

Syllabus · MA 30300

Spring 2024

Lectures (MWF)

Lectures will be face-to-face on Monday, Wednesday, and Friday. You are expected to attend every lecture. Lectures will not be recorded; however, Dr. Hood will post her notes on the Brightspace page.

Section #	Time	Room	Instructor	Office
133	MWF 2:30pm	HAMP 2101	Dr. Kaitlyn Hood	MATH 844
244	MWF 3:30pm	HAMP 2101	Dr. Kaitlyn Hood	MATH 844

Communication

Questions about math content are best asked in person, either before or after class or in office hours.

Questions about grading, course policies, calendar, etc. can be asked in person or via email. In your email communications, please include the course title “MA 303” in the subject line. In the body, please address your professor by Dr. Hood. Where possible, please write succinct emails. If more information is needed, Dr. Hood will reply with follow-up questions. Here are some links with information about [Emailing a Professor](#) and [Email Etiquette](#).

Instructors' Contact Information

Instructors' contact information is listed below, as well as their office hours.

Professor	E-mail	Office Hours	Office
Dr. Hood	kthood@purdue.edu*	MWF 1-2pm	MATH 844

*Dr. Hood will answer emails between 9am – 5pm on weekdays and will do her best to respond within 2 business days (i.e. days in which Purdue University is open and classes are held).

Brightspace Page for MA 30300

Check the course Brightspace page (<https://purdue.brightspace.com/>) often for important information and announcements.

- All due dates for the semester are posted in Brightspace.
- The link to the online Homework and eText in MyLab Math will be posted in Brightspace.
- Your grades will be posted in the Brightspace Gradebook.
- Any changes to the syllabus or important announcements will be posted to the Brightspace page under “Announcements”.
- You can access instructions for using Brightspace at the following page under “Learner Resources”: <https://www.purdue.edu/brightspace/Documentation.php>

Course Page for MA 30300

You can check this page for information:

https://www.math.purdue.edu/~kthood/MA303_Spring2024.html

This information will also be posted on the course Brightspace page.

Course Calendar

The tentative course calendar will be posted on the Brightspace page. The calendar is also posted online here: https://www.math.purdue.edu/~kthood/calendar_ma303_sp24.html

Any changes or adjustments to the schedule will be announced on the Brightspace page.

Course Outcomes

At the end of the course, you will be able to:

1. Classify homogeneous first-order linear systems of differential equations by their phase portraits and solve them by using the eigenvalue method.
2. Analyze the behavior of nonlinear systems near critical points by their stability and type and apply this knowledge to study some applicable models and mechanical systems.
3. Use the Euler method and Runge-Kutta method to solve ordinary differential equations numerically.
4. Use the Fourier series and the method of separation of variables to solve partial differential equations.
5. Use the eigenfunction expansion method to solve Sturm-Liouville problems.
6. Use the method of Laplace transforms to solve linear differential equations.

Textbook and Homework Access

Online Homework will be completed in the Pearson MyLab Math platform.

- You will need an access code for Pearson MyLab Math.
- You should access Pearson MyLab Math through the course page in Brightspace.
- For reference, the textbook is “Differential Equations and Boundary Value Problems: Computing and Modeling” (Tech Update, 5th Edition) by Edwards, Penney, and Calvis.
- You do not need a physical textbook. A digital version of the textbook (eText) is included in Pearson MyLab Math.
- Video: [How to register for MyLab and Mastering with Brightspace by D2L](#)

There is a two-week grace period before you must purchase an access code.

Online Homework

There are 24 online homework assignments using *MyLab Math*. You can access *MyLab Math* through the Brightspace page.

- The Homework schedule is on the Brightspace page under the description of each week.
- Generally, homework is due once a week on Tuesdays at 11:59pm.
- The two lowest online homework scores will be dropped.
- You are allowed to use calculators, notes, books, and to consult peers, and tutors to complete the homework. Your homework submission should reflect your own understanding.

Unlimited Attempts

There are unlimited attempts on the homework questions.

- Open Answer Questions: you have 3 tries to answer the question correctly.
- Multiple Choice Questions: the number of tries = number of choices - 2

After a student has reached the maximum number of tries on a question, they will be presented with another **attempt**. This will be a similar question but with different coefficients and a different solution. Students will have **unlimited attempts** at each question with (up to) 3 tries for each attempt.

