Title (Units):	**COMP3075 User Experience Design for Health and Well-being (3,2,1)**
Course Aims:	HCI is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Issues include: command languages, menus, forms, and direct manipulation, graphical user interfaces, computer supported cooperative work (CSCW), information search and visualization, World Wide Web design, input/output devices, and display design. Students will learn the fundamental concepts of human-computer interaction and user-centered design thinking that contributes positively to human health and wellbeing. Students will work on both individual and team projects to design, implement and evaluate computer interfaces for health and well-being applications to motivate users to sustain healthy behaviors, and to support health professionals in the assessment and decision making process.
Prerequisite:	COMP2045 Programming and Problem Solving or Any other ITEC course at Level 2 or above or 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	Describe the key human-computer interaction theories, models, methodologies, and motivational design strategies for user-centered design of health and well-being applications.
2	Explain how the main features of interactive software can be used to gauge the usability of digital environments, tools and interfaces for health and well-being.
3	Conduct user and task analysis in the context of human health and well-being.
4	Implement graphical user interfaces with modern prototyping tools.
5	Critique interactive software using guidelines from human factor theories.

Calendar Description:	Based on user-centered design framework, this course will help students understand the value of UX design for digital health and well-being. Here you will get a general introduction to the role of user experience design in digital health, which will help you identify and argue for how a diverse set of challenges related can be addressed with UX Design. In addition, there will be two practical deep-dive sessions, which will give you both inspirational input and hands-on experience with a number of concrete tools that helps you accomplish specific UX design tasks.

Teaching and Learning Activities (TLAs):

CILOs	Type of TLA
1 - 5	Students will learn the concepts via lectures and in-class exercises.
3 - 5	Students will be assigned labs and assignments to promote their skills.
4 - 5	Students will be assigned projects to promote their knowledge and skills.

Assessment:

No.	Assessment Methods	Weighting	CILOs to be addressed	Description of Assessment Tasks
1	Group Project	35%	3 - 5	Group project is designed to evaluate students' capability to implement and evaluate a prototype in a small team.
2	Lab exercises and	25%	3 - 5	Lab exercises and individual assignments are designed to evaluate students' understanding on what they learn from lectures and labs.

	Individual Assignments			
3	Examination	40%	1 - 3	The final examination is designed to evaluate students' understanding in different parts. The questions will include fundamental, analytic and design types to distinguish different levels of understanding of human computer interaction design.

Assessment Rubrics:

Excellent (A)	• Achieve all the seven CILOs, demonstrating an excellent mastery of both the theo[...] and practical aspects of the knowledge and skills in the selected topics
	• Able to develop correct solutions to problems in human-computer interaction, accompanied by in-depth analysis and insight
	• Demonstrate a thorough understanding and solid knowledge of the principles and [...] techniques of human-computer interaction
	• Able to draw on a variety of techniques and relevant knowledge and appropriate[...] them to the design for health and well-being applications
Good (B)	• Achieve all the seven CILOs, demonstrating a good understanding of the associat[...] concepts and underlying methodologies in the selected topics
	• Able to develop correct solutions to problems in human-computer interaction, accompanied by adequate explanations
	• Demonstrate a competent level of knowledge of the principles and techniques of [...] computer interaction
	• Ability to make use of appropriate techniques and knowledge and apply them to th[...] for health and well-being applications
Satisfactory (C)	• Achieve most of the seven CILOs, demonstrating a basic level of understanding o[...] associated concepts and underlying methodologies in the selected topics
	• Able to provide acceptable solutions to problems in human-computer interaction
	• Demonstrate an adequate level of knowledge of the principles and techniques of h[...] computer interaction
	• Ability to make use of some techniques and knowledge and apply them to the de[...] health and well-being applications.
Marginal Pass (D)	• Achieve most of the seven CILOs, with minimal understanding of the associated [...] concepts and underlying methodologies in the selected topics
	• Able to provide solutions to simple problems in human-computer interaction
	• Demonstrate a basic level of knowledge of the principles and techniques of huma[...] computer interaction
	• Ability to apply some techniques and knowledge to a limited number of typical si[...] and problems for health and well-being.
Fail (F)	• Achieve less than four of the seven CILOs, with little understanding of the associa[...] concepts and underlying methodologies in the selected topics
	• Unable to provide solutions to simple problems in human-computer interaction
	• Knowledge of the principles and techniques of human-computer interaction fallin[...] the basic minimum level
	• Unable to apply techniques or knowledge to familiar situations or problems for he[...] well-being.

Course Content and CILOs Mapping:

	Content	CILO No.
I	Introduction to Human Computer Interaction	1,2
II	User-centered Design Process	1,3,4,5
III	Interface Design Principles	4,5
IV	Human Factors and Cognitive Framework	5
V	Healthcare & Well-being Applications	1

References:

- Interaction Design: Beyond Human-Computer Interaction, 4th Edition by Jenny Preece, Helen Sharp, Yvonne Rogers, John Wiley & Sons (2015)
- Human-Computer Interaction: An Empirical Research Perspective, 1st Edition by Scott MacKenzie, Morgan Kaufmann (2013)
- Handbook of Usability Testing: How to Plan, Design, and Conduct Effective Tests, 2nd Edition by Jeffrey Rubin, Dana Chisnell, Jared Spool, Wiley (2008)
- Designing the User Interface: Strategies for Effective Human-Computer Interaction, 6th Edition by Shneiderman, B., Plaisant, C., Cohen, M. Jacobs, S., Elmqvist, N. and Diakopoulos, Nicholas. Pearson (2016)
- Health design thinking: Creating products and services for better health by Ku, Bon, and Ellen Lupton. MIT Press (2020)
- Design for Wellbeing: An Applied Approach by Petermans, A. and Cain, R. eds. Routledge (2019)
- Cognitive Informatics in Health and Biomedicine: Human Computer Interaction in Healthcare by Patel, V.L., Kannampallil, T.G. and Kaufman. Springer (2015)
- Positive computing: technology for wellbeing and human potential by Calvo, R. A., & Peters, D. MIT Press (2014)

Course Content:

Topic

I.   Introduction to Human Computer Interaction
      A. Interactivity and interaction types
      B. Understanding and conceptualizing interaction
      C. Understanding users and how interfaces affect users
      D. User experience and usability

II.   User-centered Design Process
      A. Process of interaction design
      B. Establishing requirements
      C. Design, prototyping and construction
      D. Evaluation

III.   Interface Design Principles
      A. Design heuristics
      B. Mobile user interface design principles
      C. Voice user interface design principles
      D. Accessibility

IV.   Human Factors and Cognitive Framework
      A. Attention & perception
      B. Reading, speaking, listening, and memory
      C. Mental model
      D. Human processor model

V.   Healthcare & Well-being Applications

A. Design for health mobile applications
B. AR/VR, wearable computing for healthcare
C. Digital tools for health data collection
D. Visualization for health data