MEDI7051

The Artificial Human

Session 2, Special circumstance 2020

Medicine, Health and Human Sciences Faculty level units

Contents

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Notice

As part of Phase 3 of our return to campus plan, most units will now run tutorials, seminars and ot her small group learning activities on campus for the second half-year, while keeping an online ver sion available for those students unable to return or those who choose to continue their studies onli ne.

To check the availability of face-to-face and onlin e activities for your unit, please go to timetable vi ewer. To check detailed information on unit asses sments visit your unit's iLearn space or consult yo ur unit convenor.

General Information

Unit convenor and teaching staff
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Credit points
10

Prerequisites
Admission to MRes

Corequisites

Co-badged status

Unit description
This unit within the Masters of Research provides learning in the processes of development and commercialisation of research ideas using the framework of device development, with concepts being applicable to the wider biomedical sphere. This unit focuses on some of the latest technologies in medical implants and provides a critical review of the clinical, biological, structural and philosophical aspects of biomedical research development. In this unit you will explore: the concept of innovation; patenting; ethical and regulatory expectations; the process of clinical trials; issues of biocompatibility and infection. The unit also uses case studies of recent biomedical research and device success and failures (including in the orthopaedic and cardiovascular fields), to contextualise learning. Learning activities will include seminars from field experts and drafting of professional documents required in biomedical development and commercialisation. Through this unit you will develop an appreciation for research, development and commercialisation that will inform your future academic research or industry-focused biomedical career.

Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at https://www.mq.edu.au/study/calendar-of-dates

Learning Outcomes

On successful completion of this unit, you will be able to:

>   **ULO1:** Review advanced knowledge of the latest biomedical technologies in a variety of different medical disciplines.
>
>   **ULO2:** Critically evaluate biomedical implants in terms of clinical success and ethical issues.
>
>   **ULO3:** Evaluate research strategies used to advance translational research into medical implants on the market.
>
>   **ULO4:** Develop skills in communication and self directed learning.

General Assessment Information

Grade descriptors and other information concerning grading are contained in Schedule 1 of the Macquarie University Assessment Policy, which is available at: https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policies/assessment.

Further details for each assessment task will be available on iLearn.

All final grades in the Masters of Research are determined by a grading committee and are not the sole responsibility of the Unit Convenor.

Students will be awarded a final grade plus a Standardised Numerical Grade (SNG). The SNG is not necessarily a summation of the individual assessment components. The final grade and SNG that are awarded reflect the corresponding grade descriptor in the Grading Policy.

To pass this unit, students must demonstrate sufficient evidence of achievement of the learning outcomes, attempt all assessment tasks, meet any ungraded requirements including professionalism and achieve an SNG of 50 or better.

Student Professionalism

In the Faculty of Medicine, Health and Human Sciences, professionalism is a key capability embedded in all our programs. As part of developing professionalism, students are expected to attend all small group interactive sessions including tutorials, as well as complete online and and laboratory-based practical sessions.

Furthermore, lectures and seminars are key learning activities that you are expected to attend throughout the Masters of Research program. While audio recordings and lecture slides may be made available following these large group sessions, it is important to recognise that such resources are a study aid - and should not be considered an alternative to lecture or seminar attendance.

Students who do not maintain adequate attendance (greater than or equal to 80% of scheduled classes) may be deemed unable to meet expectations regarding professionalism and may be referred for disciplinary action (which may include exclusion from assessments and unit failure).

Similarly, as part of developing professionalism, students are expected to submit all work by the due date. Applications for assessment task extensions must be supported by appropriate evidence and submitted via www.ask.mq.edu.au. For further details please refer to the Special Consideration Policy available at https://students.mq.edu.au/study/my-study-program/special-consideration.

Submission of assignments

All written assignments are to be submitted in Turnitin. The marking rubric is contained within the Turnitin submission system. Instructions on submitting assignments and how to access marks and feedback through Turnitin are available through this link: Turnitin.

