DEPARTMENT OF
GEOGRAPHY AND PLANNING

GPHY 348- Application Design and Customization in GIS

Queen's UNIVERSITY

Contact Time	Two-hour lecture and two-hour practice per week	
Format	Lectures, labs, discussions, presentations and a final project	
Class Assessment	Lab assignments	40%
	Quizs	30%
	Final Project	25%
	Class participation, presentation and discussion	5%

COURSE OVERVIEW
This course introduces students to the basic skills and concepts to custom GIS geoprocessing workflow, and develop their own customization through model builder and Python to match workflow needs and individual preferences. Students will use ArcGIS as an example in this course and learn to customize the interface, run geoprocessing operations, add new functionality using the Python scripts, as well as gain basic knowledge on open source GIS and online GIS.

LEARNING OUTCOMES
Those who successfully complete the course will be able to:
- rearrange the commands on the interface;
- manage geoprocessing tools;
- run a geoprocessing operation using a tool dialog box and a model;
- understand basic structure of the Python language and use them to write Python scripts in ArcGIS;
- add new functionality to ArcGIS using model builder and Python scripts;
- gain basic knowledge on open source GIS and online GIS.

COURSE TOPICS
ArcGIS geoprocessing tools, GIS processing flow, modeling builder, Python scripts basics, scripting workflow, static and dynamic scripts, on-line GIS

Please note: This is an advanced GIS course. Students are expected to have taken at least one GIS course and are familiar with geoprocessing tools in ArcGIS. Students are also expected to have basic knowledge of programming.

COURSE READINGS
E. Westra (2010). Python Geospatial Development.
N. Jennings (2011). A Python Primer for ArcGIS.
L. Tateosian (2016). Python for ArcGIS
P.A. Zandbergen (2020). Python Scripting for ArcGIS Pro. ESRI Press.