NORTHWESTERN POLYTECHNIC

**SCIENCE DEPARTMENT**

**COURSE OUTLINE – WINTER 2025**

**CS 3010: User Interfaces – 3 (3-0-2) 5 Hours for 15 Weeks**

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.


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| **INSTRUCTOR:** | Ubaid Abbasi | **PHONE:** | 780-539-2016 |
| **OFFICE:** | C-427 | **E-MAIL:** | UAbbasi@nwpolytech.ca |
| **OFFICE HOURS:** | 11:30-12:30 Monday or appointment by email | | |


**CALENDAR DESCRIPTION:**

This course is an introduction to the theory, design and programming of modern user interfaces. Topics will include human factors; interaction design; usability; software development with graphical user interfaces (GUI) for computers, game consoles and mobile devices; input and output devices (including game controllers).

**PREREQUISITE(S)/COREQUISITE:** CS2010

**REQUIRED TEXT/RESOURCE MATERIALS:**

- Interaction Design: Beyond Human-Computer Interaction by Helen Sharp ,Jennifer Preece, Yvonne Rogers. ; ISBN-10. 1119547253 ; ISBN-13. 978-1119547259 ; Edition. 5th ; Publisher. Wiley ; Publication date. May 29 2019.
- Introduction to Java Programming by D. Liang. ISBN 10th Edition 0-13-376131-2.

**Note:** Additional handouts will be provided in class.

**DELIVERY MODE(S):**

This course includes 3-hours of lecture per week and a 2-hour lab per week

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|---|---|---|---|
| **Lectures:** | G112 | Monday | 08:30 – 09:50AM |
| | G111 | Wednesday | 08:30 - 09:50AM |
| **Labs:** | G112 | Friday | 11:30 – 01:20PM |

**LEARNING OUTCOMES:**

At the end of this course, students will gain the ability to:

- Discuss and explain how perception, memory and cognition pertain to designing human computer interfaces.
- Design and implement user interfaces using modern application programming interfaces (APIs) and toolkits.
- Design and implement graphical user interfaces for computers, game consoles and mobile devices.
- Design and implement software that interfaces with input and output devices, including game controllers.

**TRANSFERABILITY:**

**UA, UC, UL, AU, KUC, GMU.**

***Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities**. Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page http://www.transferalberta.ca or, if you do not want to navigate through few links, at http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

**EVALUATIONS:**

Your final grade will be determined in the following manner:

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| **Assignments/Project** | **15%** |
| **Quizzes** | **30%** |
| **Midterm Exam** | **25%** |
| **Final Exam** | **30%** |

**GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)**

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**. Quizzes can be un-announce as well.

| Alpha Grade | 4-point Equivalent | Percentage Guidelines | Alpha Grade | 4-point Equivalent | Percentage Guidelines |
|---|---|---|---|---|---|
| A+ | 4.0 | 95-100 | C+ | 2.3 | 67-69 |
| A | 4.0 | 85-94 | C | 2.0 | 63-66 |
| A- | 3.7 | 80-84 | C- | 1.7 | 60-62 |
| B+ | 3.3 | 77-79 | D+ | 1.3 | 55-59 |
| B | 3.0 | 73-76 | D | 1.0 | 50-54 |
| B- | 2.7 | 70-72 | F | 0.0 | 00-49 |

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

| | Topics |
|---|---|
| Week 1-4 | **Usability, Guidelines and Theories**<br>• Usability and User Experience Goals<br>• User Centred Design and Requirements<br>**Quiz 1 and 2** |
| Week 5-9 | **Scenarios and Task Description**<br>• Ideation<br>• Prototyping<br>• Vision<br>**Midterm** |
| Week 10-13 | **Design**<br>• Design Principles<br>• Layout and Navigation<br>• Evaluation<br>**Quiz 3 and 4** |
| Week 14 | **Usability Testing** |

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|---|---|
| | • Usability<br>• Experiments<br>• Universal Design<br>• Information Visualization |

**STATEMENT ON PLAGIARISM AND CHEATING:**

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at https://www.nwpolytech.ca/about/administration/policies/index.html.

**Note: all Academic and Administrative policies are available on the same page.