Late Submission

All assignments which are officially received after the due date, and where no extension or special consideration has been granted, will incur a deduction of 5% for the first day, and 5% for each subsequent day including the actual day on which the work is received. Weekends and public holidays are included. For example:

Due date	Received	Days late	Deduction	Raw mark	Final mark
Friday 14th	Monday 17th	3	15%	75%	60%

Assessment Tasks

Name	Weighting	Hurdle	Due
Ethics Assessment	20%	No	Week 3
Quizzes	40%	No	Week 6 and Week 13
Implant Research Project	40%	No	Week 9

Ethics Assessment

Assessment Type [1]: Professional writing
Indicative Time on Task [2]: 20 hours
Due: **Week 3**
Weighting: **20%**

2 to 3 page letter to patient detailing an example study protocol and risks. Includes review of a complete research study.

On successful completion you will be able to:

- Critically evaluate biomedical implants in terms of clinical success and ethical issues.
- Develop skills in communication and self directed learning.

Quizzes

Assessment Type [1]: Quiz/Test
Indicative Time on Task [2]: 30 hours
Due: **Week 6 and Week 13**
Weighting: **40%**

Two quizzes/mini-exams. Multiple choice and short answer questions covering the unit content.

On successful completion you will be able to:

- Review advanced knowledge of the latest biomedical technologies in a variety of different medical disciplines.
- Critically evaluate biomedical implants in terms of clinical success and ethical issues.
- Evaluate research strategies used to advance translational research into medical implants on the market.

Implant Research Project

Assessment Type [1]: Essay
Indicative Time on Task [2]: 50 hours
Due: **Week 9**
Weighting: **40%**

On a physiological problem/disease that has an unmet need for an implantable solution.

On successful completion you will be able to:

- Review advanced knowledge of the latest biomedical technologies in a variety of different medical disciplines.
- Critically evaluate biomedical implants in terms of clinical success and ethical issues.
- Evaluate research strategies used to advance translational research into medical implants on the market.
- Develop skills in communication and self directed learning.

1 If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the Writing Centre for academic skills support.

2 Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

Delivery and Resources

- This unit will require up to 2 hours of online contact each week in the form of either a lecture or tutorial, depending on the content of the week.
- Further material and suggested reading sources will be provided through the iLearn space.
- Students should use provided material to actively seek further reading through searching the current literature (e.g. research articles and reviews) using tools such as PubMed, Scopus, and/or GoogleScholar. This material should supplement and extend their understanding of the topics, and assist in preparation of assessed material.

Technology Used

Completion of online training and learning activities throughout the unit will require students to have access to a tablet, laptop or similar device. Students who do not own their own laptop computer may borrow one from the university library.

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- Academic Appeals Policy
- Academic Integrity Policy
- Academic Progression Policy
- Assessment Policy
- Fitness to Practice Procedure
- Grade Appeal Policy
- Complaint Management Procedure for Students and Members of the Public
- Special Consideration Policy *(**Note:** The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.)*

Students seeking more policy resources can visit the Student Policy Gateway (https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit Policy Central (https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/study/getting-started/student-conduct

Results

Results published on platform other than eStudent, (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in eStudent. For more information visit ask.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

Learning Skills

Learning Skills (mq.edu.au/learningskills) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- Getting help with your assignment
- Workshops
- StudyWise
- Academic Integrity Module

The Library provides online and face to face support to help you find and use relevant information resources.

- Subject and Research Guides
- Ask a Librarian

Student Services and Support

Students with a disability are encouraged to contact the Disability Service who can provide appropriate help with any issues that arise during their studies.

Student Enquiries

For all student enquiries, visit Student Connect at ask.mq.edu.au

If you are a Global MBA student contact globalmba.support@mq.edu.au

IT Help

For help with University computer systems and technology, visit http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/.

When using the University's IT, you must adhere to the Acceptable Use of IT Resources Policy. The policy applies to all who connect to the MQ network including students.

Changes from Previous Offering

Online offering for S2, 2020.