

Sergei Pilyugin
Department of Mathematics

College of Liberal Arts and
Sciences

Sergei S. Pilyugin

Courses

4th per MAA
4103/5105 Intro
Real Anal 2
(Spring 2023)

5th per MAA
4103/5105 Intro
Real Anal 2
(Spring 2023)

MAA 4102/5104
Advanced
Calculus 1 E and
PS (Fall 2022)

MHF 3202 Sets
and Logic (Fall
2022)

MAA 4402/5404
Intro to Complex
Variables
(Summer 2022)

Publications

Research

Schedule

Related Links

5th per MAA 4103/5105 Intro Real Anal 2 (Spring 2023)

5th per MAA 4103/5105 Intro Real Anal 2 (13763/22623)

Instructor: Sergei S.

Pilyugin https://people.clas.ufl.edu/pilyugin/courses/maa4103_s2023_p5/

Announcements:

Any updates, announcements etcetera will be posted on canvas. If something does not work properly, please let me know and we'll figure out how to fix it.

Homeworks: List of HW problems.

Prerequisites: MAA 4102/5104.

Time and Room: MWF 5 (11:45 a.m – 12:35 p.m.), LIT 0223.

Literature: Witold A. J. Kosmala, *A Friendly Introduction to Analysis*, Pearson, Prentice Hall, Upper Saddle River, NJ 07458.

Critical dates: Jan. 9 (classes begin), Apr. 26 (classes end). Quizzes: Q1 – 01/27, Q2 – 02/17, Q3 – 03/10, Q4 – 03/31, Q5 – 04/14. Midterms: M1 – 02/8->10, M2 – 03/22->24, M3 – 04/19->21.

Holidays: Jan. 16 (MLK Day), Mar. 11–18 (Spring Break).

Office Hours: MWF 3 (9:35-10:25 a.m.) in LIT 0458, or by appointment. Please, use e-mail: pilyugin@ufl.edu for communication. For more details, see my schedule.

Description and Objectives of the Course:

This course is the continuation of MAA 4102/5104 covering the topics of Riemann integral, numerical and functional series, and multivariate calculus.

Weekly Schedule:

W1: Differentiation and properties of differentiable functions;
W2: Review of mean value theorems and Taylor's theorem;
W3: Riemann integral, introduction;

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W4-5: Properties of integrable functions;
 W6: Antiderivatives, improper integrals;
 W7: Infinite series, convergence tests;
 W8: Absolute vs. conditional convergence;
 W9: Sequences and series of functions, point wise vs. uniform convergence;
 W10: Power series, Taylor series;
 W11: Vectors in \mathbb{R}^n , dot and cross product;
 W12: Analytic geometry, parametric equations;
 W13: Basic topology in \mathbb{R}^n , limits and continuity;
 W14: Differentiation in \mathbb{R}^n , directional derivatives, chain rule;

Grading System: 3 take home midterms (20% each, posted and collected in canvas); 5 quizzes (10% each, best 4 count, in class) based on homework assignments. There will be no final exam. The resulting score determines the letter grade according to the following table

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D
Score	100	92	87	82	73	68	63	58	53	48
	- 93	88	83	74	69	64	59	54	49	40

Course policies:

UF Covid-19 policies: For policy updates please refer to the University of Florida list of Covid-19 related FAQ at <https://coronavirus.ufl.edu/faqs/>.

Closed-book policy: No use of calculators, or books will be allowed during in-class quizzes.

Grading disputes: Any issues or questions about the grading of exams must be brought to the instructor's attention within one week after the exams are returned to the class.

Excused absences: In certain circumstances, a student will be able to make up a missed quiz. 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 the instructor before or within one week after the missed work and **provide written documentation**. All make ups must be taken during the final exam time slot.

Policy on 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>

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.

UF 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 TA's in this class."

Diversity statement: The University of Florida and the Department of Mathematics are committed to diversity and inclusion of all students. We recognize the diversity of backgrounds and learning needs of our students and strive to create a more inclusive and welcoming environment for everyone. We strongly believe that an inclusive learning environment promotes higher academic achievements.

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 feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://gatorevals.aa.ufl.edu/>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open.

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.