ISCH 110: Principles of Computing
Fall 2021

Instructor and Course Information

Instructor	Prof. Chris Bondy, Ph.D.
Office Location	GOL-2519 moving to GOL-2647
e-mail	cxbppr@rit.edu
Office Hours	Virtual – via Zoom meetings appointments 10am – 12 noon Wednesdays
Course Time - Lecture-Lab	Section 1: GOL-2650 - Mon 2:30 PM-5:20 PM Section 2: GOL-2620 - Tue 9:30 AM-12:20 PM
Course Location	Lab: Section 1: GOL-2650, Section 2: GOL-2620
Course Resources	MyCourses, Runestone Academy, Google Colab, Slack, Zoom Video

Catalog description

This course is designed to introduce students to the central ideas of computing. Students will develop step-by-step written solutions to basic problems and implement their solutions using a programming language. Students will be required to demonstrate oral and written communication skills through such assignments as short papers, homework, group discussions and debates, and development of a term paper. Computer Science majors may take this course only with department approval, and may not apply these credits toward their degree requirements.

Course Outcomes

At the end of this course, students will be able to:

- Explain common computing acronyms and terms and how they apply to computing hardware, software, and applications.
- Derive a detailed algorithm from a word problem and solve with programming scripts (Python).
- Write a respectable computer program in a high-level language (Python).
- Understand how to evaluate the efficiency of an algorithm and computational limits of conventional computers.
- Demonstrate how hardware concepts are used to construct modern computing systems.

- Describe steps to take to increase the security of computers and information.
- Access social and/or ethical implications of various computing technologies and human decisions as they are used in solutions addressing various problems and challenges.
- Use computers and computer networks toward the advancement of science, engineering, and the greater society in which they operate.

Course Resources

- **Required Textbook: Runestone Academy Digital Textbook (free)**
  CS Principles: Big Ideas in Programming by Mark Guzdial and Barbara Ericson (Available free online)
- **Internet-Connected Device**: You will need an Internet-connected device to participate in class activities during class time. This can be a phone, tablet or laptop. **If this is an issue, please let me know right away.**

Additionally, there may be supplemental reading provided on a week-by-week basis.

Course Structure

1. Weekly Content Activities (Runestone Academy)
2. Weekly Python Labs (Google Colab)
3. Two Projects
4. Two Tests (mid-term, final)

Evaluation

Grading

The relative weight of each component of your grade is shown on the table below.

Component	Weight
Runestone Reading and Content Activities, Participation, class attendance, timely completion of weekly reading & labs	25%
Python Labs	25%
Projects	25%
Tests	25%

The table below lists student's letter grade for a given percentage achieved.

Percentage Earned	Letter Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
60-69	D
0-59	F

Grading Policies

- RIT policy allows you to withdraw from a course with a grade of W on or before the date shown in the current RIT semester calendar. After this date, you will receive a grade based on your work completed in the course.
- Incomplete grades will be given only in truly exceptional circumstances, and only by prior arrangement.
- After any grade is posted on MyCourses, you have ONE week from that date to review and contest the grade.

Course Policies

General Expectations

The best way to be successful in this class is to be an active participant and to keep up with the assignment and the posted deadlines each week.

I expect you to participate actively, constructively, and respectfully and I expect that you take full responsibility for your learning in this class by completing all assignments on time. Should you have

any questions or concerns, please reach out to me immediately. I am available for remote video conference meetings during office hours or by appointment and you can also reach out directly via our Slack channel.

In turn you can expect that I will be respectful of you and will not waste your time this semester. If I assign something, it is important to your learning.

We have a lot to accomplish during this course and I will try to help you learn the material as efficiently and effectively as I can.

Attendance

Depending on the course format (modality), we may or may not have face-to-face classroom instruction. If we are in-person, attendance in class is required. **If** you are healthy **and** are in compliance with Institute rules about vaccines and/or wearing a mask and social distancing, you are welcome to attend class in person.

If the modality of this course is set for remote synchronous, or other hybrid configurations, you are required to be either online or in-person per the course modality. Being remote synchronous is the same requirement as being in-person in the classroom – you are to be captive and present for either remote or in-person class attendance.

Please note: If you are not in compliance with Institute rules at any point during class, you will be asked to leave and will not receive any credit for participation!

