GEORGE MASON UNIVERSITY	**Information Sciences and Technology Department** **IT 106: IT Problem Solving (Python)** **Course Syllabus**

Course Description:

IT Problem solving using Python is intended for the students who has no or very little programming knowledge. This course is designed to teach the importance of programming in solving basic problems, write small useful codes to achieve necessary goals irrespective of the student's major. The course accomplishes the goals through hands on experiences in the lecture class as well as through computer laboratory works. Topics to be discussed include but not limited to: variables, conditionals, functions, strings, iterations, storage types and files.

Goals:

At the end of the course we will be learning:

1. Importance of procedural computer programming in solving problems.
2. Hands on experience and understanding of the basic concepts of programming through python.
3. To write small python codes to accomplish goals even if the students are not planning to major in IT or computer related fields.
4. Prepare students so that they can gain the confidence in solving academic projects that require basic programming.

Prerequisites:

C or better is required in the following subjects:

- IT 103 or IT 104 or IT 191
- IT 102 or MATH 112 or MATH 125

Prerequisite courses must be completed prior to, not concurrently with, this course. If you are confused please contact the instructor to avoid any kind of confusion.

Textbook:

1. **Required:** Python Programming for the Absolute Beginner, 3rd Edition Amazon link: https://www.amazon.com/dp/1435455002/ref=cm_sw_r_cp_dp_T2_JM-BzbPCJJ81T
2. **Optional**: *free Python wiki*: available wiki (simpler than a python textbook, but contains more syntax than we will cover)

Course structure:

This will be an interactive and hands on course. So class and lab participation is mandatory because everything will be very interlinked. The class is designed in a way that if you are consistent in attending class lectures and labs and solving assignments you are sure to succeed in the class.

The course is composed of both class lectures and lab lectures. The class will be held twice a week and the lab will be once a week. The class lectures will be conducted by teaching professor and will emphasize on understadning the basic concepts of programming through live demosntration and discussion.

The lab classes will be conducted by one graduate teaching assistant and each lab class will be divided into two small modules: one in-lab practice assignment and one short review lecture. The details will be uploaded in the class website.

Students will be evaluated through exams, quizzes and coding assignments throughout the semester. Students must attempt all the assigned works. These exercises will help students to understand and get a good grasp on basic programming concepts and apply them in to their own course related subjects where applicable.

Quizzes:

Anticipate bi-weekly quizzes. These are based upon the previously learned concepts. You should prepare for quizzes by understanding the reading and materials presented in the respective course sessions and labs. Quizzes are closed book and you are not allowed to help others. If you miss a quiz at the beginning of a class, you can take it at the end of that class. Missing quizzes cannot be taken later unless there is some unavoidable conditions or pre-agreed with the instructor. One lowest score will be dropped.

Assignements and Projects:

Throughout the semester we will use computer laboratory to perform different types of coding assignments and projects. These sort of exercises will reinforce to learn the materials covered in the lecture portion of the course while also developing problem solving skills. Unless otherwise stated by the Instructor, all assignments are expected to be an individual effort. Students are allowed to use their own computer apart from university provided general purpose machines.

In-lab practice assignments: At the beginning of each lab (unless otherwise determined by the instructor) there will be one in-lab programming assignment that needs to be done in the first half of the class with the help of the lab instructor and group discussion. The assignments will be simple small problems that will be based on previous class and lab lectures. This will help you to learn and understand the concepts better. You are encouraged to finish the assignment during the class time. But you will have certain timelimit to turn in the work in blackboard after the class depending on the difficulty level of the assignment. One lowest grade will be dropped.

Bi-weekly assignments: There will be programming assignments that will be posted in blackboard bi-weekly. These assignments will be based on 2 or 3 key concepts learned in previous classes and lectures and practice assignments. The assignments need to be submitted via blackboard by posted deadline and will be given sufficient time to complete depending on the difficulty level. One lowest will be dropped.

Projects: The class will have two projects which will be an accumulation of multiple concepts. If you participate in the practice assignments and bi-weekly assignments then projects will not take long to finish. But its always good to start early. The projects will help students to devise algorithms and convert that thought into coding.

All the assignments and projects MUST be submitted via blackboard by the posted deadlines and considered as individual effort unless otherwise stated by the instructor. If you have difficulty submitting though blackboard contact the lab TA for assistance. It is advised to not wait until last second to turn in the work.

Class participation:

Active lecture and lab class participation is mandatory through discussion, questions and comments. Students are expected to complete any required assignments and lab works. In addition, a discussion forum will be set up on Blackboard for class use. Blackboard will be an avenue where students can ask questions on the course material. It is suggested that you set

aside a time in week to review and participate in the course discussion forum. Go to the topic discussions regularly and read the updates, questions, comments, and feedback that others have posted. Identify any issue, example, or point you can make that might add value to the thread. If you are having any difficulty understanding any topic and concepts this would be a good place to discuss apart from regular office hours. While you can provide coding examples/sample pseducode you MUST NOT post solutions or code in the forum.

Miss policy:

You will have total of four late dates to submit in-lab practice assignments, Bi-weekly assignments and projects. If you miss exam for any conditions include a documented medical excuse, a serious family emergency, or scheduled university approved day off campus event, you must arrange exams with the instructor in advance (if possible) or within 48 hours for any unforseen reason.

Tentative Grading Breakdown:

To complete the course successfully you must attempt all the quizzes, assignments, exams, and participate in both lecture and lab classes. Each component of the course is weighted as follows:

Activity	Percentages
Class participation	5%
In-lab practice assignments	10%
Bi weekly assignments	20%
Bi weekly quizzes	10%
2 projects	15%
Mid term	20%
Final	20%

Final grades will be posted in the patriotweb and you will be able to see your progress in blackboard. The grades will not be emailed to you. A student with any hold will not be able to

access the final grade or register for the course until the Registrar has removed the hold. According to the university policy you will have a one regular semester to adjust or question your grade. After that time has passed a grade cannot be changed by the system. Final averages are assigned a letter grade according to the following conversion system:

Percentage	Grade
>= 98.0	A+
>= 92.0	A
>= 90.0	A-
>= 88.0	B+
>= 82.0	B
>= 80.0	B-
>= 78.0	C+
>= 72.0	C
>= 70.0	C-
>= 60.0	D
<60.0	F

Communication:

- For general discussion students are highly encourage to use the blackboard.
- For other specific issues students are encouraged to make use of the office hours which will be posted in the class website beginning of the semester.
- If for some reason one cannot make the office hours, email communication will be open.

Honor code:

In this course you are expected to create your work on your own. Academic dishonesty include representing someone else's work as own, copy past or current work as part or as whole from friend, relative, book, article, Internet source, colleague, relative, faculty member, or from stranger. Academic dishonesty can be plagiarism, collusion or any sort of cheating. Since most of the assignements and projects you will be working on your own time, it is expected that you

work independently unless otherwise instructed by the instructor. Submission of assignments under your name indicates that you understand and agree to abide by the Honor System and Code of GMU (http://oai.gmu.edu/the-mason-honor-code-2/). Any violations of academic honesty (http://oai.gmu.edu/the-mason-honor-code-2/) will be taken seriously.

Disability Statement:

If a disability or other condition affects your academic performance, document it with the Office of Disability Services. Try to make arrangement early to avoid any kind of problem during the semester and inform the instructor at least one week earlier before the semester starts.