UNSW Course Outline

BIOM9910 Health Technology Innovation: Clinical Immersion - 2024

Published on the 12 May 2024

General Course Information

Course Code : BIOM9910
Year : 2024
Term : Term 2
Teaching Period : T2
Is a multi-term course? : No
Faculty : Faculty of Engineering
Academic Unit : Graduate School of Biomedical Engineering
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate, Undergraduate
Units of Credit : 6

Useful Links

[Handbook](#) [Class Timetable](#)

Course Details & Outcomes

Course Description

Experience an exciting learning adventure with our Health Technology Innovation (HTI) course.

Through observations and reflective practice at clinical sites, you will be able to engage in hands-on learning.

Our flipped learning approach to teaching will enable you to put theoretical concepts into practical use. Classroom time will be devoted to deepening your understanding through case studies, problem-solving activities, and discussions with peers to prepare you for clinical visits. At clinical sites, you will gather information to identify real issues and unmet needs of relevant stakeholders.

You will gain physiology, anatomy, and therapeutic knowledge. Additionally, you will learn how to engage in a systematic and structured process to conduct a comprehensive literature review, evaluate existing solutions, and conduct stakeholder and market analysis.

You will have the opportunity to apply theoretical concepts to real-life scenarios and develop a comprehensive project brief that showcases your skills in consolidating and communicating critical clinical problems. Embark on an engaging learning journey and take the first step towards your career in health technology with us!

Course Aims

The overarching goal of this course is to develop reflective and critically independent learners who can fluently articulate interdisciplinary knowledge, ideas, and arguments, as well as collaborate with professionals and non-professionals in different settings confidently.

Learning activities and assessments in this course are intended to develop and enhance students' capabilities in four areas:

1. Academic research skills and ethical data use.
2. Problem analysis and solving process skills.
3. Graduate attributes in practical industry experience and transferrable skills in resolving "real world" problems.
4. Undertake an interdisciplinary project in an authentic "real" clinical environment.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.
CLO2 : Identify, describe and evaluate unmet clinical needs.
CLO3 : Integrate critical reflective practice from in-class and clinical environments.
CLO4 : Communicate persuasively and effectively to a wide range of audiences.

Course Learning Outcomes	Assessment Item
CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.	• Reflective Journal • Active Participation • Project Brief • Multimodal Presentation
CLO2 : Identify, describe and evaluate unmet clinical needs.	• Reflective Journal • Active Participation • Project Brief • Multimodal Presentation
CLO3 : Integrate critical reflective practice from in-class and clinical environments.	• Reflective Journal • Active Participation • Project Brief
CLO4 : Communicate persuasively and effectively to a wide range of audiences.	• Multimodal Presentation • Reflective Journal • Active Participation • Project Brief

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Reflective Journal Assessment Format: Individual	30%	Start Date: 07/06/2024 05:00 PM Due Date: Week 2: 03 June - 09 June, Week 3: 10 June - 16 June, Week 4: 17 June - 23 June, Week 5: 24 June - 30 June, Week 7: 08 July - 14 July
Active Participation Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: Not Applicable
Project Brief Assessment Format: Individual	30%	Start Date: Not Applicable Due Date: 02/08/2024 05:00 PM
Multimodal Presentation Assessment Format: Group	30%	Start Date: Not Applicable Due Date: 29/07/2024 10:00 AM

Assessment Details
Reflective Journal

Assessment Overview

The learning and reflective journal is an essential component of the course. It will allow you to track your progress and document your journey through the course program by drawing upon your readings, in-class discussions, clinical visits and mentor meetings. You will also be guided through your reflective writing, and guidance on these entries will be provided to ensure that you are on the right track. Regular reflection on your experiences is an excellent opportunity to gain a deeper understanding of the concepts and skills learned throughout the course. Being a reflective practitioner is highly desired by all professional industries and is necessary for lifelong, continuous professional development.

