AMSC466/CMSC466, Sec. 0101: Introduction to Numerical Analysis
Department of Mathematics, UMCP **Fall 2025**
Handout: COURSE SYLLABUS AND POLICIES (4 pages) Date: Monday, 09/01/2025

Lectures: Room: Math 0304 (Math Bldg.) **Time:** Tue Thu 9:30am–10:45am
Note: Lectures are **in person**. NO video recording is planned. NO notes will be posted.

CONTACT INFO: Instructor: Professor Dionisios Margetis; e-mail: diom@umd.edu
Office: MATH2106; phone: 5-5455. **Homepage:** https://www.math.umd.edu/∼diom/

Office hours: (i) In person: Tue 10:45am-11:45am (after class). **(ii) On Zoom:** Wednesday 6:00pm-6:45pm. Or, **(iii) by appointment**. *Office hours start on Tue 09/09/25.*

Zoom meetings for instructor's office hour are scheduled through ELMS/Canvas. Regarding in-person meetings, students are encouraged but *not* required to wear KN95 face masks. Students at instructor's office hours should have *specific and well-defined* questions.

Grader: Hengyuan Qi; hqi@umd.edu **Office hour:** TBA
The grader's office hour will be announced through ELMS/Canvas.

ELMS/Canvas: This platform is used for the course. The details of the Zoom meetings (ID and passcodes) for office hours should be found there. Only authenticated UMD users are allowed to join Zoom meetings. **This syllabus and homeworks** will be posted there. To access ELMS, go to https://myelms.umd.edu; log in using UMD username & passwd. I will send important announcements via ELMS. Make sure that your email & announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS.

COURSE SPECS: Prereq's: 1 course with a min grade of C- from (MATH240, MATH461, MATH341); and 1 course with a min grade of C- from (MATH340, MATH241); and 1 course with a min grade of C- from (CMSC106, CMSC131); and minimum grade of C- in MATH410.

Course Web page: To access it, **go to my homepage (above) – click on Teaching and then find course. But:** Homeworks & announcements will be posted on ELMS/Canvas.

Required text: T. Sauer, *Numerical Analysis*, Pearson, 3rd Ed., 2018. In addition, we will use *Lectures notes on Introduction to Numerical Analysis*, by **Prof. Doron Levy**. These lecture notes are made available as pdf to the students on the **Course Web Page** (see above). **Note:** I may also use material from the texts: (1) G. W. Stewart, *Afternotes on Numerical Analysis*, SIAM, 1996. (2) E. Süli, D. Mayers, *An Introduction to Numerical Analysis*, Cambridge, 2003.

Outline: Basic concepts of numerical analysis, including ideas germane to optimization. Topics: Num. schemes for nonlinear eqs. (2-3 weeks). Interpolation (3 weeks). Approximation & least squares (3 weeks). Num. differentiation (2 weeks). Integration (1-2 weeks). If time permits: Conjugate gradient, neural network. Concepts of optimization will permeate topics.

The course description is given on the Mathematics Department web page at: https://www-math.umd.edu/undergraduate/departmental-course-pages/offered-courses/421-amsc-466-introduction-to-numerical-analysis-i.html

MATLAB: A limited number of homework problems might require basic programming skills. This is not a programming class, so it will be assumed that you have some programming knowledge. You may use Matlab for the *computer assignments* (if any). Access to Matlab is available on the University computer systems. You can purchase a student version of the

program for your own computer. There are online resources on Matlab programming. **Links to online resources are available at Course Web page.**

EXAMS: In-person, written Midterm Exam and **the Final Exam** on following dates:

- **Midterm Exam (35%): Tuesday, October 21, 9:30am-10:45am**, in lecture room
- **Final Exam (40%): Tuesday, December 16, 10:30am-12:30pm**, in lecture room.

Note: These are scheduled exams. The Final is planned according to the University schedule of Final Exams. In the (unlikely) event of a prolonged university closing, for example, adjustments to the course schedule, deadlines, and assignments/exams will be made based on the duration of the closing and the specific date(s) missed. Please look at ELMS for related updates.

Word of Caution: Students who unjustifiably miss ANY exam will be called upon to explain. (The policies for make-up exams are provided below. See also remarks under Assignments.)

Note: To help students prepare for the exams, I will give practice problems to do at home (separately from homeworks). Students' answers to these problems won't be collected nor graded, but some problems will be discussed in class.

ASSIGNMENTS/HOMEWORKS (25%): There will be 5-7 sets of required homeworks. These assignments will be posted on ELMS/Canvas, and will be announced in class. Once assigned, **each homework should be turned in by the date specified, in class**. **Late homeworks will not be accepted, in principle**. **Reasoning: My lectures will include review problems from homeworks due on the same day, so that students have the chance to check/discuss their solutions in a timely fashion.** Solutions to homeworks won't be distributed, but selected problems will be solved in class. The requirements for legibility regarding the final exam apply strongly to homeworks. **Illegible solutions will not be graded. The instructor will notify students if their homeworks are illegible.**

Note: Homeworks should be turned in **in person and on time**, during class hours. Requests for exceptions must be justified and will be scrutinized (see "Excused Absences"). Late homeworks may not be accepted, or may be penalized according to time of submission.

Note: Students who do not return homeworks or delay returning them or do poorly in them regularly will be called upon to explain; and might be advised on how to improve their performance or to drop the course. **Any request for extension of deadline for homework is subject to university rules for: integrity of the course and close pursuit of its academic goals; and fairness to all students.** I may refuse to grant an extension, or pose restrictions, if I deem that granting an extension may compromise such rules.