Notes:

1. You will use one attempt when you access "Help Me Solve This".
2. The highest grade of all attempts is recorded in the Gradebook. There is no penalty for submitting an incorrect answer.

Late Online Homework Policy

(Updated Jan 19, 2024) Late Online HW will be accepted up to 5 days after the deadline with a flat 20% penalty per day.

- Correct answers submitted before the deadline will not be penalized.
- The questions (or question parts) submitted after the deadline will be reduced by 20% for each day that it is late.
 - For example, if you submit an answer 1.5 hours after the deadline, the score will be reduced by 20% on that question.
 - If you submit an answer 26 hours after the deadline, the score will be reduced by 40% on that question.
- Apologies for the confusion. The previous settings work for a different Pearson product, but not for MyLab Math.

~~Late Online HW will be accepted up to 48 hours after the due date, with a 2% per hour late penalty.~~

- ~~• Correct answers submitted before the deadline will not be penalized.~~
- ~~• The questions (or question parts) submitted after the deadline will be reduced by 2% for each fraction of the hour that it is late.~~
 - ~~○ For example, if you submit an answer 1.5 hours after the deadline, you will lose 3% credit on that question.~~

- ~~More information about late penalties in MyLab Math is posted online here:~~
~~https://help.pearsoncmg.com/mastering/student/standalone/TopicsStudent/late_penalties_student.htm~~

Penalties for late online HW may be waived in the rare cases of Purdue Approved Absences, as determined by the Office of the Dean of Students: <https://www.purdue.edu/advocacy/students/absence-policies.html>

Written Homework

There are 11 handwritten homework assignments submitted online to *Gradescope*. You can access *Gradescope* through the Brightspace page.

- The Homework schedule is on the Brightspace page under the description of each week.
- Generally, homework is due once a week on Tuesdays at 11:59pm.
- One written homework score will be dropped.

You are allowed to use calculators, notes, books, and to consult peers, and tutors to complete the homework.

Late Written Homework Policy

The lowest Written HW score will be dropped, but in return, late Written HW will not be accepted. Gradescope will not accept submissions after the deadline has passed. If an assignment is missed for reasons that are serious, unavoidable, and beyond the student's control, the situation will be handled on an individual basis. Documentation may be required in such cases.

Calculators

Calculators are not allowed in exams. You may use calculators for homework assignments.

Generative AI Policy

Generative AI may be used on Homework Assignments in this class. Be aware that AI can also provide misleading or incorrect information. Use of AI can negatively affect your learning as they can offer shortcuts that reduce the need for critical engagement that is key to deep and meaningful learning.

Any HW that you submit should reflect your own understanding. It is important that you do not use AI tools to generate an answer and submit it as if it was your own work. Learning to use AI is an emerging skill, and there are some [tutorials](#) on how to use them.

Acknowledgements:

If you use AI, such as ChatGPT, you should acknowledge it in your HW. Below are some examples of acknowledgements.

- "ChatGPT was used to suggest an appropriate method for solving question #2. I then solved the question using the method by hand. Here are the prompts that I used: ..."

- “ChatGPT was used to get a better understanding of this method. I used it to solve a similar problem to the HW. Then I solved the HW problem on my own. Here are the prompts that I used: ...”

Be aware of the limits of ChatGPT, such as the following:

- If you provide minimum-effort prompts, you will get low-quality results. You will need to refine your prompts in order to get good outcomes. This will take work.
- Don’t trust anything it says. If it gives you a number or fact, assume it is wrong unless you either know the answer or can check with another source. You will be responsible for any errors or omissions provided by the tool. It works best for topics you understand.
- Any content, ideas, or assistance obtained through AI tools must be appropriately cited, similar to any other reference or source. You will need to go and find the relevant citations from the primary literature (i.e. journal articles). Be warned that ChatGPT tends to fabricate fictitious citations. Be sure to double check and read the original source.
- AI is a tool, but one that you need to acknowledge using. Please include a paragraph at the end of any assignment that uses AI explaining what you used the AI for and what prompts you used to get the results. Failure to do so is in violation of academic honesty policies.
- Be thoughtful about when this tool is useful. Don’t use it if it isn’t appropriate for the case or circumstance.

