Spring 2023 Syllabus

HCIP-5376 | Spring 2023

Introduction to Programming for Health Informatics

Course Overview & Syllabus

Instructor

Dr. Felesia Stukes

Contact Method: [Canvas Conversations (inbox) message (https://uncc.instructure.com/conversations)](https://uncc.instructure.com/conversations)

Email: fstukes@uncc.edu

Virtual Office: Fridays 1:00pm - 2:00pm by appointment (Zoom or WebEx)

Additional virtual meetings can be scheduled as needed

Course Information

Semester/Year: Spring 2023 | January 11, 2023 – May 11, 2023

Course Number/Section: HCIP-5376 (90)

Course Name: Introduction to Programming for Health Informatics

Meeting Days/Times/Location: This course has a hybrid format and we meet in person every other Wednesday from 5:30 pm - 8:15 pm in the Bioinformatics Building room 301. The alternate weeks, the course will meet online.

#	Required In Person Meeting Dates
1	Wed Jan 11, 2023
2	Wed Jan 25, 2023
3	Wed Feb 08, 2023
4	Wed Feb 22, 2023
5	Wed Mar 08, 2023

6	Wed Mar 22, 2023
7	Wed Apr 5, 2023
8	Wed Apr 19, 2023

Website: https://uncc.instructure.com/ (https://uncc.instructure.com/)

Pre-requisites: Enrollment in PSM, MPH or Graduate Certificate in Health Informatics and Analytics program.

Course Description: An introduction to the fundamentals of computer programming, the course provides students essential programming knowledge and skills to perform commonly encountered computational tasks in the field of health informatics. Prepares students for advanced programming and data science courses. **Credit Hours**: 3

This course contributes to MPH PHAN Concentration Competencies:

- Apply best practices in the design of new and/or critique of existing population health data sources
- Write programming code (SAS, R, SPSS, Stata, **Python,** or similar analytic programming language) to analyze a dataset of any size.

Course Objectives

This course is designed as an introduction to programming and programming language Python for students who have no or very little programming knowledge and experience. It could be considered as a preparation for more advanced programming courses as well as a self-contained course for those who want to use Python for their studies or professional work. The course is structured to benefit most to students who have information science and informatics orientation, however, it will be equally benefit those who are interested to use Python for text and data processing. Like any other skill, your understanding of the course concepts will develop only through extensive reading, writing, and practice.

Upon completing this course you will be able to:

- Read most Python code
- Create executable code
- Identify/characterize/define a problem
- Design a program to solve the problem
- Get user-input data and manipulate it using Python.

- Implement basic Python structures such as if statements, loops, and functions.
- Read and write external data files using Python.
- Implement functions and call built-in Python functions.
- Import and use library function modules from the Python library.

Topics

- Why we program
- Variables, expressions and statements
- Logic and Conditions
- Functions
- Iteration
- String
- File handling
- Lists
- Dictionaries and Tuples
- Regular Expressions
- Using APIs with Python

Important Dates

First Day of class: January 11, 2023

Last day to add, drop a course with no grade* @ 11:59 pm: January 17, 2023

Census Date: January 23, 2023

Spring Recess (No Classes) : February 27, 2023 to March 4, 2023

Last day to withdraw; grade subject to withdrawal policy ⬓ (https://provost.uncc.edu/policies-procedures/academic-policies-and-procedures/withdrawal-and-cancellation-enrollment-policy) : March 20, 2023

Last day of classes: May 2, 2023

Textbook

We will be referencing a freely available digital textbook - Python for Everybody Exploring Data Using Python 3 by Charles R. Severance

The book content is integrated into the Canvas course modules. Unless you prefer a printed textbook no purchase is necessary.

Grade Determination

Cumulative grades will be posted in Canvas. Grades will not be visible to other students. Assignments graded by the instructor or TA will not be posted automatically. Most assignments will be graded within one week after the due date. Exceptions to this policy will be announced to the class. Meeting all course expectations and task deadlines are your responsibilities. You are responsible for all assigned tasks. I expect you to reach out **immediately** to the instructional team via the communications channels used for this course if you run into difficulties with the course so that we can help you be successful. We will not be able to help if you wait until the end of the semester and have earned a lower score than you wanted/needed!

Expectations:

- Work hard
- Submit work early or on time
- Participate actively
- Address issues proactively

Final letter grades are determined as follows:

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

U= < 70%

Course Activities

There will be several major types of course activities that contribute to the overall course grade. All activities will be individual work.

1. Knowledge Checkpoints– Every module will include a quiz that covers the readings, and study material assigned for students to complete. The purpose for these quizzes is to ensure students have acquired the key knowledge points from the knowledge resources assigned to that module.
2. Practice Exercises– Every module will include shorter exercises that will evaluate the level of understanding the student achieved from the materials covered to that point.
3. Milestones - The course will include 3 milestones that results in a final project-like submission. The final assessment for the course will incorporate a final milestone component that utilizes all material covered in the course as well as documenting and packaging

programs developed.