Course Learning Outcomes

- CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.
- CLO2 : Identify, describe and evaluate unmet clinical needs.
- CLO3 : Integrate critical reflective practice from in-class and clinical environments.
- CLO4 : Communicate persuasively and effectively to a wide range of audiences.

Assessment Length

250-300 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Active Participation

Assessment Overview

The participation assessment will include practice-sharing activities, in-class discussions, learning activities, as well as meetings with your mentor. These activities will allow you to share your experiences and learn from others, which will help you develop your communication and collaboration skills. Through these activities, you will have the opportunity to receive valuable insights and feedback from your peers and mentors, reflect on your own learning and performance, identify your strengths and areas for further improvement, and develop the skills needed to be successful in your future studies and career.

Course Learning Outcomes

- CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.
- CLO2 : Identify, describe and evaluate unmet clinical needs.
- CLO3 : Integrate critical reflective practice from in-class and clinical environments.
- CLO4 : Communicate persuasively and effectively to a wide range of audiences.

Assignment submission Turnitin type

Not Applicable

Project Brief

Assessment Overview

The Project Brief is a formal written report that serves as a critical component of this course. It should provide a detailed analysis of the problem, with a clear and concise identification of the unmet need, and contain a detailed breakdown of the research conducted, including a literature review, existing solution(s), market and stakeholder analysis, and any observations made during the clinical visits, as well as a judgment of the value in addressing the unmet need. The report should be written in a manner that is easy to read and comprehend, such that it allows for seamless handover to anyone with the requisite knowledge. The document should be presented in a clear, organized format, with appropriate headings, tables, and figures to aid in understanding.

Course Learning Outcomes

- CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.
- CLO2 : Identify, describe and evaluate unmet clinical needs.
- CLO3 : Integrate critical reflective practice from in-class and clinical environments.
- CLO4 : Communicate persuasively and effectively to a wide range of audiences.

Assessment Length

3000 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Multimodal Presentation

Assessment Overview

This assessment is a pitch to potential investors, followed by a Q&A session. You have the option

to use an infographic or slides. The primary objective of this pitch is to convince the audience that the problem is real and worth solving. You should cover the scope and nature of your problem and include observations from your clinical visits. You should also synthesise your research, including a literature review, market and stakeholder analysis, and existing solutions.

Course Learning Outcomes

- CLO1 : Synthesise qualitative and quantitative information from general, academic, clinical and market sources.
- CLO2 : Identify, describe and evaluate unmet clinical needs.
- CLO4 : Communicate persuasively and effectively to a wide range of audiences.

Assessment Length

N/A

Assignment submission Turnitin type

Not Applicable

General Assessment Information

BIOM 9910 has been co-designed through interdisciplinary collaboration with multiple stakeholders with expertise in health technology innovation. It has a flipped classroom approach, meaning that traditional teaching methods are inverted. In this approach, students engage with course materials, such as readings, videos, or lectures, independently outside class time. Then, during class sessions, the focus shifts to interactive and collaborative activities, such as practice-sharing activities, in-class discussions, and hands-on learning experiences.

Pre-reading is an essential component of the flipped classroom model. It ensures that students come to class prepared to engage actively in discussions and activities. Without completing the pre-readings, students may be unable to participate and not grasp the concepts discussed during class fully. Therefore, pre-reading is crucial for students to maximize their participation and success in the course.