Participation

Whether or not you are attending class in person, you will be required to check in via Slack and then check out at the end of class and are required to actively participate during class by asking questions, responding to questions/polls etc.

Participation is mandatory. Missing class not only adversely affects your final grade in the course, but also leaves gaps in your knowledge.

If you are ill, have an emergency, reach out as soon as you can and we can discuss an excused absence.

If you have something that is planned that will interfere with your ability to complete activities, such as for religious holidays, job interviews, athletic contests and so forth, I require you to notify me **one week** in advance so that I can excuse you for that class period.

Deadlines

As learning to manage your time is an essential life skill, **I do not typically allow late work**. There is a great deal to cover in this class and deadlines are important to ensure that we get through everything. It is my prerogative to accept or not accept late work, and to grade or not grade the work with or without penalty – decisions on late work are based on the student, circumstance, frequency, and time.

As such, assigned work is due on the date posted in MyCourses and/or the syllabus/critical dates doc.

If you are ill or have an emergency, reach out as soon as you can and we can discuss an extension.

If you will be on a trip sponsored by official RIT student groups, academic units, or athletic teams, and/or the due date is on a major religious holiday, I will require notification **one week** in advance so that I can adjust deadlines.

Success in this course

Success in this course depends heavily on your personal health and wellbeing. Recognize that stress is an expected part of the college experience, and it often can be compounded by unexpected setbacks or life changes outside the classroom. Moreover, those with marginalized identities may be faced with additional social stressors. Your other instructors and I strongly encourage you to reframe challenges as an unavoidable pathway to success. Reflect on your role in taking care of yourself throughout the term, before the demands of exams and projects reach their peak. Please feel free to reach out to me about any difficulty you may be having that may impact your performance in this course as soon as it occurs and before it becomes unmanageable. In addition to your academic advisor, I strongly encourage you to contact the many other support services on campus that stand ready to assist you.

Tutoring:

For most semesters I will have a TA that will be available to you for tutoring throughout the semester – the TA will provide 2 hours of set times for tutoring for this course. Please connect my TA and coordinate a tutoring session if you feel you are struggling with the material at any point. With multiple full-class sections and a very large set of material I need to cover, it is imperative that you keep up with the course material and comprehend each weekly module so that you can build on the learnings for more advanced lab-work and projects.

Tutoring support for ISCH 110 will also be provided in the **GCCIS Tutoring Center** (GOL-2410, 2nd floor overlooking the atrium). The schedule can be found here: https://www.rit.edu/computing/tutoringcenter.

Medical, Personal or Family Emergencies

If a more long-term emergency situation arises that interferes with your ability to complete work in this class, please arrange to meet remotely with me as soon as possible, but at the very least drop me a Slack or email message to let me know that you are facing a problem.

Academic Integrity

RIT expects students to behave honestly and ethically at all times. Familiarize yourselves with the following policies:

Please visit the Student Academic Integrity Policy to review the university academic honesty policy. Be sure to avoid **cheating**, **duplicate submission**, and **plagiarism** as defined in this policy.

Also, refer to the RIT Honor Code.

Penalties for academic dishonesty will be severe and are likely to lead to failing this course!

Communication Protocols

The MyCourses homepage for the course and our Slack channel will be used as the primary means to disseminate information and must be checked frequently for updates.

Questions/Concerns

I expect that all course-related questions be asked in the class Slack channel so all students benefit from the reply or private Slack channel as needed.

If a question or concern is something of a personal or individual nature, students can send me a private message in Slack. Additionally, students can make an appointment to meet with me in Zoom - just send a message in Slack with some available times or indicate that you want to meet during office hours.

While Slack messages are primary and preferred way to communicate, I specifically use Slack because your message is very important to me and I don't want it to get buried in my email inbox!

Netiquette

It is important in this course that we all work together to develop a collaborative, safe, and friendly environment. To this end, be sure that all Slack, email, text, and other Internet messages related to this class are respectful. Here are some of the general guidelines proposed in [Ten Basic Rules of Netiquette or Internet Etiquette]:

1. If You Wouldn't Say it to Someone's Face, Don't Say it Online
2. If You Wouldn't Show it in Public, Don't Share it Online
3. Respect People's Privacy
4. Don't Repost Without Checking the Facts

In addition, please make sure that you use complete sentences and avoid abbreviations and “text-speak” so everyone can understand you.

