INFO-I 210 Information Infrastructure I-
Spring 2020 Syllabus

Course No: 24716   Credit Hours: 4  
Time: Tuesday, Thursday, 10:00–11:50 am  
Location: LE104  
First Class: Jan 11, 2022

Instructor: Jingwen Yan, Ph.D., Assistant Professor  
Office Hours: by Appointment  
Office: IT 481, IT building  
535 West Michigan St., Indianapolis, IN 46202 [map]  
Phone: (317) 278- 7668 (Office)  
Email: jingyan@iupui.edu

Teaching Assistant: Vella, Divya Sagar Naidu  
Email: dvella@iu.edu

Course Description

This course starts the exploration of fundamental programming constructs, including  
data types, loops, and files, and covers more general problem-solving techniques.  
Students will be taught the Python programming language through hands on exercises  
and assignments. The course will introduce students to a variety of computational tools  
for solving common biomedical problems.

Programming Language & Tools

programming language: Python 3  
editor, IDE and runtime: Spyder

Textbook & Resources

We do not use an official textbook for this course. Instead, we provide quite a bit of  
material and references, primarily from online resources. Python includes  
surprisingly good documentation for learning the language, but if you would like a hard-  
copy textbook I recommend Bioinformatics Programming Using Python or Data Science  
from Scratch: First Principles with Python. Course materials, such as slides, example  
code and dataset will be uploaded to the course website on Canvas. This is where you'll  
find the most current version of the syllabus and information about assignments and  
readings.
Most of your assignments will be submitted via IU Canvas, and you can check your grades for individual assignments there as well.

**Learning Outcomes**

The learning objectives of this course include the following:

1. To familiarize students with some of the basic programming skills.
2. To familiarize students with basic programming tools for solving computational problems in biomedical informatics.

**Core Competencies**

The core competencies of this course include the following:

1. The ability to analyze biomedical related data set with state-of-the-art computational tools and methods.
2. The ability to design software pipelines for automatic mining of big biomedical data and to find information from the data.

**Attendance**

Class attendance is required for classroom-based courses. It entails being present and attentive for the entire class period. Attendance shall be taken in every class. If you do not sign the attendance sheet while in class, you shall be marked absent. Signing the attendance sheet for another student is prohibited. The instructor is required to submit to the Registrar a record of student attendance, and action shall be taken if the record conveys a trend of absenteeism. Illness or a death in the immediate family is usually the only acceptable excuse for absence from class. Absences must be explained to the satisfaction of the instructor, who will decide whether omitted work may be made up. To protect your privacy, doctor's excuses should exclude the nature of the condition and focus instead on how the condition affects on your coursework. If they can not make it because of Covid or Covid-like symptoms, remote attendance via zoom or watching recorded videos later may also be allowed with the approval of instructor. Please keep in mind that this does not excuse you from turning in homework/assignments on time.

**Incomplete:** The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed by the date set by the instructor. If you fail to complete the coursework and turn it in to your instructor in the time allowed, your I will automatically become an F. [https://studentcentral.iupui.edu/grades-progress/incompletes.html](https://studentcentral.iupui.edu/grades-progress/incompletes.html)

**Deliverables**
You are responsible for completing each deliverable (e.g., assignment, quiz) by its deadline and submitting it by the specified method. Deadlines are outlined in the syllabus accessible through Canvas. Should you miss a class, you are still responsible for completing the deliverable and for finding out what was covered in class, including any new or modified deliverable. You are allowed one excused or unexcused late submission in 24 hours after the deadline. For the second late submission, a grade on a deliverable shall be zero.

Assignments

There are two lectures a week on Tuesdays and Thursdays. We will have lectures on Thursdays and hands on sessions on Tuesdays. Homework assignment will be given after each Thursday lecture (from 2nd week) and due on Tuesday of the same week at 12pm. Lab assignments will be given in the lab session and are due by the Thursday of the same week at 12pm.

Grading Information

Here is a breakdown of how your grade will be determined:

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Homework Assignments:</td>
<td>30%</td>
</tr>
<tr>
<td>Labwork assignments:</td>
<td>30%</td>
</tr>
<tr>
<td>Mid-term:</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam:</td>
<td>20%</td>
</tr>
</tbody>
</table>

When your assignments have been graded, those scores, along with your feedback will be reported on IU Canvas. There may always be mistakes in entering, grading, or calculating grades, so always read your feedback and make sure your grades are posted within a week of the due date. If you spot a mistake or a missing grade, you can send an email message to all TAs and instructors, and we'll look into it.

Some rules

- There are no make-up homework/programming assignments; however, we do allow resubmissions - albeit with time-based point deductions (see detailed rules below).
- No make-up exams.

Lectures
• Lectures are on Thursday. It is important for you to attend all lectures. In addition to traditional "lecturing", we may also be asking questions of you and occasionally having you work on a short in-class tasks, assignments or quizzes.

