**CMPS 240 syllabus (Section 01)**

**RAMAPO COLLEGE OF NEW JERSEY**

**School of Theoretical & Applied Science**

**Course Information**

CMPS 240, Data Analytics in Python,

**Prerequisites and/or Co-requisites*:*** CMPS 130 OR CMPS 148

**Semester & Year Offered:** Fall 2022

**Class Meeting Day(s), Time, location:** Wednesdays, 6:00 pm to 9:35 pm, ASB 426

**Instructor Information**

Sourav Dutta, Assistant Professor of Computer Science

**Online Office Hours:** Monday, Tuesday: 11:10 am to 2:10 pm

**E-mail Address:** [sdutta1@ramapo.edu](mailto:sdutta1@ramapo.edu)

**School Office Location:** ASB 406

**School Office Phone No**.: (201) 684-7761

**Course Description**

This course covers the necessary programming techniques for working in data analytics – with a focus on data structures, the use of external data sources such as web services and databases, statistical and analytical programming, and data presentation.

This course is not a suitable first course in computer programming, students are expected to already have experience in an object-oriented course such as Python (CMPS 130) or C++ (CMPS 148). Concepts such as working with web services and databases will offer students a suitable introduction to prepare them for 300-level course in these topics.

**Course Goals**

This course prepares a student to utilize advanced topics in Python programming in a data analytics setting. Students will gain (1) an understanding of advanced concepts in Python such as object orientation, data structures, web communication, and database access; (2) a broad understanding of numerical methods, algorithmic complexity, statistical programming concepts.

**Measurable Student Learning Outcomes**

(1) Students will be able to write and execute Python programs using all of the following programming concepts:

(a) conditional execution, looping, and iteration

(b) collection data types

(c) functions, recursion, and function objects

(2) Students will be able to apply Python programming skills to data analytics concepts including presentation of statistical data in graphical form.

(3) Students will be able to use Python to access data sources such as the web, databases, and text files to compile and analyze data.

**Course Materials - Required Programs and Textbook**

<https://docs.google.com/presentation/d/1OUWXNaKZeFDKa2HOLzFKbkc64W5KkuCAaWtDbfQv_54/edit#slide=id.g1496a25100e_0_113>

**Last one and half hour of each class is going to be used for in-class Lab Assignment for reinforcing the lectures**

**Textbook**

# Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython

**by Wes McKinney**

[**https://www.amazon.com/Python-Data-Analysis-Wrangling-IPython-ebook/dp/B075X4LT6K**](https://www.amazon.com/Python-Data-Analysis-Wrangling-IPython-ebook/dp/B075X4LT6K)

**Make-Up Exam Policy**

Make-ups will not be given for the final exam and quizzes.

**Grading**

|  |  |
| --- | --- |
| % | **Activity** |
| 20% | Assignments |
| 30% | Quiz |
| 20% | Project |
| 30% | Final Exam |

**Letter Grade Assignment**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Letter** | **Numeric Score** | **Letter** | **Numeric Score** | **Letter** | **Numeric Score** |
| A | 100-94 | A- | 93-90 | - | - |
| B+ | 89-87 | B | 86-84 | B- | 83-80 |
| C+ | 79-77 | C | 76-74 | C- | 73-70 |
| D+ | 69-67 | D | 66-60 | F | < 60 |

**Electronic Forms of Communication**

In accordance with college policy, I will use your Ramapo College email address (@ramapo.edu) to communicate with you about all course-related matters. Also, you will use Canvas to submit all assignments electronically. Check for announcements and updates Weekly. You are responsible for having access to Canvas prior to starting the course. All class notes, presentations and examples presented in class will be available on Canvas.

**Attendance Policy**

Attendance is mandatory for all classes. This includes being ready by the beginning of class and staying until its conclusion. Each week’s material builds upon the previous week. Should you miss a class, you are still responsible for the work covered and any announcements made. If you do miss a class, **contact your classmates first** to find out what you missed and check online for any work that we covered in class. If after contacting your classmate you still have questions, please reach me during my office hours.

A student who plans to miss one or more class sessions for religious observance, whether the religious holiday is recognized by the State of New Jersey or not, must notify me as soon as possible but no later than prior to the date of the religious holiday. You will not be penalized for the absence, and I will allow you to make up any work missed while absent for religious observance. Ultimately, it is your responsibility to complete the work by the dated agreed upon by me and you.

**Students with Disabilities**

Ramapo College is committed to providing reasonable accommodations for all students and to offer optional academic support for those with documented physical, sensory, learning, or psychological disabilities. Students can request academic accommodations by registering with the Office of Specialized Services (OSS). Information and documentation provided to OSS are held in confidence as educational records. Students can utilize these services at any time after registering with OSS. Students who need course adaptation or accommodations due to disability reasons should make an appointment to see an OSS representative during the first week of the semester. Please note: Students must be registered with OSS to receive accommodations. For additional information, The Office of Specialized Services (OSS) is located in the C Wing in room C205. The OSS phone number is 201-684-7514 (x7514) or you can email them at [oss@ramapo.edu](mailto:oss@ramapo.edu).

**College-Wide Policies**

***You need to review College-wide policies that can be found in the following link:*** <https://www.ramapo.edu/fa/arc/college-wide-policies-courses>

**Policy on Academic Integrity**

Students are expected to read and understand Ramapo College’s Academic Integrity Policy, which

can be found online in the College Catalog

(<https://www.ramapo.edu/catalog-2021-2022/academic-policies/academic-integrity/>).

Members of the Ramapo College community are expected to be honest and forthright in their academic endeavors. Students who are suspected of violating this policy will be referred to the Office of the Provost.

Please note that while you may use the Internet to gather information about code or help with syntax, websites that contain complete solutions to programs are absolutely inappropriate and not acceptable resources to use while completing any work in this class.

When completing lab programming assignments, you may review code with your classmates; however, copying source code is strictly forbidden. For quizzes and exams, you are not allowed to communicate with anyone, for any reason.

**Changes to the syllabus**

This syllabus and course outline are subject to change by the instructor during the course of the semester. Changes may be necessary because of students’ specific interest(s), the general class progression and emerging topics of interest. If such changes are implemented, they will be announced in class.

**"A Note on Sexual Misconduct"**

Ramapo College is committed to fostering a safe, productive learning environment. Title IX of the U.S. Education Amendments of 1972 (“Title IX”) is a federal civil rights law that prohibits discrimination on the basis of sex and gender in education programs and activities. Title IX and our college policy prohibit sexual misconduct, including sexual harassment, domestic and dating violence, sexual assault, and stalking.  The College encourages anyone experiencing sexual misconduct to talk to someone about what happened, so they can get the support they need, and our college can respond appropriately.

If you wish to speak confidentially about an incident of sexual misconduct, please contact the Counseling Center at 201-684-7522 (during business hours) or call the Public Safety Department at 201-684-6666 to request an Emergency On Call Counselor (during nights and weekends). If you wish to report sexual misconduct or have questions about policies and procedures regarding sexual misconduct, please contact Kat McGee, the College’s Director of Title IX at 201-684-7220 or kmcgee@ramapo.edu.

As a faculty member, I am required by our college to report incidents of sexual misconduct and thus cannot guarantee confidentiality, but I will respect your privacy and only share the information with those who have a duty to respond. Should I become aware of an incident involving sexual misconduct, I must provide our Title IX Director with relevant details such as the names of those involved in the incident.

To learn more about your rights and resources please visit: [www.ramapo.edu/titleix](http://www.ramapo.edu/titleix)"