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 0 : 20 May - 26 May	Activity	In week 0, you are expected to complete the following: - A short questionnaire on Moodle called "Getting to know you" - A short questionnaire on Moodle to enable the course convenor to form groups - The pre-readings for week 1
Week 1 : 27 May - 2 June	Other	In week 1, you will come to campus twice. For Monday 27th May, you are expected to complete the following: - The pre-readings for week 1.1 on Moodle In class, in week 1.1: -Course Introduction -HTI journey and its multidisciplinary nature -Identify Phase -Personal Inventory For Wednesday, 29th May or Thursday, 30th May, you are expected to complete the following: - The pre-readings for week 1.2 on Moodle In class, in week 1.2: Preparing for Observations: Case Study -Disease State (of participating clinics). Initial familiarisation with anatomy and physiology, and pathophysiology -Problem Assessment: Case Study
Week 2 : 3 June - 9 June	Other	In week 2, you are expected to complete the following: - The pre-readings for week 2 on Moodle In class, in week 2: Preparing for Interviews: Case Study Please note that you will do your first clinic visit.
Week 3 : 10 June - 16 June	Other	In week 3, you are expected to complete the following: - The pre-readings for week 3 on Moodle In week 3, there is no class as there is a public holiday. However, you will work independently to cover the following: -Need Statement -Development & Strategies -Need Validation -Preliminary need characterization worksheet: Case Study -Reflections on your clinic visit#1 Please note that you will do your second clinic visit.
Week 4 : 17 June - 23 June	Other	In week 4, you are expected to complete the following: - The pre-readings for week 4 on Moodle In class, in week 4: - Practice-Sharing#2 - Clinical Literature -Need Validation -Preliminary need characterization worksheet (CE) -Teamwork Please note that you will do your third clinic visit.
Week 5 : 24 June - 30 June	Other	In week 5, you are expected to complete the following: - The pre-readings for week 5 on Moodle In class, in week 4: - Practice-Sharing#3 - Disease State through the Case Study (anatomy and physiology, pathophysiology, epidemiology, clinical presentation and outcomes, economic impact) - Existing Solutions through the Case Study (develop an overview of existing solution options; evaluate clinical solution profiles; analyze economic solution profiles (costs and who pays); explore utilization solution profiles; investigate emerging solution profiles, and summarize the solution landscape) -Students focus on disease state and existing solutions for their project Please note that you will do your fourth clinic visit.
Week 6 : 1 July - 7 July	Other	No class and clinic visit: Flexi week
Week 7 : 8 July - 14 July	Other	In week 7, you are expected to complete the following: - The pre-readings for week 7 on Moodle In class, in week 7: - Practice-Sharing#4 - Stakeholder analysis through the case study (who pays; the specific benefits; the specific costs that an innovation would create for each unique stakeholder group) -Students focus on stakeholder analysis for their project

		Please note that you will do your last clinic visit.
Week 8 : 15 July - 21 July	Other	In week 8, you are expected to complete the following: - The pre-readings for week 8 on Moodle In class, in week 8: - Practice-Sharing#5 Market Analysis through the Case Study (Market Landscape; Market Segmentation and Target Market Size) -Students focus on market analysis for their project
Week 9 : 22 July - 28 July	Other	No reading for week 9 Work in Progress Oral Presentation Time allocated to finalise the project brief
Week 10 : 29 July - 4 August	Presentation	My Experience Survey completion in class Oral Presentation in class

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

Course Resources

Prescribed Resources

Title: Biodesign: The Process of Innovating Medical Technologies (there is no requirement to purchase the book)

ISBN: 9781107087354

Edition: 2nd edition

Total pages: 839

Publication date: 2015

Publisher: CAMBRIDGE UNIV PRESS

Place of publication: CAMBRIDGE

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
	Rita Prestigiacomo					Yes	Yes
	Laura Poole-Warren					No	No
	Lauren Kark					No	No
	Mohit Shivdasani					No	No
	Robert Nordon					No	No
	Klaus Schindhelm					No	No
	Peter Spencer					No	No
	John Parker					No	No
	Beena Ahmed					No	No
	Claire Bridges					No	No

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit / Submit rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's Special Consideration page.

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

- Attendance
- UNSW Email Address

- [Special Consideration](#)
- [Exams](#)
- [Approved Calculators](#)
- [Academic Honesty and Plagiarism](#)
- [Equitable Learning Services](#)

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/ Moodle/LMS applies.

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment

tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

School Contact Information

Student Services can be contacted via unsw.to/webforms.