Prohibited Uses:

AI should not be used to complete the midterm exams or final exam, unless explicitly permitted by the instructor.

Accessibility:

All students must have equal access to AI tools. If a particular tool is used, it should be free of cost for all users. (For example, ChatGPT-3 is allowed since it is free to all users, but ChatGPT-4 is not since it requires a paid subscription)

Consequences for Misuse:

Misuse of AI tools in coursework, which includes but is not limited to producing unoriginal work, uncited use of AI-generated content, or unauthorized assistance on assessments, will be considered a breach of academic integrity. Consequences will follow Purdue’s policies on academic dishonesty as detailed in this syllabus, which may include grade penalties, course failure, or more severe disciplinary actions.

Technical Problems

If you have technical problems with MyLab Math, you should contact [Pearson Technical Support](#). Extensions on HW will not be given unless you have documentation in the form of a letter from Pearson Technical Support and a case number.

If you have technical problems with Gradescope, you should first read the documentation on the help center at <https://help.gradescope.com/#>. If that does not resolve the problem, you should contact help@gradescope.com.

It is your responsibility to maintain your personal computer in working order. In the case of a malfunction, there are many [computer labs](#) on campus that you can use to complete the homework.

If you lose your phone, you can [request a Hardware Token](#) (free of charge) to submit BoilerKey Two-Factor Authentication. More information at [BoilerKey FAQ](#).

Exams

There will be two midterm exams and a final exam.

- The two midterms are both in class exams. The tentative dates of the midterm exams are listed below:

Exam	Date	Time	Location
Exam 1	Monday, Feb 12, 2024	During class time	HAMP 2101
Exam 2	Friday, Mar 22, 2024	During class time	HAMP 2101

- You are not permitted to use calculators, books, notes, electronic devices, websites, or to consult a peer or any other person on the exams.
- Exam scores are final and there are no exam re-takes.

Final Exam

- The final exam will be comprehensive, and it will cover the material from the entire course.
- The date and time of the final exam has not yet been scheduled by the Registrar. The final exam information will be announced later in the semester.

Missed Exam Policy

If there are any special circumstances that may affect your ability to successfully complete an exam (illness, family emergency, conflict with another class at Purdue, etc.), you should discuss the situation with your instructor *before* taking the exam (if you are physically able to).

- In rare cases, students may be permitted to take a make-up exam.
 - This exam will be a different version from the in-person exam taken on the original date.
 - Make-up Exam dates and times are limited.
- If a student is sick at the time of the exam, the appropriate course of action is to schedule a make-up exam for when the student is feeling better. Once an exam is taken, it cannot be voided or retaken.

Late penalties on Exams	
Reason for Missing an Exam:	Late Penalty:

Approved Absence with Supporting Documentation*	No Late Penalty
Misremembered the time or date of the exam**	20% Late Penalty
If a student is sick (for example, with a cold), they should email the instructor before the exam starts to negotiate an appropriate course of action. Documentation may be required.	

***Supporting Documentation of Approved Absences** – A table of what supporting documentation to provide for each Approved Absence is listed on pages 7-8.

****Unapproved Absences** – If you miss an exam with an Unapproved Absence such as remembering the time or date wrong, you will be given an opportunity to take a make-up exam with a 20% late penalty.

- That means, for an exam worth 100 points with a 20% late penalty, then 20% of your scored points will be subtracted from your score. For example, if you scored 86/100 on the exam, then your score will become $(86 \times 0.8) / 100 = 68.8 / 100$ after the penalty is applied.

iClicker Cloud

This class will use iClicker Cloud as an in-class response system. The responses on iClicker Cloud will not be graded for credit. Instead, Dr. Hood will use the responses to assess student learning and adjust lectures accordingly.

Participation in the iClicker Cloud polls is highly encouraged. The polls allow you a chance to practice the material in class and receive feedback. Making mistakes on the iClicker Cloud polls is not penalized and, in fact, is expected. It is better to make mistakes in the iClicker Cloud polls and learn from it, than to make that mistake on the exams.