Practice Sessions/Labs

• Instead of having a lecture on Tuesday, there will be practice sessions/labs every week.
• The intent of replacing a lecture with practice sessions is to provide a sort of half "flipped" classroom. In a flipped classroom, you do a reading or watch a taped lecture at home, and do the assignment in the classroom. It can be a very effective method for learning, but only if you actually do the assigned reading/watching.
• Attendance will be factored in to your participation grade. If you've already finished your assignment before the practice session or lab starts, you still need to come to the practice session. If you finish your assignments before the end of the practice session or lab and you would like to leave early, ask the instructor to look over your work and make sure you haven't made any obvious mistakes. If the instructor says you're done, you can leave if you want to, but we recommend sticking around to help your fellow classmates (as long as you don't share any code). If the instructor notices you leaving early without having finished your assignment, you will lose participation points. On the other hand, if the instructor notices you helping your classmates after you've finished, you may earn bonus participation points. Vice versa, if the instructors notice you sharing your code (or writing code for others, or using someone else's code, etc.), you may end up committing academic misconduct. If you're unsure what is allowed and what isn't, please ask your instructors.

TENTATIVE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/19/2021</td>
<td>Intro to class</td>
<td>01/21/2021</td>
<td>introduction to Python</td>
</tr>
<tr>
<td>01/26/2021</td>
<td>Lab</td>
<td>01/28/2021</td>
<td>Variables &amp; Data Types; Basic I/O</td>
</tr>
<tr>
<td>02/02/2021</td>
<td>Lab</td>
<td>02/04/2021</td>
<td>String Manipulation; String methods</td>
</tr>
<tr>
<td>02/09/2021</td>
<td>Lab</td>
<td>02/11/2021</td>
<td>Function: define and testing</td>
</tr>
<tr>
<td>02/16/2021</td>
<td>Lab</td>
<td>02/18/2021</td>
<td>Guest lecture</td>
</tr>
<tr>
<td>02/23/2021</td>
<td>Wellness day, no class</td>
<td>02/25/2021</td>
<td>More on Function: call function</td>
</tr>
<tr>
<td>03/02/2021</td>
<td>Lab</td>
<td>03/04/2021</td>
<td>Boolean, branch and conditions</td>
</tr>
<tr>
<td>03/09/2021</td>
<td>Lab</td>
<td>03/11/2021</td>
<td>Mid-term Review</td>
</tr>
<tr>
<td>03/16/2021</td>
<td>Mid-term</td>
<td>03/18/2021</td>
<td>Loops: for and while</td>
</tr>
<tr>
<td>Date</td>
<td>Lab</td>
<td>Date</td>
<td>List</td>
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<tr>
<td>03/23/2021</td>
<td>10/31/2021</td>
<td>03/30/2021</td>
<td>11/7/2021</td>
</tr>
<tr>
<td>04/06/2021</td>
<td>11/14/2021</td>
<td>04/13/2021</td>
<td>11/21/2021</td>
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<tr>
<td>04/20/2021</td>
<td>04/22/2021</td>
<td>04/27/2021</td>
<td>04/29/2021</td>
</tr>
<tr>
<td>04/22/2021</td>
<td>Final exam review</td>
<td>Final exam</td>
<td></td>
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<tr>
<td></td>
<td>(Written portion)</td>
<td>(practical</td>
<td>portion)</td>
</tr>
</tbody>
</table>

**Grading Scale**

Grading is based on the ranks of students.

<table>
<thead>
<tr>
<th>Minimum %</th>
<th>Grade</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>A+</td>
<td>Professional level work, showing highest level of achievement</td>
</tr>
<tr>
<td>93</td>
<td>A</td>
<td>Extraordinarily high achievement, quality of work; shows command of the subject matter</td>
</tr>
<tr>
<td>90</td>
<td>A-</td>
<td>Excellent and thorough knowledge of the subject matter</td>
</tr>
<tr>
<td>87</td>
<td>B+</td>
<td>Above average understanding of material and quality of work</td>
</tr>
<tr>
<td>83</td>
<td>B</td>
<td>Mastery and fulfillment of all course requirements; good, acceptable work</td>
</tr>
<tr>
<td>80</td>
<td>B-</td>
<td>Satisfactory quality of work</td>
</tr>
<tr>
<td>77</td>
<td>C+</td>
<td>Modestly acceptable performance and quality of work</td>
</tr>
<tr>
<td>73</td>
<td>C</td>
<td>Minimally acceptable performance and quality of work</td>
</tr>
<tr>
<td>70</td>
<td>C-</td>
<td>Unacceptable work (course must be repeated for credit)</td>
</tr>
<tr>
<td>67</td>
<td>D+</td>
<td>Unacceptable work (course must be repeated for credit)</td>
</tr>
<tr>
<td>63</td>
<td>D</td>
<td>Unacceptable work</td>
</tr>
<tr>
<td>60</td>
<td>D-</td>
<td>Unacceptable work</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>Unacceptable work</td>
</tr>
</tbody>
</table>

**MISSION STATEMENT**

The Mission of IUPUI is to provide for its constituents excellence in

- Teaching and Learning;
- Research, Scholarship, and Creative Activity; and
• Civic Engagement.

