



MAP4413 — Fourier Series and Transforms — Fall, 2019

Time and Location: MWF period 6, Little Hall, Room 221

Office Hours : MWF period 7 and by appointment made 24 hours in advance.

Note on Email: I often check my email just in the early afternoons on weekdays. So if you need a reply by a certain time, plan ahead accordingly.

Text: *Applied Fourier Analysis* by Tim Olson. An electronic copy will be provided free to all enrolled students. You will find additional useful information at appliedfourier.com including a link to buy a hard copy book (also available on Amazon). There will also be class notes on material not in the book.

Course Description: This course will cover the basics of Fourier Series, the Discrete Fourier Transform and the Fourier Transform followed by applications including sampling and interpolation, signal and image processing, image and audio compression, and partial differential equations

Prerequisites: Linear Algebra, Calculus 3 and Differential Equations. Part of the course consists of student computational projects which require a programming language, preferably Matlab.

Matlab: I will use Matlab notation in class and do examples in Matlab and the project assignments will include Matlab code, so if you don't know Matlab now, it is highly recommended that you learn it as we progress.

Homework: Two or three problems for homework will be assigned each Friday (except for exam and project weeks) and due the next Friday. It must be turned in at the start of class in hard copy form. **No electronic submissions will be accepted.** It may be turned in the next Monday for 2/3 credit. The two lowest HW scores will be dropped.

Projects and Exams: There will be 3 projects and two exams. The exams will be Wednesday, October 16 and Wednesday, November 20. The projects will be due September 27, November 1, and December 11. **These dates may change, so watch for announcements.**

Grades: Of the final grade: The projects are worth 25% total, the exams are worth 25% each, and the

Grades: The final grade: The projects are worth 25% each, the exams are worth 25% each, and the homework is worth 25%. The grade ranges for the total scores are 93-100% A, 90-92% A-, 88-90% B+, 83-87% B, 80-82% B-, 78-80% C+, 73-77% C, 70-72% C-, 60-70% D, <60% F. Any issues with grading must be raised **within 1 week** of when the work is returned to the class.

Announcements: You are responsible for all announcements made in class.

Honor Code and Collaboration: In this course authorized aid on projects consists of talking to me, other students, and looking at the text for this course. This means that you are not allowed to look on-line, in other books for solutions to the projects, or at the written solutions of other students. You can collaborate with fellow students but must write up and code individually.

Class Attendance: Most students benefit a great deal from attending class regularly. Arriving late and/or leaving early, reading the newspaper, looking at your cell phone, etc. disrupts the class and is rude and unprofessional.

Excused Absences: In certain circumstances a student will be able to make up a missed exam or turn in a project late. These circumstances could include medical situations, family emergencies, travel for University activities (eg. band, debating club, etc), and religious observances. In these cases the student must inform me before or within one week after the missed work and **provide written documentation**.

Additional Information:

Grades: Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Honor Code: "UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The [Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class."

Class Attendance: "Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>."

Accommodations for Students with Disabilities: "Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester."

Online Evaluations: “Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.”

Contact information for the Counseling and Wellness Center: <https://counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.



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