DATA 390

Special Topics I: Python

Course Details

Instructor:

IMPORTANT: Visit the course "More Information" page to review details about textbooks, course materials, media, proctor requirements, and any fees associated with this course.

There is no required textbook to be purchased for this course, as we will be making use of open source and online materials all semester. The following textbooks below are available as free .pdfs and will be referenced during lectures and assignments. You may find the texts on the remainder of the list to be useful additional supplementary resources but access to them will not be required. Data sets and programming scripts for the course will be uploaded to the course webspace.

Open-source resources:

- Problem Solving with Python (https://problemsolvingwithpython.com/)
- Automate the boring stuff (https://automatetheboringstuff.com/)
- Python Data Science Handbook (https://jakevdp.github.io/PythonDataScienceHandbook/)
- Think Python (https://greenteapress.com/thinkpython2/html/)
- A Bite of Python (https://python.swaroopch.com/)
- Dive into Python 3 (https://diveintopython3.net/)

Course Overview

This course provides an introduction to the programming in python with a goal of supporting you in later coursework in the Data Analytics major. A main goal of the course is that you will have plenty of opportunities to work with real data and the Python programming language. Thus, we will integrate standard introductory topics in programming with examples that incorporate a variety of datasets.

Course Materials

This course provides training and examples using the Python programming language. Python is an open source language with a robust ecosystem of packages for data analytics that has become the predominant programming environment in data science[1] No previous programming experience or
knowledge of statistical software tools will be assumed. We will start with the basics of Python 3 and build up familiarity with standard data science libraries including numpy and pandas.

[1] In 2018, Kaggle surveyed 23,859 data scientists and found that 83% of them used python on a regular basis and 54% of them used python most frequently among all languages: link, (https://businessoverbroadway.com/2019/01/13/programming-languages-most-used-and-recommended-by-data-scientists/)

**Student Learning Outcomes (SLOs)**

Students who successfully complete the course will be able to:

- Create and understand simple Python programs
- Create functions and use standard flow-control procedures in Python
- Demonstrate familiarity with Python’s pre-built data types and packages
- Load and summarize data in Python
- Perform basic data cleaning operations in Python
- Merge, transform, and aggregate datasets in Python
- Create simple visualizations in Python
- Solve simple problems using program design in Python

**Course Work**

This course is intended to be self-paced and you are expected to work through all of the provided examples and materials. Each week there will be several suggested readings that go along with the material. Several of the textbook sections conclude with review questions, and while you are not required to submit answers to these, they can serve as an invaluable source of feedback on your progress and learning.

**Collaboration Policy**

For the assignments you are encouraged to work with other students in the class. However, the work that you submit should be your own and in particular should be written in your own words and communicate your own understanding of the solution. If you do collaborate, please list the names of the other students you worked with on your submission. Obtaining solutions from external sources like chegg or coursehero for course problems will be considered a violation of the academic integrity policy with consequences described below.

**Expectations for Student Effort**

Students should expect to spend a minimum of 9 hours per week, engaged in the following types of activities: reading, listening to/viewing media, discussion, or conversation in the LMS or other academic
technology, conducting research, completing assignments and reviewing instructor feedback, studying for and completing assessments, etc

Assignments

**Weekly Assignments:** Each course module includes a set of questions for you to answer, providing some additional practice with the material. These problem sets are due weekly, and should be submitted in the form of a Jupyter notebook, with text responses formatted in markdown cells. The questions will be a mixture of short answer questions designed to help you review the new concepts and programming questions that will require you to modify existing scripts or write your own code.

### Grading

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**Instructor Interaction**

We will use the [Ask the Instructor discussion forum](#) for course-related questions. This is a great place to ask questions from your peers, as well as to get feedback on your ideas. Announcements and other official communications will be posted on Canvas as well as sent to your official WSU email accounts. You should check these messages regularly to stay informed about upcoming due dates and updates to the syllabus.