With each of these core activities characterized by

• Collaboration within and across disciplines and with the community;
• A commitment to ensuring diversity; and
• Pursuit of best practices.

IUPUI’s mission is derived from and aligned with the principal components—Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices—of Indiana University’s Strategic Directions Charter.

**STATEMENT OF VALUES**

IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning. IUPUI values the opportunities afforded by its location in Indiana’s capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.

**CODE OF CONDUCT**

All students should aspire to the highest standards of academic integrity. Using another student’s work on an assignment, cheating on a test, not quoting or citing references correctly, or any other form of dishonesty or plagiarism shall result in a grade of zero on the item and possibly an F in the course. Incidences of academic misconduct shall be referred to the Department Chair and repeated violations shall result in dismissal from the program.

All students are responsible for reading, understanding, and applying the Code of Student Rights, Responsibilities and Conduct and in particular the section on academic misconduct. Refer to [https://studentaffairs.iupui.edu/student-conduct/index.html](https://studentaffairs.iupui.edu/student-conduct/index.html). All students must also successfully complete the Indiana University Department of Education “How to Recognize Plagiarism” Tutorial and Test. [https://www.indiana.edu/~istd](https://www.indiana.edu/~istd). You must document the difference between your writing and that of others. Use quotation marks in addition to a citation, page number, and reference whenever writing someone else’s words (e.g., following the Publication Manual of the American Psychological Association). To detect plagiarism instructors apply a range of methods, including Turnitin.com. [http://www.ulib.iupui.edu/libinfo/turnitin](http://www.ulib.iupui.edu/libinfo/turnitin)

**Academic Misconduct:**

1. **Cheating:** Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.
a. A student must not use external assistance on any “in-class” or “take-home” examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.

b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.

c. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.

d. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student’s individual work.

e. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.

f. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.

g. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom the work is being submitted.

h. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

2. Fabrication: A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.

3. Plagiarism: Plagiarism is defined as presenting someone else’s work, including the work of other students, as one’s own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered “common knowledge” may differ from course to course.

a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.

b. A student must give credit to the originality of others and acknowledge indebtedness whenever:
   1. directly quoting another person’s actual words, whether oral or written;
   2. using another person’s ideas, opinions, or theories;
   3. paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
   4. borrowing facts, statistics, or illustrative material; or
   5. offering materials assembled or collected by others in the form of projects or collections without acknowledgment

4. Interference: A student must not steal, change, destroy, or impede another student’s work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student’s grade or the evaluation of academic performance. Impeding another student’s work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.

5. Violation of Course Rules: A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are
rationally related to the content of the course or to the enhancement of the learning process in the course.

6. **Facilitating Academic Dishonesty:** A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

**OTHER POLICIES**

1. **IUPUI course policies:** A number of campus policies governing IUPUI courses may be found at the following link: [http://registrar.iupui.edu/course_policies.html](http://registrar.iupui.edu/course_policies.html)

2. **Classroom civility:** To maintain an effective and inclusive learning environment, it is important to be an attentive and respectful participant in lectures, discussions, group work, and other classroom exercises. Thus, unnecessary disruptions should be avoided, such as ringing cell phones engagement in private conversations and other unrelated activities. Texting, surfing the Internet, and posting to Facebook or Twitter during class are generally not permitted. IUPUI nurtures and promotes “a campus climate that seeks, values, and cultivates diversity in all of its forms and that provides conditions necessary for all campus community members to feel welcomed, supported, included, and valued” (IUPUI Strategic Initiative 9). IUPUI prohibits “discrimination against anyone for reasons of race, color, religion, national origin, sex, sexual orientation, marital status, age, disability, or [veteran] status” (Office of Equal Opportunity). Profanity or derogatory comments about the instructor, fellow students, invited speakers or other classroom visitors, or any members of the campus community shall not be tolerated. A violation of this rule shall result in a warning and, if the offense continues, possible disciplinary action.

3. **Bringing children to class:** To ensure an effective learning environment, children are not permitted to attend class with their parents, guardians, or childcare providers.

4. **Disabilities Policy:** In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to reasonable accommodations. Please notify the instructor during the first week of class of accommodations needed for the course. Students requiring accommodations because of a disability must register with Adaptive Educational Services (AES) and complete the appropriate AES-issued before receiving accommodations. The AES office is located at UC 100, Taylor Hall (Email: aes@iupui.edu, Tel. 317 274-3241). Visit [http://aes.iupui.edu](http://aes.iupui.edu) for more information.

5. **Administrative Withdrawal:** A basic requirement of this course is that students participate in all class discussions and conscientiously complete all required course activities and/or assignments. If a student is unable to attend, participate in, or complete an assignment on time, it is the student’s responsibility to inform the instructor. If a student misses more than half of the required activities within the first 25% of the course without contacting the instructor, the student may be administratively withdrawn from this course. Administrative withdrawal may have academic, financial, and financial aid implications. Administrative withdrawal will take place after the full refund period, and a student who has been administratively withdrawn from a course is ineligible for a tuition refund. Contact the instructor with questions concerning administrative withdrawal.