

MA 523, Partial Differential Equations

Professor Donnelly

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Hours: MWF 2:30-3:20

Course Information

Spring, 2019

MWF 10:30-11:20

Class Location UNIV103

Course Credit Hours 3

Course Webpage:

<http://www.math.purdue.edu/academic/courses/coursepage?subject=MA&course=51100>

Instructor webpage:

<http://www.math.purdue.edu/people/bio/hgd>

Course Description

First order quasi-linear equations, characteristics, classification, and canonical form for linear equations, equations of mathematical physics, study of Laplace, wave, and heat equations, connection with differential geometry, Cauchy-Kovalevsky theorem.

Required Texts

Zachmanoglov and Thoe, Introduction to Partial Differential Equations

Prerequisites

MA 504 or equivalent, rigorous understanding of continuity, differentiation and integration, inverse function theorem, divergence theorem.

Course Structure

2.1 Homework

Homework is assigned and collected in class.

You are encouraged to attempt all the questions and discuss with your classmates.

However, the write-up must be your own.

2.2 Midterm

One midterm will be given in class, date will be determined later. Calculators are not allowed. Neither are books or notes.

2.3 Final Exam

Final exam will be given during finals week. Location and date of the final will be provided later. Calculators are not allowed. Neither are books or notes.

Grading

Homework	100
Midterm	100
Final	200

In this mathematics course accommodations are managed between the instructor, student and DRC Testing Center.

Students should see instructors outside class hours before or after class or during office hours to share your Accommodation Memorandum for the current semester and discuss your accommodations as soon as possible.

Academic Dishonesty

Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, Student Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

[Purdue's student guide for academic integrity](https://www.purdue.edu/odos/academic-integrity/)

(<https://www.purdue.edu/odos/academic-integrity/>).

Use of Copyrighted Materials

Students are expected, within the context of the Regulations Governing Student Conduct and other applicable University policies, to act responsibly and ethically by applying the appropriate exception under the Copyright Act to the use of copyrighted works in their activities and studies. The University does not assume legal responsibility for violations of copyright law by students who are not employees of the University.

A Copyrightable Work created by any person subject to this policy primarily to express and preserve scholarship as evidence of academic advancement or academic accomplishment. Such works may include, but are not limited to, scholarly

publications, journal articles, research bulletins, monographs, books, plays, poems, musical compositions and other works of artistic imagination, and works of students created in the course of their education, such as exams, projects, theses or dissertations, papers and articles.

Attendance

Students are expected to be present for every meeting of the classes in which they are enrolled. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts or absences can be anticipated, such as for many University sponsored activities and religious observations, the student should inform the instructor of the situation as far in advance as possible...For unanticipated or emergency absences when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, or by contacting the main office that offers the course. When the student is unable to make direct contact with the instructor and is unable to leave word with the instructor's department because of circumstances beyond the student's control, and in cases of bereavement, the student or the student's representative should contact the Office of the Dean of Students.

The link to the complete [policy and implications](http://www.purdue.edu/studentregulations/regulations_procedures/classes.html) can be found at:
http://www.purdue.edu/studentregulations/regulations_procedures/classes.html

Grief Absence Policy for Students

Below is the University's Grief Absence Policy for Students:

Purdue University recognizes that a time of bereavement is very difficult for a student. The University therefore provides the following rights to students facing the loss of a family member through the Grief Absence Policy for Students (GAPS). GAPS Policy: Students will be excused for funeral leave and given the opportunity to earn equivalent credit and to demonstrate evidence of meeting the learning outcomes for misses assignments or assessments in the event of the death of a member of the student's family.

See the [University's website](http://www.purdue.edu/studentregulations/regulations_procedures/classes.html) for additional information:
http://www.purdue.edu/studentregulations/regulations_procedures/classes.html

Violent Behavior Policy

Purdue University is committed to providing a safe and secure campus environment for members of the university community. Purdue strives to create an educational environment for students and a work environment for employees that promote educational and career goals. Violent Behavior impedes such goals. Therefore, Violent Behavior is prohibited in or on any University Facility or while participating in any university activity.

See the [University's website](#) for additional information:
<http://www.purdue.edu/policies/facilities-safety/iva3.html>

Emergencies

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 website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

See the [University's website](#) for additional information:
https://www.purdue.edu/ehrs/emergency_preparedness/

Accessibility and Accommodations

Purdue University strives to make learning experiences as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Disability Resource Center at: drc@purdue.edu or by phone: 765-494-1247.

Nondiscrimination

Purdue University is committed to maintaining a community which recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each individual to strive to reach his or her own potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life.

Purdue University views, evaluates, and treats all persons in any University related activity or circumstance in which they may be involved, solely as individuals on the basis of their own personal abilities, qualifications, and other relevant characteristics.

Purdue University prohibits discrimination against any member of the University community on the basis of race, religion, color, sex, age, national origin or ancestry, genetic information, marital status, parental status, sexual orientation, gender identity and expression, disability, or status as a veteran. The University will conduct its programs, services and activities consistent with applicable federal, state and local laws, regulations and orders and in conformance with the procedures and limitations as set forth in Purdue's Equal Opportunity, Equal Access and Affirmative Action policy which provides specific contractual rights and remedies. Additionally, the University

promotes the full realization of equal employment opportunity for women, minorities, persons with disabilities and veterans through its affirmative action program.

*Any question of interpretation regarding this Nondiscrimination Policy Statement shall be referred to the **Vice President for Ethics and Compliance** for final determination.*

Disclaimer

This syllabus is subject to change.