Please reserve email for more personal inquiries (e.g., grades, etc.). Please include the name of the course in the subject line for any messages concerning the course. I will commit to responding within 48 hours but this does mean that queries sent immediately before a deadline may not receive substantive responses in time to be directly helpful, so please plan ahead.

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**Late Work Policy**

The instructor has the latest information about a late work policy.
Incomplete Grade Policy (Academic Rule 90h)

Incompletes are granted only with permission of the instructor and are subject to the following guidelines:

1. Students must request an incomplete in writing or by e-mail from the instructor before the end of the semester.
2. The request must be signed and dated by the student (or identified by student's e-mail address) and must explain the reasons behind the request for the incomplete.
3. In order to be considered for an incomplete, there are two main conditions:
   1. A student must complete a minimum of 75 percent of the assigned course work.
   2. A student must have a mathematical possibility of scoring a 60 percent or above for the entire course.
4. If extraordinary circumstances (e.g., family emergency, serious illness) are involved and are documented to the instructor's satisfaction, the professor/ instructor retains the discretion to grant an incomplete even if the minimum conditions outlined in item 3 above are not met.

If an incomplete is granted, the standard WSU policy applies (i.e., ALL work must be completed within one full year from the end of the enrollment semester at issue, unless a shorter time is specified by the instructor. Otherwise, an automatic grade of "F," or failing, will be entered on the student’s transcript).

Credit Hour Equivalent

Academic credit is a measure of the total minimum time commitment required of a typical student in a specific course. For the WSU semester system, one semester credit is assigned for a minimum of 45 hours of student effort. See Academic regulation 27.

For a 15-week course, students should expect to spend a minimum of 9 hours per week for each online 3-credit course engaged in activities including, but not limited to: reading, listening to/viewing media, completing assignments and reviewing instructor feedback, contributing to discussions, conducting research, studying for and completing assessments, etc.

For a 7-week course, students should expect to spend a minimum of 19 hours per week for each online 3-credit course engaged in the activities as listed above.

For Graduate Students

The Graduate Student Rights and Responsibilities describes procedures for channeling graduate student complaints, grievances, and concerns to faculty, staff and administrators for appropriate action.
In conjunction with this document, graduate students must adhere to the Graduate School’s Policies and Procedures. While these rights and responsibilities outline the complaint process, students are encouraged to use the Graduate School Deans for guidance and advice on conflicts that may arise at any point during their course of study at the University.

Academic Integrity

Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Violation of WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) may result in penalties up to and including failing the assignment, exam, quiz, course requirement, or the course itself and students will not have the option to withdraw from the course pending an appeal, and will be reported to the Office of Community Standards.

Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating (https://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010 (https://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010)). If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding.

Undergraduate only: If you wish to appeal a faculty member's decision relating to academic integrity, please use the form available at communitystandards.wsu.edu/ (https://communitystandards.wsu.edu/).

Copyright

Any course-related materials, presentations, lectures, etc. are the instructor’s intellectual property and may be protected by copyright. The use of University electronic resources for commercial purposes, including advertising to other students to buy notes, is a violation of WSU’s computer abuses and theft policy (WAC 504-26-218). Selling class notes through commercial note taking services without written advance permission from the faculty, could be viewed as be as copyright infringement and/or academic integrity violation, WAC 504-26-010 (3)(a,b,c,i).
Academic Regulations

Students enrolled in online courses are subject to the same University academic regulations as on-campus students. For the most accurate and up to date information go to Academic Regulations (https://registrar.wsu.edu/academic-regulations/).

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Discrimination and Harassment Policy

Discrimination, including discriminatory harassment, sexual harassment, and sexual misconduct (including stalking, intimate partner violence, and sexual violence) is prohibited at WSU (See Policy Prohibiting Discrimination, Discriminatory Harassment, Sexual Harassment, And Sex And Gender Based Violence (https://policies.wsu.edu/prf/index/manuals/executive-policy-manual-contents/ep15-discrimination-sexual-harassment-and-sexual-misconduct/)). (Executive Policy 15) and WSU Standards of Conduct for Students (Chapter 504-26 WAC (https://app.leg.wa.gov/WAC/default.aspx?cite=504-26)).

