**COURSE: BIOL-432 Computation and Big Data in Biology**

**TERM: Fall 2025**

**INSTRUCTOR: R.I. Colautti**

SUMMARY:

Biology 432 introduces students to programming for bioinformatics and the analysis of large and complex datasets, with a particular emphasis on ‘omics’ data. As with any language, programming is best learned through immersion and practice. Therefore, this course uses regular assignments and unannounced quizzes to encourage application of techniques acquired in lecture and tutorial. It is important that the TA has a solid understanding of basic programming concepts and its application in biology, as well as significant direct experience with the R programming language. The Biol 432 TA should have enough background knowledge to guide students to appropriate resources for troubleshooting, and to assist with the creation and marking of assignments and quizzes.

DUTIES:

1. To attend regular lectures and tutorial sessions when appropriate and assist students in real-time with technical errors that prevent them from following along (e.g. software installation problems, typos, and other coding errors).
2. To be available to students during pre-set office hours to assist with difficulties arising from the course, including basic coding concepts and technical computing issues (e.g. software problems).
3. The option to lead one or more lecture/tutorial sessions, if the TA desires teaching experience. This is not required but can be requested by the TA.
4. To maintain and update the course onQ site as required, including grading items.

EVALUATION:

The TA will receive a written evaluation provided by the Course Coordinator at the end of the course. This will include results of an informal feedback questionnaire about the TA administered by the Course Coordinator near the end of the course. The questionnaire will evaluate the TA’s perceived availability, helpfulness and teaching effectiveness.

PROFESSIONAL CONDUCT:

All Biology TAs are required to adhere to the University's Code of Conduct as described in Section 12 of the Queen's Graduate Calendar, and Section V of the Guide to Graduate Studies in Biology. As teachers of undergraduates TAs are expected to recognize the seriousness of all forms of Academic Dishonesty, Harassment and Discrimination and to understand the rules governing such cases at Queen's.

PROCEDURES FOR RESOLVING PROBLEMS BETWEEN TAs and INSTRUCTORS

If problems arise from the performance of TA duties, the TA and Instructor or Course Coordinator should attempt to resolve these difficulties in a timely fashion, as described in Section IV of the Guide to Graduate Studies in Biology. TAs should be aware that poor performance may lead to the loss of further contracts and guaranteed minimum support. If problems persist, the Undergraduate Coordinator, in consultation with the Graduate Coordinator, will be responsible for resolving the situation.

<http://www.queensu.ca/provost/faculty/facultyrelations/psac/collectiveagreement.html>