Semester	AUG 2022
Open to semester	13,21
Course code	**BI6512**
Course title	**Practical Programming**
Credits	/2
Course Coordinator & participating faculty (if any)	Raghav Rajan
Nature of Course	Lectures and Tutorials
Pre-requisites	None
Objectives (goals, type of students for whom useful, outcome etc)	In the current situation, where data collection has become easier and "BIG" data sets are more common, efficient analysis of such data sets is the bottleneck. Knowledge of simple programming skills helps with many aspects of data visualization and analysis. This course will provide graduate students with practical programming skills for data visualization, analysis etc. This will be useful for graduate students from all areas of biology. At the end of the course, students will have a basic knowledge of Python for most simple programming exercises. This base will help them expand to more specific requirements that arise during the course of their graduate work.
Course contents (details of topics /sections with no. of lectures for each)	Tentative course content: 1. Introduction to programming and Python 2. Functions 3. Using text 4. Choices - if then statements 5. Using modules 6. Using methods 7. Storing data 1 8. Repeating actions - loops 9. Reading and writing files 10. Storing data 2 11. Algorithms 12. Searching, sorting 13. Testing, debugging 14. Making GUIs, Object-oriented programming ~ 14 - 20 lectures along with practicals. Student interest and

	feedback before the start of the course will also be used to include specific topics relevant to lab work (like image analysis, etc.).
Evaluation /assessment	End-Sem Examination-0% Mid-Sem Examination-0% Others-Continuous assessment with regular exercises - 100%%
Suggested readings (with full list of authors, publisher, year, edn etc.)	1. Practical programming (3rd edition) An introduction to computer science using Python 3.6 Paul Gries, Jennifer Campbell, Jason Montojo