How to Login with iClicker Cloud

Bring a mobile device to class and log in online at: <https://student.iclicker.com/#/login> and click on “Sign in through your campus portal” link at the bottom of the screen and log in with their Purdue Career Account login and password.

~~If you have a clicker (from iClicker Classic that you used for another class), it is also possible to use a physical clicker instead of a mobile device.~~ (edit: Jan 8, 2024 – it appears the classroom does not have a receiver to collect physical clicker input. Instead you will need a mobile device or web browser to participate.)

Grades

Course grades are determined from your overall total score using a percentage scheme according to the formula in the table below:

Graded Item	Percentage
Online Homework	22%

Written Homework	10%
Two midterms @ 17% each	34%
Comprehensive Final Exam	34%

- You can check your running Total Score online in the Brightspace Gradebook. The Total Score percentage grades will not be rounded.
- Final letter grades will be determined using the following tentative grading scale:

Tentative Grading Scale	
Letter	Percentage
A+	≥ 97%
A	93% - 96.9%
A-	90% - 92.9%
B+	87% - 89.9%
B	83% - 86.9%
B-	80% - 82.9%
C+	77% - 79.9%
C	73% - 76.9%
C-	70% - 72.9%
D+	67% - 69.9%
D	63% - 66.9%
D-	60% - 62.9%
F	< 60%

Will there be a curve?

- Online Homework and Written Homework scores will not be curved.
- At the end of the semester, the total class score will be calculated according to the formula above and a letter grade assigned.
 - For each of the grades in the Tentative Grading Scale, it's possible that at the end of the semester a somewhat lower percentage will be enough to earn that letter grade.
 - If the grading scale changes, it will be chosen so that the grade distribution is consistent with previous semesters of this class.

Attendance Policy

This course follows Purdue's academic regulations regarding attendance, which states that students are expected to be present for every meeting of the classes in which they are enrolled. Attendance will not be recorded, but you are responsible for all information, announcements, and course material that is presented in lectures.

Approved Absences

- If a student has an absence for reasons that are serious, unavoidable, and beyond the student's control, then the situation will be handled on an individual basis.
- To account for situations where a supporting document may not be easily available, **we drop the two lowest Online Homework scores and one lowest Written Homework score.**
- Please read the table below for the type of documentation needed for each absence.

Type of Absence	Description of Absence	Supporting Documentation Needed
Grief Absences	We know that a time of loss can be difficult for a student. Students are eligible for a specific number of days of excused absence following the death of a loved one.	Submit a Grief Absence Request Form .
Jury Duty Absences	Students summoned to serve as potential jurors or who have been empaneled as jurors in a criminal or civil trial may request an excused absence.	Submit a Jury Duty Absence Request Form .
Military Absences	Purdue recognizes that those actively serving in the reserves or National Guard of the United States are required by their military contract to attend mandatory training, with failure to participate punishable under law.	Submit a Military Absence Request Form .
Parenting Leave	Students who are pregnant, have recently given birth, or need a leave of absence to care for a newborn, adopted, legal guardian, or foster care, may petition for a leave of absence.	Submit a petition for a leave of absence through the Office of Institutional Equity (OIE).
Medical Absences due to long-term conditions	For doctor's visits, medical procedures, or flare-ups due to an ongoing long-term health condition , you should request accommodations under the Americans with Disabilities Act (ADA).	Contact the DRC (Disability Resource Center)