4. <u>Effort</u> – Involvement in the course will be evaluated constantly in all phases of the course. Students who do the bare minimum will not receive any credit for effort. In addition, students may be asked to participate actively in the course's discussion forum and are expected to ask/answer questions and share resources. The effort and quality of your participation and submissions will determine this grade. Note that to a very large extent this is a subjective grade. The course will involve problem solving and programming which are participatory activities and you must participate. Being passive isn't going to get the job done.

Evaluation Breakdown

The expected breakdown of contribution from major course activities to the overall course grade follows here. While it is unlikely to change, please note that it is sometimes necessary to adjust the breakdown, and students would be duly notified in that event.

- 25% - Knowledge Checkpoints
- 30% - Practice Exercises
- 10% - Milestone 1
- 10% - Milestone 2
- 20% - Final Milestone
- 5% - Class Participation

Assignment Due Dates

Computer and Internet connectivity issues are not acceptable excuses for missing an assignment due date. It is the student's responsibility to ensure that personal computers are functioning and that Internet connectivity is available. Students are also responsible for having a backup plan if something should happen to their computer or Internet connectivity during the semester. Students are encouraged to use UNC Charlotte campus resources should this occur. A listing of the assignments and when they are due will also be tracked in Canvas. Please review the late policy.

Late Policy

To protect a student's privacy, doctor and employer notes are not accepted as reasons for missing assignments. Start assignments early to avoid missing deadlines. Personal documentation (i.e., military, death, etc.) should be sent to the **Dean of Students Office** ↪ **(https://dso.uncc.edu/)** (DSO). The DSO office will contact the professor if the documentation has been reviewed and validated and warrants any special circumstances that may cause you to miss several weeks of class.

Please note that your assignments are considered late if they are not completed by the stated due date and time. If your assignment is

late, you will usually have two additional days (48 hours) to complete it for late credit (depending on if anything contrary has been stated in the syllabus or assignment instructions.) Late credit equals a 10% reduction (each day late) to the grade you would have received. For example, if you would have received a grade of 90% for a particular assignment that is late two days, you will receive a grade of 70%.

Make a screenshot of the **confirmation page** that shows the assignment submission (**this is your only proof the assignment was submitted successfully**). Confirmation screenshots must include **your name** (i.e., your name on the Canvas page, not a typed or written name on the screenshot; **assignment name**; **date/time the assignment was submitted**. Altered screenshots will result in a 0 grade and a possible academic integrity violation. Directions for making screenshots will be provided upon request. The professor will ask for the confirmation screenshot if there is a grade discrepancy in Canvas. Grades will not be modified if a screenshot is not provided.

Note: Quizzes must be submitted on or before the posted due date in Canvas and cannot be submitted late.

Incomplete Grade

An incomplete (I) grade will be given only if a substantial amount of the course requirements has been completed and there are mitigating circumstances prohibiting the completion of all requirements prior to the end of this course (review the Exceptions policy). Normally **90%** of the work should be completed. The incomplete should be resolved within **six months** from the end of the term in which the grade was assigned. After six months, the "I" becomes an "F."

Communication

Canvas discussion forums or Canvas conversations (inbox messages) are the main communication tools used in this course. Use the discussion forum for ALL non-private questions relating to the course. This may include general questions about assignments, use of Canvas or the course site, due dates etc.

By posting on the Class Questions Forum, you allow all students to benefit from your question and the answer. Students are encouraged to respond to each other's questions as well. Everyone is initially subscribed to the forum and will receive copies of the posts to your UNC Charlotte email account. If you do not wish to be subscribed, please unsubscribe.

If your concern is personal in nature, please use **Canvas Conversations** (https://uncc.instructure.com/conversations) to contact your instructor. Messages should include your course & section number and a specific subject in the subject line (example: HCIP-5376,

Assignment 1 Question); 01 is the section number, and Assignment 1 Question is an example of a subject. Messages/Forum Questions sent or posted after 4:00 p.m. will usually be answered the following day (with the exception of holidays, meetings or mandatory college travel such as seminars or training). Please note: Communication over the weekends will be answered on Mondays (with the exception of holidays, meetings or mandatory college travel such as seminars or training). Resubmit your message if you do not hear from your instructor within 48 hours (with the exceptions listed above).

Attendance

This course is an hybrid course that meets both in person and asynchronously online. In person class attendance on scheduled dates is required.

In the context of the online portion of the course, students must check the course Canvas site and UNC Charlotte email on a regular, frequent basis. You are responsible to stay informed of any course related content, postings and submit assignments regularly.

Students are expected to attend every class and remain in class for the duration of the session when it is safe to do so in accordance with university guidance regarding COVID-19. Failure to attend class or arriving late may impact your ability to achieve course objectives which could affect your course grade. An absence, excused or unexcused, does not relieve a student of any course requirement. Regular class attendance is a student's obligation, as is a responsibility for all the work of class meetings, including tests and written tasks. Any unexcused absence or excessive tardiness may result in a loss of participation points.