If you feel you have experienced or have witnessed discriminatory conduct, you can contact the WSU Office of Civil Rights Compliance & Investigation (CRCI) and/or the WSU Title IX Coordinator (https://crci.wsu.edu/title-ix/) at 509-335-8288 to discuss resources, including confidential resources, and reporting options. (Visit crci.wsu.edu (https://crci.wsu.edu/title-ix/) for more information).

Most WSU employees, including faculty, who have information regarding sexual harassment or sexual misconduct are required to report the information to CRCI or a designated Title IX Coordinator or Liaison. (Visit crci.wsu.edu/reporting-requirements (https://crci.wsu.edu/reporting-requirements-2/) for more info).

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Reasonable Accommodations

Students with Disabilities: Reasonable accommodations are available for students with documented disabilities or chronic medical or psychological conditions. If you have a disability and need accommodations to fully participate in this class, please visit your campus’ Access Center/Services website to follow published procedures to request accommodations. Students may also contact their campus offices to schedule an appointment with a Disability Specialist. All disability related accommodations are to be approved through the Access Center/Services on your campus. It is a university expectation that students visit with instructors (via email, Zoom, or in person) to discuss logistics within two weeks after they have officially requested their accommodations.
For more information contact a Disability Specialist on your home campus:

- WSU Global Campus, Pullman, Everett, Bremerton, Puyallup: 509-335-3417, **Access Center** (https://www.accesscenter.wsu.edu/students/application-processes/), or email access.center@wsu.edu (mailto:access.center@wsu.edu)
- Spokane: 509-358-7816, **Spokane Access Services** (https://spokane.wsu.edu/studentaffairs/access-resources/), or email j.schneider@wsu.edu (mailto:j.schneider@wsu.edu)
- Tri-Cities: **Tri-Cities Access Services** (http://www.tricity.wsu.edu/disability/) or email g.hormel@wsu.edu (mailto:g.hormel@wsu.edu)
- Vancouver: 360-546-9238, **Vancouver Access Center** (https://studentaffairs.vancouver.wsu.edu/student-wellness-center/access-center), or email van.access.center@wsu.edu (mailto:van.access.center@wsu.edu)

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**Accommodations for Religious Observances or Activities**

Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures.

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**Safety and Emergency Notification**

Classroom and campus safety are of paramount importance at Washington State University and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act,” protocol for all types of emergencies and the “**Run, Hide, Fight**” (https://oem.wsu.edu/emergency-procedures/active-shooter/) response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation,
and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).

Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI’s Run, Hide, Fight video and visit the WSU safety portal.

Full details including campus-specific safety information can be found at https://provost.wsu.edu/classroom-safety/  

Lauren's Promise

I will listen and believe you if someone is threatening you.

Lauren McCluskey, a 21-year-old honors student athlete, was murdered on Oct. 22, 2018, by a man she briefly dated on the University of Utah campus. We must all take actions to ensure that this never happens again.

If you are in immediate danger, call 911.

If you are experiencing sexual assault, domestic violence, and stalking, please report it to me and I will connect you to resources or call the National Alternatives to Violence at 877-334-2887 (24-hour crisis hotline).

Any form of sexual harassment or violence will not be excused or tolerated at Washington State University. WSU has instituted procedures to respond to violations of these laws and standards, programs aimed at the prevention of such conduct, and intervention on behalf of the victims.

