Title (Units): **COMP3066 Health and Assistive Technology: Practicum (3,2,1)**

Course Aims: The course aims to provide students with an overall understanding of assistive technologies and how they can assist the elderly and disabled to have more independent living of different aspects. Student will also gain sense of social awareness, responsibility and engagement. After taking this course, students will gain:
1. understanding on medical, social, ethical, and technical challenges surrounding the design, development, and use of technologies that improve the lives of people with disabilities and senior adults
2. knowledge on key concepts and principles behind the latest assistive technologies
3. project experience that exercises team working skills and applies their knowledge to address difficulties experienced by individuals to improve their quality of life

Prerequisite: COMP1015 Computing for Creatives I

Course Intended Learning Outcomes (CILOs):
Upon successful completion of this course, students should be able to:

No.	Course Intended Learning Outcomes (CILOs)
	Knowledge
1	Explain the principles and complexities of assistive technology design and engineering
2	Articulate the challenges and realities faced by elderly and people with disabilities
3	Contribute effectively in a team-based design / engineering project
4	Apply knowledge and skills relevant to the design, development, delivery and evaluation of assistive technology to the end-user

Calendar Description: This course introduces the principles and complexities of assistive technology design and engineering, including investigate the challenges and realities faced by elderly and people with disabilities. Topics includes: use and impact of Assistive Technology, end user perspective, assessment methods and techniques, moral and ethical consideration, and experiencing and evaluating existing assistive technology.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1-3	Students will attend regular lectures by instructor, occasional presentations by guest lecturers with experience in disability and assistive technology, and student project presentations.
1-3	Students will test, evaluate and improve various assistive technologies. Some of the lab sessions may be arranged to implement software or gadget-based assistive technology.
1-4	Students will work on team projects to address real problems faced by people with disabilities and senior adults, and write a comprehensive report on a facility that solves the problems.
1-2	Students will visit assisted living related facilities and/or organizations/companies.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Lab exercises	20%	1 - 4	The lab exercises are designed to measure how well students can understand the concept of assistant technology, and gain experience on assistant technology design and engineering.

2	Assignment(s)	30%	1 - 4	The assignment(s) are designed to measure how well students can consolidate the concept and skills about assistant technology.
3	Project	50%	1 - 4	The grade for this category reflects the quality and the amount of completed work including those of the final report and the system. Student's ground work, and identification and analysis of the problem will be graded in this category. The students' oral presentation of the project will also be assessed.

Assessment Rubrics:

Excellent (A)	• Demonstrate a thorough understanding of the principles and complexities of technology design and engineering. • Well explain the challenges and realities faced by elderly and people with disab • Demonstrate an excellent self-learning capability by bringing new techniques project.
Good (B)	• Demonstrate a good understanding of the principles and complexities of technology design and engineering. • Explain the challenges and realities faced by elderly and people with disabilitie • Demonstrate a good self-learning capability by bringing new techniques into the
Satisfactory (C)	• Demonstrate a basic level of understanding of the principles and complexities of technology design and engineering. • Sometimes explain the challenges and realities faced by elderly and peop disabilities • Rely on the given course materials to complete the project.
Marginal Pass (D)	• Demonstrate a minimal understanding of the principles and complexities of technology design and engineering. • Seldom explain the challenges and realities faced by elderly and people with dis • Rely heavily on the given course material to complete the project.
Fail (F)	• Do not understand the principles and complexities of assistive technology des engineering. • Not able to explain the challenges and realities faced by elderly and peop disabilities • Unable to complete the project.

Course Content and CILOs Mapping:

Content		**CILO No.**
I	Fundamentals of Assistive Technology (AT)	1-4
II	Use of Assistive Technology in Reality	1-4
III	Experiencing and evaluating assistive technology	1-2

References:

- Encarnacao P., Polgar, J.M., and Cook A.M. (5th Eds.). (2020). Assistive Technologies: Principles and Practice. Elsevier Health Sciences.

- Mukhopadhyay, S. C., Suryadevara, N. (2020). Assistive Technology for the Elderly. Elsevier Science & Technology.
- Federici, S., Scherer, M., Federici, S. & Scherer, M. J. (2nd Eds.). (2017). Assistive technology assessment handbook. CRC press.
- Oishi, M. M. K., Mitchell, I. M., & Van der Loos, H. M. (2010). Design and use of assistive technology: social, technical, ethical, and economic challenges. Springer Science & Business Media.

Course Content:

Topic

I. Fundamentals of Assistive Technology (AT)
- Introduction to latest AT
- Design of AT
- Development of AT

II. Use of Assistive Technology in Reality
- Impact of Assistive Technology
- End user perspective: capabilities and limitations of the end users
- Assessment methods and techniques for technology provision
- Moral and ethical considerations concerning the use of assistive technology

III. Experiencing and evaluating assistive technology
- Wheelchair accessibility in campus
- Braille system (Braille displays and printers)
- OCR and Braille translation software
- Screen reading software