

**Business Analytics and Information Technology**  
**Course Number: 33:136:388**  
**Course Title: Foundations of Business Programming**

**All class policies are subject to change at instructor's discretion.**

## **COURSE DESCRIPTION**

Business-oriented programming accounts for the vast majority of all programs written today. This course covers the principles of programming and software development in depth, using Python and an “objectslast” approach. The class emphasizes the application on computer programming based on “success stories” in various fields (including, but not limited to, software industry, engineering, applied math and finance), taking an interdisciplinary approach to teaching programming with Python. The course does not assume any prior experience in computer programming. Upon completion of the course, students will know the fundamentals not only of Python but, more importantly, of core programming and computational thinking concepts. The course also covers basics of modern integrated development environments (IDEs), using PyCharm, exposes students to modern software development practices such as unit testing, and includes regular hands-on programming homework. Advanced topics that may be covered include recursion, fundamental data structures, and UML modeling.

---

## **COURSE MATERIALS**

- **Textbook:**

“Introduction to Programming in Python: An Interdisciplinary Approach”, Robert Sedgewick, Kevin Wayne, and Robert Dondero, Pearson, 2015.

- Course items in Canvas

---

## **LEARNING GOALS AND OBJECTIVES**

The goal of this class is to be able to manage and manipulate data with the Python programming language and apply these skills to solve the business and mathematical problems

---

## **ACADEMIC INTEGRITY**

*I do NOT tolerate cheating.* Students are responsible for understanding the RU Academic Integrity Policy (<http://academicintegrity.rutgers.edu/>).

I will strongly enforce this Policy and pursue *all* violations. On all examinations and assignments, students must sign the RU Honor Pledge, which states, “On my honor, I have neither received nor given any unauthorized assistance on this examination or assignment.” I will screen all written assignments through *SafeAssign* or *Turnitin*, plagiarism detection services that compare the work against a large database of past work. Don’t let cheating destroy your hard-earned opportunity to learn. See [business.rutgers.edu/ai](http://business.rutgers.edu/ai) for more details.

---

## ATTENDANCE AND PREPARATION POLICY

- **I plan to pass around and attendance sheet during most classes and record the results in my private grading spreadsheet.**
- **After missing classes 4 times, you will start to lose 2 points from your cumulative score for each missing class. For example, if you miss 4 classes, there will be no deduction. However, if you miss 5 classes 2 points will be deducted from your cumulative score. If you miss 6 classes, 4 points will be deducted from your cumulative score and so on.**
- Expect me to attend all in-class sessions. I expect the same of you. If I am to be absent, my department chair or I will send you notice via email and Canvas as far in advance as possible.
- For weather emergencies, consult the campus home page. If the campus is open, class will be held.
- Expect me to arrive on time for each class session. I expect the same of you.
- Expect me to prepare properly for each class session. I expect the same of you. Complete all background reading and assignments. You cannot learn if you are not prepared. The minimum expectation is that for each class session, you have prepared by studying for at least twice as many hours as the class hours.
- Expect me to participate fully in each class session. I expect the same of you. Stay focused and involved. You cannot learn if you are not paying attention.

---

## ASSIGNMENTS, EXAMS, OFFICE HOURS

**All policies are subject to change at the instructor’s discretion:**

### Assignments:

- **I am planning for 2 to 4 homework assignments (Number of assignments may change during the semester. Distribution date may deviate from the announced schedule). Assignments are planned to be due one week after distribution.**
- Due to the difficult logistics of tracking large numbers of students, **there is no credit for late assignments. You will receive a zero score for any late assignments.**
- It is key that the homework is well presented, readable, and easy to follow. This will be considered when grading and the extent to which it impacts your grade will be determined at the instructor’s discretion.
- **Pictures (Jpeg files etc.) will not be accepted**, but only Python files(py) Word, PDF, Excel or Access files, depending on the nature of the assignment.

**Exams:**

- There will be 3 exams. **2 midterm exams (Midterm1, Midterm2 and Final exam.**
  - Plan to bring a calculator to every exam. **All exams are planned to be closed book and closed notes. No computers, tablets, or phones of any kind are permitted in exams.**
  - **No Makeup Exams**
  - A make-up test is only scheduled due to illness – **a doctor's statement is required. It is your responsibility to be aware of the correct dates and times of the tests.**
- I do NOT tolerate cheating.* No collaboration with any other individual is permitted on exams. - If I detect any violation of exam policies, I will prosecute them as a violation of the RU academic integrity policy outlined here: (<http://academicintegrity.rutgers.edu/>).
- Students are expected to be familiar with the school's academic integrity policies. Additional information may be found at [business.rutgers.edu/ai](http://business.rutgers.edu/ai)

In addition, during in-class exams, the following rules apply:

- If you have a disability that influences testing procedures, provide me an official letter from the Office of Disability Services at the start of the semester.
- You must show a valid Rutgers photo ID to enter the room and to turn in the exam. - Alternate seating; do not sit next to another student or in your usual seat.