Students are encouraged to work directly with their instructors regarding their absence(s). For absences related to COVID-19, please adhere to the following:

- **Do not come to class if you are sick**. Please protect your health and the health of others by staying home. Contact your healthcare provider if you believe you are ill.
- Face masks are **optional** on UNC Charlotte's campus, but are encouraged when you are in close proximity to others. . This includes classrooms and other academic spaces. Masks are available for pick up in the Popp Martin Student Union, Atkins Library and the Career Center for individuals who wish to wear one, while supplies last.
- **If you are sick**: If you test positive or are evaluated by a healthcare provider for **symptoms of COVID-19** ⤷ **(https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html? CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fabout%2Fsymptoms.html)** , indicate so on your **Niner Health Check** ⤷ **(https://emergency.uncc.edu/covid-19/niner-health-check)** to alert the University. Submit a copy of your

Niner Health Check notification email to your instructors. Upon learning that you have tested positive or have been diagnosed for symptoms of COVID-19, either from your reporting or from Student health Center testing or diagnosis, representatives from Emergency Management and/or the Student Health Center will follow up with you, and your instructors will be notified of the need for accommodations, as necessary.

- Please review **Isolation and Quarantine** ⤷ **(https://ninernationcares.charlotte.edu/health-safety/quarantine-and-isolation)** guidelines.

Academic Code of Conduct and Code of Student Responsibility

Please note: Integrity Violation software is used to detect academic integrity violations of <u>all</u> kinds.

The following are examples of violations:

- Submitting another individual's file
- Copying/pasting **any content** from another individual's file (this also includes copying/pasting images, logos, etc.)
- Tampering with file security encryption

Students violating the Academic Code of Conduct will receive a 0 for the first offense and extra credit will be denied. A settlement form must be reviewed with the student and the student may choose to sign the form. A student choosing not to sign the form will have his/her case reviewed by the UNCC Academic Integrity Board. (**Academic Code of Conduct Policy** ⤷ **(https://legal.uncc.edu/policies/up-407#I)**).

Students engaging in a second offense will automatically be referred to the Academic Integrity Board. **Please note**: First offenders will automatically be referred to the Academic Integrity Board if a prior incident is on file at the University.

The University has provided a detailed explanation of codes of conduct for students (**Code of Conduct: Office of Legal Affairs).** ⤷ **(https://legal.uncc.edu/policies/up-406)**

Special Services

It is the student's responsibility to inform the instructor of any documented disabilities. Instructors will provide the necessary accommodations upon the advice of the Office of Services for Students with Disabilities. Documentation should be given to the instructor during or before the first week of the semester. Students who may think they have a physical or mental impairment should contact the office of Service for Students with Disabilities. Verification is needed in order to register with the Office of Disability Services. Contact Disability Services to determine what verification is needed. Information

about available services may be found at **http://legal.uncc.edu/policies/ps-51.html** ⤳ **(http://legal.uncc.edu/policies/ps-51.html)** . For additional

information, please visit **http://ds.uncc.edu/** ⤳ **(http://ds.uncc.edu/)** .

Diversity Statement

UNC Charlotte strives to create an academic climate in which the dignity of all individuals is respected
and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability,
age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.
All students are required to abide by the UNC Charlotte Sexual Harassment Policy
(http://www.legal.uncc.edu/policies/ps-61.html) and the policy on Responsible Use of University
Computing and Electronic Communication Resources (http://www.legal.uncc.edu/policies/ps66.html). Sexual harassment, as defined
in the UNC Charlotte Sexual Harassment Policy, is prohibited, even when carried out through computers or other electronic
communications systems, including course-based chat rooms or message boards.

Religious Accommodation

It is the obligation of students to provide faculty with reasonable notice of the dates of religious
observances on which they will be absent by submitting a Request for Religious Accommodation
Form to their instructor prior to the census date for enrollment for a given semester
http://legal.uncc.edu/policies/ps-134.html ⤳ **(http://legal.uncc.edu/policies/ps-134.html)**

Guiding Principles in response the COVID-19 Pandemic

 Our work is grounded by our mission as a University and our care for one another.

- The health and wellbeing of our campus community are our top priorities, and we will make decisions grounded in facts and informed by the guidance of public health experts.
- We are redefining the "new norm" for successful campus life, at least temporarily. We do this knowing the actions we take today will secure a stronger, vibrant tomorrow for Niner Nation, a community united in our shared purpose and desire for a meaningful future.
- We are committed to preserving the rich learning environment that is a hallmark of the UNC Charlotte experience, even when it is delivered online.
- Every student and employee is part of the larger "WE" that makes up Niner Nation. What affects one of us affects all of us. We must assign value to the wellbeing of those around us to foster a caring environment and place of belonging for all members of our community.

Visit **https://ninernationcares.charlotte.edu/** ⤷ **(https://ninernationcares.charlotte.edu/)** for up to date information on UNC Charlotte's response to the COVID-19 pandemic.

This syllabus is subject to change at the instructor's discretion. Sufficient prior notice will be given of any changes and will be announced in Canvas or through email.