

## Course Addendum

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Semester: **Fall 2022**      Subject Code: **BDA 350**      Section: **NAA**  
Subject Title: **Introduction to Algorithms and Analyzing Data**  
Professor: **Elnaz Delpisheh**  
Office:  
E-mail: **elnaz.delpisheh@senecacollege.ca**      Ext.  
Office Hours: **Wednesday 3:00- 4:00 (Or by appointment)**

Approved by: \_\_\_\_\_

Kathy Dumanski, Chair, School of Software Design and Data Science

Please read this addendum to the general course outline carefully. It is your guide to the course requirements and activities.  
Please refer to the course outline for learning outcomes, course description and text and materials.

Please also visit [ict.senecacollege.ca](http://ict.senecacollege.ca) for key information on courses, graduation requirements, transfer credit, and more from the School of Software Design and Data Science.

### Assessment Summary

Tests (Midterm)	20%
Final	30%
Workshops (8 workshops)	30%
Quizzes (8 Quizzes)	10%
Project	10%

### Course Policies

To obtain a credit in this subject, a student must:

- Achieve a grade of 50% or better on the weighted average of the tests and final assessment.
- Grading Policy: <http://www.senecacollege.ca/about/policies/grading-policy.html>

### Academic Policies:

<http://www.senecacollege.ca/about/policies/academics-and-student-services.html>

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**TENTATIVE WEEKLY SCHEDULE**  
**Fall 2022**

<b>Week</b>	<b>Topic or Skill</b>	<b>Reading</b>	<b>Assessment</b>	<b>Weight</b>
<b>Week 1</b> <b>September 6-10</b>	<b>Review of Python (core data types and their functions)</b> <b>Exploring the object-oriented aspects of Python</b>	<b>Chapter 1, 2, 4, 5, 8</b>		
<b>Week 2</b> <b>September 12-17</b>	<b>Searching, Sorting, and Complexity Analysis</b>	<b>Chapter 11</b>	<b>-Workshop 1</b> Analyzing runtime of algorithms  <b>-Quiz 1</b>	<b>3.75%</b>  <b>1.25%</b>
<b>Week 3</b> <b>September 19-24</b>	<b>Collections, Arrays, and Linked Structures</b>	<b>Chapter 13</b>	<b>-Workshop 2</b> - Programming  <b>-Quiz 2</b>	<b>3.75%</b>  <b>1.25%</b>
<b>Week 4</b> <b>September 26<sup>th</sup> – October 1</b>	<b>Linear Collections: Stacks</b>	<b>Chapter 14</b>	<b>-Workshop 3</b> - Programming  <b>-Quiz 3</b>	<b>3.75%</b>  <b>1.25%</b>
<b>Week 5</b> <b>October 3-8</b>	<b>-Linear Collections: Queues</b>	<b>Chapter 15</b>	<b>-Workshop 4</b> - Programming  <b>-Quiz 4</b>	<b>3.75%</b>  <b>1.25%</b>
<b>Week 6</b> <b>October 10-15</b>	<b>Linear Collections: Lists</b>	<b>Chapter 16</b>	<b>-Workshop 5</b> - Programming  <b>-Quiz 5</b>	<b>3.75%</b>  <b>1.25%</b>
<b>Week 7</b> <b>October 17-22</b>	<b>Midterm</b>	<b>Chapters 1, 2, 4, 5, 8, 11, 13, 14, 15, 16</b>	<b>Midterm</b>	<b>20 %</b>
<b>Study Week</b>				
<b>Week 8</b> <b>November 1-5</b>	<b>Recursion</b>	<b>Chapter 17</b>	<b>-Workshop 6</b> - Programming	<b>3.75%</b>

<b>Week 9</b> <b>November 8-12</b>	<b>Hierarchical Collections: Trees</b>	<b>Chapter 18</b>	-Workshop 7 - Programming -Quiz 6	<b>3.75%</b>  <b>1.25%</b>
<b>Week 10</b> <b>November 15-19</b>	<b>Unordered Collections: Sets and Dictionaries</b>	<b>Chapter 19</b>	-Quiz 7  Project starts	<b>1.25%</b>  <b>10%</b>
<b>Week 11</b> <b>November 22-26</b>	<b>Graphs</b>	<b>Chapter 20</b>	-Workshop 8 - Programming -Quiz 8	<b>3.75%</b>  <b>1.25%</b>
<b>Week 12</b> <b>November 29-December 3</b>	<b>More on Searching and Sorting Algorithms</b>	<b>Chapters 9, 10 (Resource 2)</b>		
<b>Week 13</b> <b>December 6-10</b>	<b>Review</b>		<b>Project due</b>	
<b>Week 14</b> <b>December 13-15</b>	<b>Final assessment</b>			<b>30%</b>

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## **Reference:**

Kenneth A. Lambert, Martin Osborne, 2010, *Fundamentals of Python: From First Programs Through Data Structures*, Course Technology, Cengage Learning.

Benjamin Baka. 2017. *Python Data Structures and Algorithms: Improve application performance with graphs, stacks, and queues*. Packt Publishing.

**(Available online at Seneca Library)**

Michael T. Goodrich, Roberto Tamassia, and Michael H. Goldwasser. 2013. *Data Structures and Algorithms in Python* (1st. ed.). Wiley Publishing.