- **National Resources for Domestic Violence, Sexual Assault, and Stalking:**
  - **National Domestic Violence Hotline:** 1-800-799-SAFE and https://www.th hotline.org/help/ (https://www.th hotline.org/help/)
  - **RAINN (Rape, Abuse & Incest National Network):** 1-800-656-HOPE (4673) and https://www.rainn.org/  (https://www.rainn.org/)
  - **Victim Connect Resource Center:** 1-855-484-2846 and https://victimconnect.org/ (https://victimconnect.org/)
  - **Love is Respect – National Dating Abuse Hotline:** 1 (866) 331-9474  
  - **Anti-Violence Project Hotline:** 212-714-1141 and https://avp.org/get-help/ (https://avp.org/get-help/)

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Online Collaboration
The essence of education is exposure to diverse viewpoints. You will engage with people with vastly different opinions and backgrounds. You are encouraged to disagree with the substance of others’ ideas and opinions but do so with an active sense of respect for one another, and without losing focus on the topic at hand. Personal attacks, inflammatory statements, flaming, trolling, and disruption of the discussion do not have a place in academic discourse. Postings must comply with University policy on use of computing resources, including those regarding harassment and discrimination, as well as conform to the WSU Community Standards.  

Your instructors will promote high-quality academic discussions by removing any posts they view as disruptive of the educational process and alerting students whose posts have been removed that they have violated course expectations. Students who continue to misuse the discussion boards after a warning may be subject to removal of access rights, course failure, and referral to the Office of Community Standards.

Review the netiquette guidelines.  

Technical Support

The WSU Global Campus Current Student site has all the non-content and administrative and contact related information you need to be a successful online learner as well as study tips and skills for success.

Before contacting Technical Support please visit our Equipment Requirements web page to ensure your system meets our computer requirements and test your connection.

Technical support is available 24/7

A member of our technical support team will assist you or direct your request to the appropriate group. The technical support team is NOT able to answer questions about course content or procedures (e.g., assignments, grades).

Please visit our Tech Support web page for up to date hours and contact information.

Library Support
All students enrolled in Washington State University online courses can use the WSU Libraries online databases and receive reference and research assistance from their home campus. Students can also borrow books and other circulating material as well as access full-text journal articles.

General Library Links by Campus

- Pullman Library Support  (http://libraries.wsu.edu/)
- Global Campus Library Support  (http://libguides.libraries.wsu.edu/global)
- Vancouver Library Support  (https://library.vancouver.wsu.edu/)
- Tri-Cities Library Support  (http://tricities.wsu.edu/library)
- Library Support at Spokane – Riverpoint and Nursing at Yakima  (https://spokane.wsu.edu/library/)
- College of Nursing Library Support  (https://nursing.wsu.edu/library-services/)

Online Tutoring

As a WSU student enrolled in an undergraduate course, you have FREE unlimited access to Online Tutoring. This is not a course requirement, but a resource for you to utilize as needed.

With three ways to access a tutor you can choose the one that best fits your needs:

- **Submit a paper:** Writing Lab tutors will respond to papers in ANY academic subject. Just submit your paper, ask specific questions on the submission form, and a tutor will respond within 24-48 hours.
- **Live tutoring:** eChat rooms allow students to meet with tutors in one-on-one tutoring sessions via a fully interactive, virtual online environment.
- **Leave a question:** Students can leave specific questions for a tutor in any of our subjects by taking advantage of our eQuestions option. Our tutors will respond to your question within 24-48 hours.

More details and the list of available tutoring subjects can be found at www.eTutoringOnline.org (https://www.etutoringonline.org/).

As a WSU student enrolled in a graduate level course, you have FREE unlimited access to writing support through eTutoringOnline. This is not a course requirement, but a resource you may utilize as needed.

Writing Lab tutors will respond to papers in ANY academic subject. If you're working on a paper for ANY of your courses our tutors can help you. Just submit your paper, ask specific questions on the submission form, and a tutor will respond within 24-48 hours. For more information visit www.eTutoringOnline.org  (https://www.etutoringonline.org/).
Important Dates and Deadlines

Students are encouraged to refer to the academic calendar (https://registrar.wsu.edu/academic-calendar), often to be aware of critical deadlines throughout the semester.

Please see the Course Schedule for the most comprehensive list of due dates.