Office Hours

My office hours for any given week are listed above. I will not meet in-person this semester as my office is just not large enough to ensure adequate social distancing. However, I will be monitoring Slack for immediate questions and concerns during my office hours. We can also jump into video conference call during this time if you would prefer.

If you cannot attend any of my office hours, you can send me a message with several times/days that you can meet so that I can set something up with you.

Other Policies

Diversity Statement

An atmosphere of mutual respect is critical in any civil society and learning environment. As such, all members of the RIT community are expected to adhere to the Policy Prohibiting Discrimination and Harassment.

In this class, no student will be discriminated against in this class based on race, ethnicity, socioeconomic status, gender, gender identity, sexual orientation, religious and spiritual belief, ability, national origin, veteran status, and/or age.

Any student who does not behave in a respectful manner will need to meet with me virtually or in-person. Continuous or repeated disrespectful behavior will be considered to be creating a hostile environment and will be escalated to student conduct.

Accessibility

Any students finding the need for accommodations in order to be successful in the classroom must make a request with the Disability Services Office (Student Alumni Union, Room 1150). Once you have done so, please contact me in private as soon as possible so that any arrangements that would help in the learning process can be made to ensure the greatest chance for a successful experience.

Course Material Use

Lectures and course materials, including presentations, tests, exams, outlines, and similar materials, are protected by copyright. You may take notes and make copies of course materials for your own educational use. However, you may not, nor may you knowingly allow others to reproduce or distribute lecture notes and course materials publicly without the express written consent of the instructor(s). This includes providing materials to commercial course material suppliers such as CourseHero and other similar services. Students who publicly distribute or display or publicly distribute or display copies or modified copies of an instructor's course materials may be in violation of college policies. If in doubt, please ask me!

Syllabus Revisions

The standards and requirements set forth in this syllabus may be modified at any time. Notice of such changes will be by announcement in MyCourses and any changes to this syllabus posted in MyCourses.

RIT COVID-19 Pandemic Policies and Resources

The RIT community has worked diligently to establish policies and resources that will ensure the safest possible conditions for students, faculty, and staff during the COVID-19 pandemic. The “RIT Ready” program consists of a number of proactive initiatives designed for consistent and safe practices by everyone in the RIT community. Summary of the goals established for the RIT Ready program are below including this link to the RIT Website for further information (https://www.rit.edu/ready/).

- Protect the health and safety of RIT faculty, staff, students, alumni, guests, and our surrounding communities;
- Ensure the continued delivery of RIT’s high-quality educational and research experiences;
- Provide a residential campus experience that is uniquely RIT;
- Recognize that all members of RIT share the responsibility of keeping our community healthy and safe.

Included on the RIT Ready home page are links for the RIT Pledge (agreement to follow establish best practices for the pandemic by all in the RIT community). Also available are other links related to student resources and RIT formal policies during the pandemic.

For this specific course the following policies will be strictly followed during the pandemic:

- All students are required to wear masks at all times during the on-campus lab sessions
- Everyone will observe minimum 6-feet social distances at all times

- Students will be electronically checked for temperature upon arrival to the lab sessions
- All office hours will be conducted virtually through Zoom by a scheduled appointment time
- Students will clean their work area upon arrival and clean it again prior to leaving
- Students are required to report any sign of sickness, fever, etc. to the RIT health and medical team, and restrict all contact until symptoms have proven to be negative for COVID-19.
- Students are encouraged to limit touching doors, railings, etc. and wash hands thoroughly frequently throughout the day

If we all work together to establish a safe and consistent environment at RIT we will have a better possibility of avoiding infection, infecting others and resuming face-to-face interaction on the RIT campus. Please take serious responsibility for your health and safety and that of your fellow students, faculty, and staff in the RIT community.

