

MA 591: Scientific Programming with Python Spring 2020

Instructor: Prof. Arvind K. Saibaba

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Lecture: F 1:55-2:45PM, 1216 SAS Hall

Office: SAS Hall 3118.

Office Hours: F 2:45-3:30 PM (in class) or by appointment.

Website: <https://github.ncsu.edu/asaibab/ma591spring2020>.

Topics covered: Python is a high-level, interpreted language that has emerged as a powerful tool for scientific computing. This 1 credit course will cover software tools required for research in scientific computing. While much of the course will focus on programming in Python, additional topics such as version control, shell programming will also be covered.

Prerequisite: Programming experience in a high-level language (e.g., Fortran, C/C++, MATLAB, R).

Course Text: There is no required textbook. Here are two books that will be useful and freely available online. Other resources are given in the website.

1. **A Primer on Scientific Programming with Python** - Hans Petter Langtangen

Web Link: <https://catalog.lib.ncsu.edu/catalog/NCSU3717107>

2. **A whirlwind tour of Python** - Jake VanderPlas

Web Link: <https://jakevdp.github.io/WhirlwindTourOfPython/>

Course Website: All the course material will be posted on the class website. Additionally, course announcements will be sent to your NCSU e-mail account on a regular basis.

Course Grade: The course grade is based equally on two components:

1. Problem sets (60%): Short weekly programming assignments due Fridays.
2. Project (40%): A short project involving Python. Several choices available but can be tailored to the student's interest. Due at the end of the semester.

Grading scale: The final grade will be assigned based on the total score as:

$97 \leq A+ \leq 100$	$87 \leq B+ < 90$	$77 \leq C+ < 80$	$67 \leq D+ < 70$
$93 \leq A < 100$	$83 \leq B < 87$	$73 \leq C < 77$	$63 \leq D < 67$
$90 \leq A- < 93$	$80 \leq B- < 83$	$70 \leq C- < 73$	$60 \leq D- < 63$
$F < 60$			

Late Policy: Late work will not be accepted without prior written approval from the instructor.

Requirements for Credit-Only (S/U) and Auditors: In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to <http://policies.ncsu.edu/regulation/reg-02-20-15>.

Policy on Incomplete Grades: If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at <http://policies.ncsu.edu/regulation/reg-02-50-3>.

Attendance Policy: Attendance is required for the lectures. For complete attendance and excused absence policies, please see <http://policies.ncsu.edu/regulation/reg-02-20-03>.

Electronics: I encourage you to use a laptop to follow along with the course materials, but please be respectful to me and your fellow students.

Academic integrity: Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at <http://policies.ncsu.edu/policy/pol-11-35-01>. Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Students with Disabilities Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, student must register with the Disability Services Office (<https://dro.dasa.ncsu.edu/>), 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation at <http://policies.ncsu.edu/regulation/reg-02-20-01>.

Non-Discrimination Policy NC State provides equal opportunity and affirmative action efforts, and prohibits all forms of unlawful discrimination, harassment, and retaliation ("Prohibited Conduct") that are based upon a person's race, color, religion, sex (including pregnancy), national origin, age (40 or older), disability, gender identity, genetic information, sexual orientation, or veteran status (individually and collectively, "Protected Status"). Additional information as to each Protected Status is included in NCSU REG 04.25.02 (Discrimination, Harassment and Retaliation Complaint Procedure). NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05> or <https://oied.ncsu.edu/divweb/>. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.