**Office Hours:**

These office hours are subject to change based on their convenience to student schedules and other Factors.

- Regular office hours will be **DETERMINED SOON.**
- Regular office hours will not be held on the days immediately following midterm exams.
- If you cannot make it to scheduled office hours, **you are free to send me e-mail to ask questions or request an office appointment at a different time.** I obviously cannot promise to honor all appointment requests, but I will make my best effort to find a mutually possible time to meet students unable to attend scheduled office hours.

---

**CLASSROOM CONDUCT**

- All cell phones should be turned off
  - Please raise your hand before asking questions
- Refrain from side conversations, sleeping, and other disruptive behaviors.
- 

**EXAM DATES AND POLICIES**

There are 3 exams (Midterm1, Midterm 2 and Final) in this course:

**Midterm 1:** (), **comprehensive**, in-class, paper based, **closed book/notes**, calculator allowed, no laptops or PDAs, all cell phones turned off.

**Midterm 2:** (), **comprehensive**, in-class, paper based, **closed book/notes**, calculator allowed, no laptops or PDAs, all cell phones turned off.

**Final Exam:** (), **comprehensive (entire class)**, in-class, paper based, **closed book/notes**, calculator allowed, no laptops or PDAs, all cell phones turned off.

---

## GRADING POLICY

Course grades are determined as follows:

Homework	20 %
Midterm1	20 %
Midterm2	20 %
Final Exam	40 %
Total	100%

- **Extra credit: None**
- **After missing classes 4 times, you will start to lose 2 points from your cumulative score for each missing class. For example, if you miss 4 classes, there will be no deduction. However, if you miss 5 classes 2 points will be deducted from your cumulative score. If you miss 6 classes, 4 points will be deducted from your cumulative score and so on.**

**Grade distribution** is as follows:

Letter	Range
A	90-100
B+	85 – 89.99
B	80 – 84.99
C+	75 – 79.99
C	70 – 74.99
D	60 – 69.99
F	< 60

**1. Grades will not be rounded up or down** – they are calculated and recorded to the one hundredth place automatically and are used in that form to assign midterm and final grades. There will be no “curve”.

**2. Course grade will be issued when all course requirements are met.**

**-Grade posting:** Grades will be provided within two weeks of an exam, assignment/paper submission, or quiz. Grades on hardcopy items will be provided in person in the class when the specific items are returned. For online/Canvas items, grades will be posted in the Canvas.

**-Return of graded items: Midterms and Final exam will not be returned.** Canvas for this course will be turned off and archived at the end of the final exam.

**-Grade related information:** No grade related information will be provided through email. All grade related information will be provided in-person via appointments. It is expected that you are respectful when you review your grade with me and accept the grade you have earned. Please do not use abusive language in email or in person. Any instances of that will be reported according to university guidelines. -

**Regrading:** Requests to regrade assignments & exams must be done in writing to the instructor within one week of the specific items being returned. Regraded items will be delivered back to students in person during after class hours.

**-Grade grubbing:** Your final grade is not subject to negotiation. If you feel I have made an error, submit your written argument to me within one week of receiving your grade of the specific item. If you want me to review the final grade, submit your written argument to me within one week of receiving your final grade. Clarify the precise error I made and provide all due supporting documentation. If I have made an error, I will gladly correct it. But I will adjust grades only if I have made an error. I cannot and will not adjust grades based on consequences, such as hurt pride, lost scholarships, lost tuition reimbursement, lost job opportunities, or dismissals. Do not ask me to do so. It is dishonest to attempt to influence faculty in an effort to obtain a grade that you did not earn, and it will not work.

-It is key that the homework is well presented, readable, and easy to follow. This will be considered when grading and the extent to which it impacts your grade will be determined at the instructor’s discretion. - Pictures or scanned images will not be accepted, but only Word, PDF, Excel or Access files, depending on the nature of the assignment.

---

## COURSE SCHEDULE

The following schedule is subject to change at instructor’s discretion.

		<b>Homework</b>	<b>Homework</b>
<b>Class #</b>	<b>Topic</b>	<b>Distributed</b>	<b>Due</b>
1	Introduction and Course Policies		

2	PyCharm overview		
3	Data types, variables, and expressions		
4	Built-in types: String, Integer, Float		
5	Control flow and execution trace / If statement		
6	While loops / Loop invariants		
7	For loops / Loop invariants	1	
8	Nesting		
9	Lists		1
10	Monte-Carlo simulation		
11	Monte-Carlo simulation	2	
12	Using and defining functions		
13	<b>Midterm Review</b> \ Using and defining functions		2
14	<b>Midterm1</b>		
15	Function evaluation mechanism		
	<b>NO CLASS</b>		
16	Modular programming (Monte-Carlo revisited)		
17	Modules and libraries		
18	Sequences and lists		
19	Collections and dictionaries	3	
20	Input and output		
21	<b>Midterm Review</b> \ Object Oriented Programming		3
22	<b>Midterm2</b>		
23	Object Oriented Programming		
24	Numpy		
25	Numpy	4	
26	Pandas		
27	Pandas		4

