/>) for further details and information.

GE Theme course submission worksheet: Health & Wellbeing

Overview

Courses in the GE Themes aim to provide students with opportunities to explore big picture ideas and problems within the specific practice and expertise of a discipline or department. Although many Theme courses serve within disciplinary majors or minors, by requesting inclusion in the General Education, programs are committing to the incorporation of the goals of the focal theme and the success and participation of students from outside of their program.

Each category of the GE has specific learning goals and Expected Learning Outcomes (ELOs) that connect to the big picture goals of the program. ELOs describe the knowledge or skills students should have by the end of the course. Courses in the GE Themes must meet the ELOs common for **all** GE Themes and those specific to the Theme, in addition to any ELOs the instructor has developed specific to that course. All courses in the GE must indicate that they are part of the GE and include the Goals and ELOs of their GE category on their syllabus.

The prompts in this form elicit information about how this course meets the expectations of the GE Themes. The form will be reviewed by a group of content experts (the Theme Advisory) and by a group of curriculum experts (the Theme Panel), with the latter having responsibility for the ELOs and Goals common to all themes (those things that make a course appropriate for the GE Themes) and the former having responsibility for the ELOs and Goals specific to the topic of **this** Theme.

Briefly describe how this course connects to or exemplifies the concept of this Theme (Health & Wellbeing)

In a sentence or two, explain how this class “fits’ within the focal Theme. This will help reviewers understand the intended frame of reference for the course-specific activities described below.

(enter text here)

Connect this course to the Goals and ELOs shared by *all* Themes

Below are the Goals and ELOs common to all Themes. In the accompanying table, for each ELO, describe the activities (discussions, readings, lectures, assignments) that provide opportunities for students to achieve those outcomes. The answer should be concise and use language accessible to colleagues outside of the submitting department or discipline. The specifics of the activities matter—listing “readings” without a reference to the topic of those readings will not allow the reviewers to understand how the ELO will be met. However, the panel evaluating the fit of the course to the Theme will review this form in conjunction with the syllabus, so if readings, lecture/discussion topics, or other specifics are provided on the syllabus, it is not necessary to reiterate them within this form. The ELOs are expected to vary in their “coverage” in terms of number of activities or emphasis within the course. Examples from successful courses are shared on the next page.

Goal 1: Successful students will analyze an important topic or idea at a more advanced and in-depth level than the foundations. In this context, “advanced” refers to courses that are e.g., synthetic, rely on research or cutting-edge findings, or deeply engage with the subject matter, among other possibilities.

Goal 2: Successful students will integrate approaches to the theme by making connections to out-of-classroom experiences with academic knowledge or across disciplines and/or to work they have done in previous classes and that they anticipate doing in future.

	Course activities and assignments to meet these ELOs
ELO 1.1 Engage in critical and logical thinking.	
ELO 1.2 Engage in an advanced, in-depth, scholarly exploration of the topic or ideas within this theme.	
ELO 2.1 Identify, describe, and synthesize approaches or experiences.	
ELO 2.2 Demonstrate a developing sense of self as a learner through reflection, self-assessment, and creative work, building on prior experiences to respond to new and challenging contexts.	

Example responses for proposals within “Citizenship” (from Sociology 3200, Comm 2850, French 2803):

