

**GMS 5905: Section 4B75 - Python Programming**  
**Informatics for Pathology Practice and Research Course Series**  
**Spring 2019 - 1 credit**

## Contact Information

### Course Director

Srikar Chamala, Ph.D., Assistant Professor (Clinical Bioinformatics & Biomedical Informatics)

- Email: [schamala@ufl.edu](mailto:schamala@ufl.edu)
- Phone: 352.627.2272
- Office Location: 4800 SW 35 Drive, Gainesville, FL 32608

### Class & Office Hours

- Held from **January 7, 2019** to **February 11, 2019**
- Class meetings:
  - Tuesday, 12:00 to 1:30 PM: Room – D6-10 (Dental tower, 6th floor)
  - OR
  - Thursday, 5:15 to 6:45 PM: Room – D6-10 (Dental tower, 6th floor)
- Office Hours: *Mondays* and *Wednesdays* from 11:00 AM to 12:00 PM via Zoom Web meeting
  - Join URL: <https://ufl.zoom.us/j/841215391>
  - The above information will also work for office hour appointments scheduled via email
  - Begin your email subject line with "GMS5905" for emails related to this course. Copy TA(s) in the email too.

### TA(s)

Binit Banerjee

- Email: [binitbanerjee@ufl.edu](mailto:binitbanerjee@ufl.edu)

Shailesh Gothi

- Email: [s.gothi@ufl.edu](mailto:s.gothi@ufl.edu)

### Anonymous Feedback/Concerns Reporting

Course members can express their concerns or feedback ANONYMOUSLY about this course to the Course Director (Dr. Srikar Chamala) by filling up online form listed below.

- [Feedback Form Web Link](#)

\*\*\*NOTE: If you have any doubts or questions regarding course material please DO NOT use this form instead email TA(s) or the course director directly.

## Course Information

### GMS 5905 Informatics for Pathology Practice and Research series - Overview

The GMS 5905 Informatics for Pathology Practice and Research (IPPR) series is a set of three 1-credit hands-on courses that will give a good background and working knowledge in three major aspects of informatics. The first course, **Section 4B75**, is Python Programming (1/7/19 – 2/11/19), the second course, **Section 4B83**, is Big Data Analysis & Visualization (2/11/19 – 3/25/19), and the last course in the series, **Section 4B84**, is Unix Operating Systems (3/25/19 – 4/29/19). In Python and Unix, it is assumed students have no knowledge of programming or computing. All of these courses will use data sets and examples from clinical settings and are tailored for practicing clinicians and basic science researchers. The courses are not co-requisites, which allows for individual registration based on discrete needs. After finishing this series, students will be able to build computing tools for data analytics and visualization, as well as solve "big data" research problems, in both clinical and basic sciences.

### IPPR - Section 4B75 - Python Programming

This course will cover essential concepts of software programming using Python programming language, which is very popular among data sciences including bioinformatics and biomedical informatics. Learning programming will help you easily maneuver through heterogeneous and large data sets, which are not easy to handle in graphical user interface (GUI) software like Excel. Another major drawback of GUI software is that users are restricted by functionalities of the software, whereas programming language, like Python, will give user flexibility to write custom software and scripts that fits their needs.

- Week 1: Getting Started with Python
- Week 2: Conditional Statements and Iterations
- Week 3: Modules and File Manipulation
- Week 4: Functions and Data Structures
- Week 5: Wrap Up Project

### Course Goals

Upon successful completion of the course, the student will be able to:

1. Think computationally and understand software programming concepts
2. Create high quality programs, and interpret those written by others, in Python
3. Make informed decisions on programming needs in a biomedical setting

### Prerequisites and Requirements

- No prerequisites. I assume *no* knowledge of programming or computing
- **Need to bring a laptop** to the class for doing assignments
  - Laptop should be set up with [UF Wi-Fi](#) connection and test it prior to the class