28	Review for final exam		
<b>FINAL EXAM</b>			

---

## SUPPORT SERVICES

If you need accommodation for a *disability*, obtain a Letter of Accommodation from the Office of Disability Services. The Office of Disability Services at Rutgers, The State University of New Jersey, provides student-centered and student-inclusive programming in compliance with the Americans with Disabilities Act of 1990, the Americans with Disabilities Act Amendments of 2008, Section 504 of the Rehabilitation Act of 1973, Section 508 of the Rehabilitation Act of 1998, and the New Jersey Law Against Discrimination. More information can be found at [ods.rutgers.edu](http://ods.rutgers.edu).

[Rutgers University-New Brunswick ODS phone (848)445-6800 or email [dsoffice@echo.rutgers.edu](mailto:dsoffice@echo.rutgers.edu)]

[Rutgers University-Newark ODS phone (973)353-5375 or email [ods@newark.rutgers.edu](mailto:ods@newark.rutgers.edu)]

If you are *pregnant*, the Office of Title IX and ADA Compliance is available to assist with any concerns or potential accommodations related to pregnancy.

[Rutgers University-New Brunswick Title IX Coordinator phone (848)932-8200 or email [jackie.moran@rutgers.edu](mailto:jackie.moran@rutgers.edu)]

[Rutgers University-Newark Office of Title IX and ADA Compliance phone (973)353-1906 or email [TitleIX@newark.rutgers.edu](mailto:TitleIX@newark.rutgers.edu)]

If you seek *religious accommodations*, the Office of the Dean of Students is available to verify absences for religious observance, as needed.

[Rutgers University-New Brunswick Dean of Students phone (848)932-2300 or email [deanofstudents@echo.rutgers.edu](mailto:deanofstudents@echo.rutgers.edu)]

[Rutgers University-Newark Dean of Students phone (973)353-5063 or email [DeanofStudents@newark.rutgers.edu](mailto:DeanofStudents@newark.rutgers.edu)]

If you have experienced any form of *gender or sex-based discrimination or harassment*, including sexual assault, sexual harassment, relationship violence, or stalking, the Office for Violence Prevention and Victim Assistance provides help and support. More information can be found at <http://vpva.rutgers.edu/>.

[Rutgers University-New Brunswick incident report link: <http://studentconduct.rutgers.edu/concern/>. You may contact the Office for Violence Prevention and Victim Assistance at (848)932-1181]

[Rutgers University-Newark incident report link: [https://cm.maxient.com/reportingform.php?RutgersUniv&layout\\_id=7](https://cm.maxient.com/reportingform.php?RutgersUniv&layout_id=7) . You may also contact the Office of Title IX and ADA Compliance at (973)353-1906 or email at [TitleIX@newark.rutgers.edu](mailto:TitleIX@newark.rutgers.edu). If you wish to speak with a staff member who is confidential and does **not** have a reporting responsibility, you may contact the Office for Violence Prevention and Victim Assistance at (973)353-1918 or email [run.vpva@rutgers.edu](mailto:run.vpva@rutgers.edu)]

If students who have experienced a temporary condition or injury that is adversely affecting their ability to fully participate, you should submit a request via <https://temporaryconditions.rutgers.edu> .

If you are a military *veteran* or are on active military duty, you can obtain support through the Office of Veteran and Military Programs and Services. <http://veterans.rutgers.edu/>

If you are in need of *mental health* services, please use our readily available services.

[Rutgers University-Newark Counseling Center: <http://counseling.newark.rutgers.edu/>]

[Rutgers Counseling and Psychological Services–New Brunswick: <http://rhscaps.rutgers.edu/>]

If you are in need of *physical health* services, please use our readily available services.

[Rutgers Health Services – Newark: <http://health.newark.rutgers.edu/>]

[Rutgers Health Services – New Brunswick: <http://health.rutgers.edu/>]

If you are in need of *legal* services, please use our readily available services: <http://rusls.rutgers.edu/>

Students experiencing difficulty in courses due to *English as a second language (ESL)* should contact the Program in American Language Studies for supports.

[Rutgers–Newark: [PALS@newark.rutgers.edu](mailto:PALS@newark.rutgers.edu)]

[Rutgers–New Brunswick: [eslpals@english.rutgers.edu](mailto:eslpals@english.rutgers.edu)]



If you are in need of additional *academic assistance*, please use our readily available services.

[Rutgers University-Newark Learning Center: <http://www.ncas.rutgers.edu/rlc>

[Rutgers University-Newark Writing Center: <http://www.ncas.rutgers.edu/writingcenter>]

[Rutgers University-New Brunswick Learning Center: <https://rlc.rutgers.edu/>]

[Optional items that many faculty include:

- Students must sign, date, and return a statement declaring that they understand the RU Academic Integrity Policy.

- Students must sign, date, and return a statement declaring that they understand this syllabus.]