

# Course Project - Design Review Case Study

## Cell & Tissue Engineering (CTE)

### Overview

The purpose of the project is to get you thinking and acting as cell and tissue engineers. Over the course of the semester, you will write a case study of a tissue engineered solution to a medical condition. In doing so you will learn about how a new tissue engineered solution came to be, what challenges it faced and how well it has succeeded.

At the end of the semester, you will turn your written case study report and give a final presentation presenting the case study to the class. This project is worth 30% of your final grade in this course.

### Getting Started

The first step is to select a project subject. There are a variety of products on the market or near market for you to pick from. Some are tissue engineered “treatments” or “tissues” or both. Something that involves cellular engineering is also fair game. When selecting a product subject, make sure you can find some resources about it – you will need these to complete your case study research.

Once your topic is approved you may start working on the deliverables for the case study. These deliverables are all components of your final report. The deliverables are all considered drafts of for your final report – you are expected to edit them based on feedback and additional research for their final submission in the complete report.

In addition to your completed report, you will prepare and record a five-minute presentation on your case. These presentations will be viewed by all your peers and instructors. Your grade on final presentation will include a component for the feedback you give your peers on their presentations.

### Objectives

- Use fundamental principles to understand a cell or tissue engineered solution to a medical condition.
- Employ the elements of the engineering design process.
- Collate and analyze current medical literature and technology developments.
- Critically analyze ethical and future considerations of CTE-based solutions.



## Submissions/Deliverables

Weeks	Component	Submission Instructions
<b>Module 6</b> Draft	A. Project Selection & Problem Statement  Instructions provided in module 6	Uploaded to link in Module 6
<b>Module 7</b> Draft	B. Problem Description  Instructions provide in module 7	Uploaded to link in Module 7
<b>Modules 8-9</b> Draft	C. Solution Landscape  Instructions provided in module 8	Uploaded to link in Module 8
<b>Module 10</b> Draft	D. Solution Description – How it Works  Instructions provided in module 10	Uploaded to link in Module 10
<b>Modules 11-12</b> Draft	E. Verification and Validation Studies  Instructions provided in module 11	Uploaded to link in Module 11
<b>Module 13</b> <b>Project deliverable</b>	<b>Presentation</b>	Start a thread in the designated discussion area (linked from module 13) and upload/attach your slide PDFs and recorded presentation
<b>Module 13</b> <b>Project deliverable</b>	<b>Final Report</b>	Upload to link in Module 13



## Presentation and Final Report

	Description	Components
<b>Presentation</b>	<ul style="list-style-type: none"> <li>• PDF of PPT slides</li> <li>• Voice-over PPT recorded video presentation</li> </ul>	<ul style="list-style-type: none"> <li>• Five-minute recorded presentation</li> <li>• Feedback to peers on their presentations</li> </ul>
<b>Final report</b>	Written report submitted as PDF to Blackboard – a journey through your case study	<ul style="list-style-type: none"> <li>• Title Page</li> <li>• Problem Statement</li> <li>• Problem Description</li> <li>• Solution Landscape</li> <li>• Solution Description/Design Strategy and</li> <li>• Design Specifications</li> <li>• Verification and Validation Studies</li> <li>• Conclusion</li> <li>• References</li> <li>• Figures (throughout document)</li> <li>• Appendices if needed</li> </ul>

### Grading Criteria for Presentation

Points	Component
<b>5</b>	Written communication <ul style="list-style-type: none"> <li>• Meets content requirement (highlights all major components of the written report)</li> <li>• More is said than is written on the slide</li> <li>• The pace is easy to follow</li> <li>• Transitions between slides are natural</li> </ul>
<b>5</b>	Oral communication <ul style="list-style-type: none"> <li>• Meets content requirement (highlights all major components of the written report)</li> <li>• Graphics/images are used only as needed to convey or bolster the message of the slide</li> <li>• Animations and reveal is used appropriately</li> <li>• Graphics/images are referenced</li> </ul>
<b>5</b>	Visual communication <ul style="list-style-type: none"> <li>• Meets content requirement (highlights all major components of the written report)</li> <li>• Font is readable from 10ft away from your computer screen</li> <li>• Text is used appropriately on slides and limited to main points</li> <li>• Slide titles convey the take away message of each slide</li> </ul>
<b>5</b>	Questions <ul style="list-style-type: none"> <li>• Responded to at least 10 presentations by your peers by the close of Module 14</li> <li>• Thoughtfully responded to all questions asked of you by the close of the course</li> </ul>
<b>20 points total</b>	



## Grading Criteria for Written Report

The following table indicates the point values for each section of the written report. Please note that you will receive separate grades for the draft deliverables and final report. Drafts will be graded with the same rubric as the final report but are not expected to be of final quality – however, fully written drafts are expected not outlines. Individual rubrics for each component will be provided.

There is a 16-page maximum for text (including title page and contribution page). This does not include figures or references. The report should be double-spaced, size 11 or 12 font, 1" margins.

Total Point Value	Draft Points	Final Points	Component	Max Pages
2.5	0	2.5	Project selection	<1
2.5	0	2.5	Title page	1
2.5	0	2.5	Problem statement	<1
20	10	10	Project description	2
15	7.5	7.5	Solution landscape	1.5
30	15	15	Solution description/design strategy and specifications	2.5
20	10	10	Verification and validation studies	2
5	0	5	Conclusions	1
2.5	0	2.5	References	
-	-	-	Figures (throughout the document or appended)	
<b>100</b>	<b>42.5</b>	<b>57.5</b>	<b>Sum</b>	<b>12</b>

## Plagiarism

Plagiarism is defined as taking the words, ideas or thoughts of another and representing them as one's own. If you use the ideas of another, provide a complete citation in the source work; if you use the words of another, present the words in the correct quotation notation (indentation or enclosed in quotation marks, as appropriate) and include a complete citation to the source. See the course text for examples.