ELO 1.1 Engage in critical and logical thinking.	<i>This course will build skills needed to engage in critical and logical thinking about immigration and immigration related policy through: Weekly reading response papers which require the students to synthesize and critically evaluate cutting-edge scholarship on immigration; Engagement in class-based discussion and debates on immigration-related topics using evidence-based logical reasoning to evaluate policy positions; Completion of an assignment which build skills in analyzing empirical data on immigration (Assignment #1)</i>
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	<p>Completion 3 assignments which build skills in connecting individual experiences with broader population-based patterns (Assignments #1, #2, #3)</p> <p>Completion of 3 quizzes in which students demonstrate comprehension of the course readings and materials.</p>
<p>ELO 2.1 Identify, describe, and synthesize approaches or experiences.</p>	<p>Students engage in advanced exploration of each module topic through a combination of lectures, readings, and discussions.</p> <p><u>Lecture</u> Course materials come from a variety of sources to help students engage in the relationship between media and citizenship at an advanced level. Each of the 12 modules has 3-4 lectures that contain information from both peer-reviewed and popular sources. Additionally, each module has at least one guest lecture from an expert in that topic to increase students' access to people with expertise in a variety of areas.</p> <p><u>Reading</u> The textbook for this course provides background information on each topic and corresponds to the lectures. Students also take some control over their own learning by choosing at least one peer-reviewed article and at least one newspaper article from outside the class materials to read and include in their weekly discussion posts.</p> <p><u>Discussions</u> Students do weekly discussions and are given flexibility in their topic choices in order to allow them to take some control over their education. They are also asked to provide information from sources they've found outside the lecture materials. In this way, they are able to explore areas of particular interest to them and practice the skills they will need to gather information about current events, analyze this information, and communicate it with others.</p> <p>Activity Example: Civility impacts citizenship behaviors in many ways. Students are asked to choose a TED talk from a provided list (or choose another speech of their interest) and summarize and evaluate what it says about the relationship between civility and citizenship. Examples of Ted Talks on the list include Steven Petrow on the difference between being polite and being civil, Chimamanda Ngozi Adichie's talk on how a single story can perpetuate stereotypes, and Claire Wardle's talk on how diversity can enhance citizenship.</p>
<p>ELO 2.2 Demonstrate a developing sense of self as a learner through reflection, self-assessment, and creative work, building on prior experiences to respond to new and challenging contexts.</p>	<p>Students will conduct research on a specific event or site in Paris not already discussed in depth in class. Students will submit a 300-word abstract of their topic and a bibliography of at least five reputable academic and mainstream sources. At the end of the semester they will submit a 5-page research paper and present their findings in a 10-minute oral and visual presentation in a small-group setting in Zoom.</p> <p>Some examples of events and sites: The Paris Commune, an 1871 socialist uprising violently squelched by conservative forces</p>

	<p><i>Jazz-Age Montmartre, where a small community of African-Americans—including actress and singer Josephine Baker, who was just inducted into the French Pantheon—settled and worked after World War I.</i></p> <p><i>The Vélodrome d’hiver Roundup, 16-17 July 1942, when 13,000 Jews were rounded up by Paris police before being sent to concentration camps</i></p> <p><i>The Marais, a vibrant Paris neighborhood inhabited over the centuries by aristocrats, then Jews, then the LGBTQ+ community, among other groups.</i></p>
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Goals and ELOs unique to Health & Wellbeing

Below are the Goals and ELOs specific to this Theme. As above, in the accompanying Table, for each ELO, describe the activities (discussions, readings, lectures, assignments) that provide opportunities for students to achieve those outcomes. The answer should be concise and use language accessible to colleagues outside of the submitting department or discipline. The ELOs are expected to vary in their “coverage” in terms of number of activities or emphasis within the course. Examples from successful courses are shared on the next page.

GOAL 3: Students will explore and analyze health and wellbeing through attention to at least two dimensions of wellbeing. (Ex: physical, mental, emotional, career, environmental, spiritual, intellectual, creative, financial, etc.).

	Course activities and assignments to meet these ELOs
ELO 3.1 Explore and analyze health and wellbeing from theoretical, socio-economic, scientific, historical, cultural, technological, policy, and/or personal perspectives.	
ELO 3.2 Identify, reflect on, or apply strategies for promoting health and well-being.	

From: [Kwiek, Nicole](#)
To: [Jackman, Jane](#)
Cc: [Bowman, Michael](#)
Subject: Letter of concurrence
Date: Wednesday, May 10, 2023 4:21:05 PM
Attachments: [image001.png](#)

Dear Dr. Jackman,

Thank you for the opportunity to work with the Department of Chemistry and Biochemistry to develop a new course, CHEM/PHR3301: Science & Policy of Drug Development. The College of Pharmacy's Undergraduate Studies Committee reviewed the course proposal in its April 2023 meeting and provided a unanimous vote of approval. We are excited about this instructional collaboration on the Columbus campus – please accept this email as a statement of our unit's concurrence.

We look forward to feedback from the curricular panels about the course's potential designation as Health and Wellbeing Theme course.

Warm regards,
Nicole

Cc: Michael Bowman, College of Pharmacy Registrar



Nicole Cartwright Kwiek, PhD, FAPE

Clinical Professor of Pharmacy Education and Innovation

Associate Dean of Undergraduate Studies

[College of Pharmacy](#)

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