Course Structure and Cadence

- The Master Source - Content, Information and Syllabus: mycourses
- Digital Text Book (per mycourses course outline): Runestone Academy
- Lab Exercises: Google Shared Drive and Google Colaboratory (Colab)
- Communication: email, SLACK, virtual mtgs - office hours: 10am-12 Wed.
- High-Level Course Structure and Weekly Cadence:

Course Structure (details in Syllabus on my courses and Critical Dates document):

- Weekly lectures online and asynchronous (mycourse/Runestone)
- Weekly Graded labs - one session for each section (Google-Colab)
- 2 Projects – Explore and Create
- Mid-term and Final exam (50 +/- questions each)

Weekly Course Cadence:

- All students read/view course instructions on mycourses and course text book and exercise in Runestone before class each week – prior to Monday am
- Lab assignments are turned in each day of class/lab and graded (by Friday noon)

Detailed Course Schedule

Date	Week	Required Reading and Lab Exercises	Special Assignments ALL due dates are Friday 12 Noon	Topic(s)
Aug-23-24	Week 1	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Access to Runestone and Google Colab	Intro to Principals of Computing
Aug-30-31	Week 2	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Intro to the Explore Project	Global Impact / Python Variables
Sept 6-7 (Labor Day Sept 6th – video lecture)	Week 3	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Explore Project Proposal Due **Friday Sept. 10th 11:59 PM** mycourses	Societal Issues / Python Collections
Sept 13-14	Week 4	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Post you Explore Blog on Spark **Friday Sept. 17th 11:59 PM**	Python Functions
Sept 20-21	Week 5	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Refine your Explore Project and update the blog – begin **Peer Review Sept. 20-24th 11:59 pm**	"Turtles" / Control Flow
			Explore Project Deliverable 3: • After you submit your Blog Post as an Adobe Spark link on EduFlow – conduct three (3) Peer Reviews, anonymously review three of your classmates' blog posts using the rubric on EduFlow, include helpful/respectful comments & suggestions, from 9-20-21 to 9-24-21 (11:59 pm)	
Sept 27-28	Week 6	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Explore Project Final Blog and Peer Evaluation due **October 1st Friday 11:59 pm**	Computer Networking / Python Repeats (Loops) Mid-Term Review
			Explore Project Deliverable 4: • Submit your Final Blog Post as an Adobe Spark link on my courses under Assignments open 9-25-20 (noon)	
Oct 4-5	Week 7	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Mid-Term Exam on mycourses **Section 1: 10/4/21 9:30-12:20 Section 2: 10/5/21 2:30-5:20**	Hardware and Software

Date	Week	Required Reading and Lab Exercises	Special Assignments ALL due dates are Friday 12 Noon	Topic(s)
Oct 11-15 **Fall Break**				
Oct 18-19	Week 8	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Create Project Overview	Software Development Lifecycle
Oct 25-26	Week 9	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Create Project Proposal, Pseudocode & Project Plan Deliverable 1: **Due Friday Oct. 29th 11:59 pm**	Cybersecurity / Python Images / Anatomy of a Program
Nov 1-2	Week 10	Runestone Academy reading and exercises, and Lab assignments as outlined in mycourses	Create Project **Discussion** and Code Development	Privacy / File and Data Handling in Python
Nov 8-9	Week 11	Runestone Academy reading and exercises, and new Lab assignments as outlined in mycourses	Create Project **Discussion** and Code Development	Intro to Data Science Guest Lecture from Dr. Erik Golen and Dr. Xumin Liu
Nov 15-16	Week 12	Runestone Academy reading and exercises, and ~~Lab assignments~~ **Lab Canceled** as outlined in mycourses	Create Project Peer Testing (PeerGrade) and Debugging Deliverable 2 (code drop and peer testing begins): **Due Friday Nov. 19th 11:59 pm**	User Experience / Creating Graphic User Interface in Python
Nov 22-23	Week 13	Runestone Academy reading and exercises, and Lab 14 assignments as outlined in mycourses	Create Project Peer Testing and Debugging week **Nov. 19 - Nov. 26th 11:59 pm**	Final Review
Nov 29-30	Week 14	Runestone Academy reading and exercises, and ~~Lab assignments~~ **Lab Canceled** as outlined in mycourses	Create Project Final Debugging, Code, Written Response **Deliverable 3: Due Friday Dec. 3rd 11:59 pm**	TBD
Thursday December 9 2021	Final Exam Week		Final Exam – Written & Practical Thursday 12/9/2021, 4:15PM - 6:45PM Online Synchronous	