ATM 240 - Python programming
Fall 2020    Class # 9739

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Instructor: Prof. Robert Fovell
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Course page: [http://www.atmos.albany.edu/facstaff/rfovell/ATM240/index.html](http://www.atmos.albany.edu/facstaff/rfovell/ATM240/index.html)
Credit: 1 hour
Corequisite: ATM 210 or permission of instructor
Class meetings: Tuesday 3-5 PM in ES 232 between 8/25 and 11/24 (Note: there are no holidays in Fall 2020)

Required text: *A Hands-On Introduction to Using Python in the Atmospheric and Oceanic Sciences*, by Johnny Wei-Bing Lin (available on course page)

Overview: This is a hands-on laboratory course in programming for atmospheric and environmental science applications, utilizing the Python language. The course is targeted to students with no prior programming experience but will also be useful for those with some background in Python and/or programming. The student will learn to write Python programs to access, manipulate, and display observation and simulation data. The course will cover the basics of the Python language, how to access data from local and remote sources, how to store and manipulate data in arrays and lists, how to write functions and loops, and how to visualize data.

Grading (A-E): Labs (70%), two midterm assessments (15% each).

General course outline (subject to modification):

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<th>Date</th>
<th>Class number</th>
<th>Topic</th>
<th>Chapter</th>
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<tr>
<td>8/25</td>
<td>1</td>
<td>Introduction and orientation</td>
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<td>9/1</td>
<td>2</td>
<td>Data and control structures I</td>
<td>Ch. 3</td>
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<td>9/8</td>
<td>3</td>
<td>Data and control structures II</td>
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<td>File input and output</td>
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<td>9/29</td>
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<td>Data analysis</td>
<td>Ch. 6</td>
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<td>Assessment #1</td>
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<td>10/13</td>
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<td>Advanced array manipulation I</td>
<td>Ch. 7</td>
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<tr>
<td>10/20</td>
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<td>Advanced array manipulation II</td>
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<td>10/27</td>
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<td>Visualization I</td>
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<td>11/3</td>
<td>11</td>
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<td>11/24</td>
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Late policy: Late homework and off-time exams are only allowed for University-recognized reasons.

Absences: Class attendance is expected and is especially crucial in a laboratory-type course. Unavoidable, anticipated absences – including absences for religious observances – should be discussed with the instructor in advance, and arrangements should be made to make up missing work. For information on medically necessary absences, refer to http://www.albany.edu/health_center/medicalexcuse.shtml. Information regarding absences due to religious observance may be found here: https://www.nysenate.gov/legislation/laws/EDN/224-A.

Academic integrity: Students are responsible for doing their own work, and also responsible for being familiar, and complying, with the University’s academic integrity standards. Refer to http://www.albany.edu/undergraduate_bulletin/regulations.html for more information.

COVID-19 information: At the University at Albany, supporting the health and safety of all members of our campus community is a top priority. During the COVID-19 pandemic, we are following federal, state, and local public health guidelines, and these guidelines apply to all campus community members across all University spaces. To ensure that each of us has a healthy and safe learning experience within courses that involve in-person contact, all students, faculty members, staff, and visitors are required to adhere to the expectations outlined on the University’s COVID-19 website: https://www.albany.edu/covid-19/planning-fall-2020/health-safety.

Psychological health: If your distress is interfering with your relationships, academic, work, or daily life, confidential support is available to you. Contact Counseling and Psychological Services (CAPS) at 518-442-5800 or consultation@albany.edu to schedule an appointment with a psychologist. Virtual counseling services are available. The CAPS website (www.albany.edu/caps/) also contains self-help resources and other valuable information.