BIOL 498-01 Special Topics: Introductory Python for Bioinformatics
Spring 2018
T @ 4:00 – 5:50 PM in TNR 461

Instructor:	Dr. Daniel L. Graf	Course web site:	Desire2Learn site at http://mypoint.uwsp.edu
Office:	TNR 431		
Phone:	715.346.2285		
email:	dgraf@uwsp.edu (include "BIOL 498" in subject)	Office Hours:	M 2-4 PM, W 10 AM-noon

General Course Description. This course is an introduction to coding for Biology and Biochemistry majors using Python. Topics will include sufficient coverage to develop a complete programming language, as well as some specific python functions suited to the manipulation and analysis of biological data.

Objectives. The objectives of this course are to introduce students to beginning computational methods in biology as a basis for studying bioinformatics.

Learning Outcomes:

You will be able to:
1. Apply the Python computer language to handle textual and numerical data.
2. Demonstrate critical-thinking skills to develop algorithms to solve computing problems.

Required Materials. *Python for Biologists: A Complete Programming Course for Beginners* (2013), by Martin Jones. CreateSpace Independent Publishing Platform, Lexington KY (ISBN 978-1492346135). This book is available for sale at the bookstore.

Grading. Each week, there will be a programming practical quiz worth 5 points, with a 10-point final programming practical exam. In addition, there will be a 20-point special project, due at the end of the semester (more instructions to follow).

Grades will be based on the following percentages of the course total:

		100-94%	A	93-89%	A-
88-87%	B+	86-83%	B	82-79%	B-
78-77%	C+	76-73%	C	72-69%	C-
68-67%	D+	66-63%	D	62-59%	D-
<58%	F				

Attendance. Because this is a workshop-type course, regular attendance is required. Please make arrangements with Dr. Graf as soon as possible to accommodate conflicting sanctioned university events (e.g., athletics) or religious observances. No points will be granted for quizzes associated with unexcused absences.

Academic Integrity. Although students are strongly encouraged to collaborate, willful misrepresentation of the originality of your work will result in a 0 for that assignment.

Classroom Conduct. It is disruptive to come late to class, read extra-curricular media, use cell phones, etc. during class time.

Disabilities. Students with disabilities are welcome and encouraged in this class. Students with disabilities should contact the Disability and Assistive Technology Center during the first two weeks of the semester if they wish to request specific accommodations.

Introductory Python for Bioinformatics

Wk	Date	Topic	Reading
1	23-Jan	Syllabus & Installing Python	Ch. 1
2	30-Jan	Printing & Variables	Ch. 2
3	6-Feb	More with Strings	Ch. 2
4	13-Feb	Reading & Writing Files	Ch. 3
5	20-Feb	Lists & Loops	Ch. 4
6	27-Feb	Functions	Ch. 5
7	6-Mar	Conditional Tests	Ch. 6
8	13-Mar	Programming Problem Solving	—
9	20-Mar	Regular Expressions	Ch. 7
		SPRING BREAK	
10	3-Apr	More Regular Expressions	Ch. 7
11	10-Apr	Dictionaries	Ch. 8
12	17-Apr	Programming Problem Solving	—
13	24-Apr	Files & Programs	Ch. 9
14	1-May	Randomization	—
15	8-May	Synthesis	—
16	15-May	**FINAL EXAM 5-7 PM**	