- All the class material is provided. Below are the free eBooks that we will be using for the class, please download and keep a local copy.
  - Halterman, Richard L. "Learning to program with python" (2011). [Free Download Link](#)
  - Tutorialspoint. "Python 3" (2016). [Purchase \(\\$9.99\) eBook Link](#)
- Course is primarily being offered for Dept. of Pathology members; however, it could be open to clinicians/researchers from other disciplines with the permission from course director

### Course Offering Format

The class will be offered in flipped classroom format, where students will go through specific course materials online including videos and assigned readings prior to the class (ordered in a to do list format to maximize learning). During the class, students will apply the concepts they learned by practicing informatics exercises with the guidance of the instructor and peers. Attendees of this class includes full-time working professionals with busy schedules. To accommodate these diverse schedules the course is offered in two sections (one and half hours each), where same content would be taught in each of the sections. Attendees will be given the flexibility to attend any one (or even both) of the sections per week based on their needs and availability.

If you have difficulty accessing the course site or need other technical assistance contact the Help Desk at 352-392-HELP (4357) or [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

### Course Assignments - Point Distribution

There will be four types of course assignments due every week. See the below table for the point distribution. All of the assignments are **non-proctored and are open book/internet**. Assignments can be done by discussing with peers, however **direct copy and paste of others work is not allowed**.

- **Quizzes** – Every week there will be one quiz assignment, which will be due on Monday by 11:59 PM (with exception of first quiz) of the corresponding week. Material covered in the quizzes are from the material listed under "Before Class Assignments" section of that week. You will receive a second attempt to improve your score.
- **Before-class Exercises** – Every week there will be one before assignment (with exception of last week), which will be due on Monday by 11:59 PM (with exception of first week) of the corresponding week. Material covered in the before-class exercises are from the material listed under "Before Class Assignments" section of that week. Soutlion Python code must be executable (no failures) for points to be awarded (there will be no partial credit given).
- **In-class Assignment** – An assignment will be due every week on Friday by 11:59 PM. You will start working on this in-class with your peers, but you will likely need more time to complete it and can continue working with others outside of class time.
- **Peer Review** – Each of the submitted in-class assignments will be assigned to two students in the class for peer review which is due every Monday by 11:59 PM. Example, a student submits an in-class assignment by Friday, of the first week, which will be assigned to two students who will have to peer review within three days and submit it by Monday 11:59 PM.

**Note:** *It is very important to complete "Before Class Assignments" list before the class as it will not only impact the score on the quizzes but also your ability to perform in-class exercises.*

<b>Assignment</b>	<b>Grade Calculation Explanation</b>	<b>Points Possible</b>	<b>Due</b>
Quizzes	5 Quizzes@40 points	200	Mondays by 11:59 PM
Before-class Exercises	4 Exercises@50 points	200	Mondays by 11:59 PM
In-class Assignment	5 Exercises@100 points	500	Fridays by 11:59 PM
Peer Reviews (2/week)	10 Peer Reviews@20 points per week	100	Mondays by 11:59 PM
<b>TOTAL</b>		<b>1000</b>	

**Note:** Students will be notified of modified assignment due dates. Please check your Canvas portal for announcements on a regular basis.

## Grades

Grade points is in accordance with UF policies:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

<b>Letter Grade</b>	<b>Points (minimum)</b>
A	900
B+	850
B	800
C+	750
C	700
D+	650
D	600
E	<600

## Policies

### Attendance and late work

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. Late work will only be accepted with prior instructor approval.

### Disabilities

“Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)) by providing appropriate documentation.

Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### **Campus Helping Resources**

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, [www.counseling.ufl.edu/cwc/](http://www.counseling.ufl.edu/cwc/)*
  - Counseling Services
  - Groups and Workshops
  - Outreach and Consultation
  - Self-Help Library
  - Training Programs
  - Community Provider Database
- Student Complaints: [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

### **Honor Policy**

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **Online Course Evaluations**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.