GRADING SCHEME and EXAMS POLICY: 25% from **Homeworks**; **35%** from **Midterm Exam**; and **40%** from the **Final Exam**.

Make-up Exams: Make-up exams are given **ONLY in cases of formally excused absences from the actual exam.** The make-up exam will in principle be an **ORAL exam**, on the same material and of equal time as the missed exam, with questions prepared by the instructor and answers expected to be written by the student on blackboard (or on Zoom, if necessary). The time and place of the Oral Exam must be agreed upon by the instructor and student. **Note:** If the student is registered with the **Accessibility & Disability Service (ADS), the student will take a written (not oral) make-up exam at an ADS location, if the student proves excused absence.**

Excused Absences: If you are absent from a scheduled exam, you MUST provide *valid, acceptable, verifiable* documentation about the reason of your absence, **in a timely fashion**, to be allowed to take a make-up exam. **For any medically necessitated absence, you must provide verifiable documentation signed by a qualified health care provider, to take a make-up final exam.** (Documentation or "notes" from nurses, vaguely defined assistants or staff members etc won't be accepted at first glance and will be scrutinized). The instructor will NOT grant a make-up exam without valid documentation. **Similar rules hold for students asking to be excused from returning homeworks on time or in class.** In case of medical or family emergency, please contact the Instructor as soon as is practical, preferably before the exam. **IF requests for excused absences affect assignments & exams, documentation for justification will be asked. See also "Assignments/Homeworks".**

Exams policy: No calculators and no textbooks are allowed during exams. The students will be allowed to use one page of their own handwritten notes, i.e., one side of letter-size paper. The answers in both exams and homeworks must be adequately supported by mathematical reasoning. Explanations or discussions in exams papers and homeworks must be given in coherent English sentences.

If a student feels that they are entitled to more points on a homework or the midterm exam, they may **resubmit their paper** with a note explaining why the grade should be changed. (Since each questioned problem will be very carefully reexamined, it is possible that the student could end up losing points in the re-evaluation process.) Any request for re-evaluation is overdue if it is made later than 5 days after the return of the (graded) paper. The Instructor and grader reserve the right to **disregard the paper resubmission if they deem this is overdue**.

Note on final letter grades: It has been my policy not to use plus (+) grades, except A+. (Any possible plus grade will be promoted to the minus version of the next, higher letter grade.)

Academic Integrity. All work that you submit must be your own. You are welcomed to discuss homework material with each other in a general way, but you may not consult any one else's written work. Any marked similarity between submissions of different authors might be regarded as evidence of academic dishonesty. You must cite any reference you use and mark any quotation or close paraphrase that you include. Such citation will not lower your grade, but extensive quotation might. **Homeworks and the exam should be done individually.**
NOTE: Course assistance websites, such as CourseHero, or AI-generated content are **NOT** allowed as sources. Material taken or copied or used from these sites can be deemed unauthorized material and a violation of academic integrity. **In particular, the use of AI tools (e.g. ChatGPT) for the solution of any assignment in the course is strictly prohibited. The Instructor and the grader plan to periodically check compliance to this rule. Any case violating this rule will be treated as a case of academic dishonesty.**

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit https://academiccatalog.umd.edu/undergraduate/registration-academic-requirements-regulations/academic-integrity-student-conduct-codes

To further exhibit your commitment to academic integrity, remember to sign the Honor Pledge on all examinations: *"I pledge on my honor that I have not given or received any unauthorized assistance on this examination (assignment)."*

Additional note for AMSC 466/CMSC 466: You will not be asked to sign such a pledge on assignments, but you are expected to strictly adhere to the principles of the pledge there.

DISABILITY (ADS) SUPPORT: Students with documented disabilities should approach me to discuss their accommodations by policies of the Accessibility & Disability Service (ADS) **no later than the 2nd week of classes**. Please remember: Instructors are not required to provide the requested accommodation in cases where this may impact the integrity of the course. **In principle, I ask the students with documented disabilities to make accommodated testing reservations by the 2nd week of classes, for the MIDTERM and FINAL exams (dates above).**

POLICIES & RESOURCES FOR UNDERGRAD. COURSES: In general, it is our shared responsibility to know and abide by the UMD's policies. These include topics such as:

Academic integrity; Conduct; Accessibility and accommodations; Harassment;

Attendance and excused absences; Grades and appeals; Copyright and intellectual property.

Please visit https://www.ugst.umd.edu/courserelatedpolicies.html for the full list of campus-wide policies prepared by the Office of Undergrad. Studies; and ask me if you have questions.

STUDENT RESOURCES & SERVICES. Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course; and I encourage you to visit https://tutoring.umd.edu to learn more about the wide range of campus resources available to you.

You should also know there is a wide range of resources on campus to support you in various ways (see for example UMD's Student Resources and Services website).

For confidential counseling, students are advised to visit or contact the UMD Counseling Center; or one of many other mental health resources on campus.

COVID-19 related policy: For the HEAL line and COVID-19 information, see
https://health.umd.edu/HEAL#masks

On Excused Absences: The University policy on excused absences can be found at:
http://www.president.umd.edu/administration/policies/section-v-student-affairs/v-100g

RELIGIOUS OBSERVANCES. If you plan to be absent from class because of religious observances, please submit to Instructor a list of the dates in the first week of classes.