Emergent Medical Absences (Formerly MEAPS)	Students may occasionally miss class and other academic obligations due to hospitalization, emergency department, or urgent care visits , whether physical or mental health related. This policy intends to afford arrangements for students experiencing serious and short-term medical situations that cause them to miss coursework or exams.	Submit a Medical Excused Absence Request Form .
Other Non-Emergency Illnesses	Absences due to non-emergency illnesses (like the flu or a cold) are not covered by the MEAPS policy. Covid-19 diagnosis (with mild symptoms) is now covered by this policy.	A doctor's note. The type of documentation may be negotiated with the instructor if a doctor's note is not obtainable.
Conflicts for Purdue Events	Conflicts with Purdue sports teams, academic events, or other academic related events may be approved.	A letter signed by the sponsor of your Purdue University activity.
Personal Emergencies or Unforeseen Circumstances	Personal emergencies or unforeseen circumstances may be approved with documentation. These include: <ul style="list-style-type: none"> - House fire - Car accident - Visa problems - Cancelled flights - Family emergencies 	The type of documentation may be negotiated with the instructor. For help with contacting an instructor about an absence, see these Coaching Tips .
Technical Problems	There are computer labs on campus students can use if their personal computer is malfunctioning. Check the Pearson Student Support page with answers to common questions. If all else fails, contact Pearson Technical Support . If you lose your phone, you can request a Hardware Token (free of charge) to submit BoilerKey Two-Factor Authentication. More information at BoilerKey FAQ .	A letter from Pearson Technical Support and a case number. A letter from help@gradescope.com and a case number.
Other Absences	Absences or missed assignments due to the following events will not be approved: <ul style="list-style-type: none"> - Overslept/forgot the due date. - Had a due date in another class. - Didn't finish before the deadline. - Vacation or leisure travel. 	

Section Changes and Drops

During the first week of classes, you can make section changes or drop the course yourself within myPurdue, and no signatures are required. From the second week until the deadline, you need to submit an electronic section change or withdrawal request on myPurdue.

If you switch between recitation sections, please email both your previous instructor and current instructor to ensure that your HW scores are copied over into the new Brightspace Gradebook.

Important Dates

Last day to drop a course without it on your record:

Monday, January 22nd, 2024

Last day to drop a course and receive a W:

Friday, April 12th, 2024

Please see [Spring 2024 Add/Drop Information](#) for more details.

Academic Integrity

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies.

Nondiscrimination Statement

A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course Brightspace under University Policies and Statements.

Accessibility

Purdue University strives to make learning experiences accessible to all participants. If you anticipate or experience physical or academic barriers based on disability, you are encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

If you have been certified by the Disability Resource Center (DRC) as eligible for accommodation, you should contact your TA to discuss your accommodation as soon as possible. You should send your Course Accessibility Letter (CAL) to your TA and to the professor. Here are instructions for how to send your course accessibility letter: <https://www.purdue.edu/drc/students/course-accessibility-letter.php>. Accommodations will be implemented once the CAL is received. According to University policy, accommodations are not retroactive.

Students with disabilities whose DRC Course Accessibility Letter (CAL) includes test accommodations must first release their CAL to the instructor and then schedule to take their exams through the DRC at olympic.accessiblelearning.com/Purdue. While exams are scheduled through the DRC, the exams will be organized and proctored by the Undergraduate Math Office (UMO). You must schedule your exam at

least one week before the exam date listed on the syllabus. In the case of finals week, you must do this at least one week before the start of finals week. The instructor will provide the UMO with your exam and the UMO will administer it and provide the result to the instructor for grade reporting. Students who fail to follow this process and these deadlines risk not being able to have their accommodations for that exam.

Mental Health/Wellness Statement

- **If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [WellTrack](#).** Sign in and find information and tools at your fingertips, available to you at any time.
- **If you need support and information about options and resources,** please contact or see the [Office of the Dean of Students](#). Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.
- **If you find yourself struggling to find a healthy balance between academics, social life, stress, etc.,** sign up for free one-on-one virtual or in-person sessions with a [Purdue Wellness Coach at RecWell](#). Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.
- **If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students.** If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours. The [CAPS website](#) also offers resources specific to situations such as COVID-19.

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday.

Commercial Note Taking in Classes

Notes taken in class are generally considered to be "derivative works" of the instructor's presentations and materials, and they are thus subject to the instructor's copyright in such presentations and materials. No individual is permitted to sell or otherwise barter notes, either to other students or to any commercial concern, for a course without the express written permission of the course instructor. See University Senate Document 03-9, April 19, 2004.

Course and Instructor Evaluations

During the last two weeks of the semester, you will be provided an opportunity to evaluate this course and your instructor(s) through online course evaluations. On Monday of the 14th week of classes, you will

receive an official email from evaluation administrators with a link to the online site. You will have two weeks to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. We strongly urge you to participate in the evaluation system.

Emergency Preparation

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course Brightspace page. You are expected to read your @purdue.edu email on a frequent basis.