

## INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES PROGRAM HESE THESIS PROJECT APPROVAL FORM

Health, Engineering Science and Entrepreneurship (HESE)

Thesis Course: I will be enrolling in (Please select ONE):

IBEHS 4E09A/B

IBEHS 5E15A/B

STUDENT NAME: \_\_\_\_\_

STUDENT NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

ACADEMIC YEAR: \_\_\_\_\_

This is a full academic year project course.

### SUPERVISOR INFORMATION

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Email: \_\_\_\_\_

Institution: \_\_\_\_\_

Phone: \_\_\_\_\_

Position: \_\_\_\_\_

Address: \_\_\_\_\_

### CO-SUPERVISOR INFORMATION (If Applicable) ^

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Email: \_\_\_\_\_

Institution: \_\_\_\_\_

Phone: \_\_\_\_\_

Position: \_\_\_\_\_

Address: \_\_\_\_\_

### PROJECT INFORMATION

Project Title: \_\_\_\_\_

Project Topic Area: \_\_\_\_\_

Start Date: \_\_\_\_\_ End Date: \_\_\_\_\_

^ Students may require a co-supervisor with an appointment at McMaster University, if their supervisor is not appointed by McMaster. The need for a co-supervisor will be determined on a case-by-case basis.

## INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES PROGRAM

### IBEHS THESIS PROJECT APPROVAL FORM

<b>Evaluation*:</b>		
Evaluation Criteria:	Evaluated By:	Weight:
<b>Total:</b>		<b>100%</b>

\*Evaluation **must** include a written thesis

<b>Outline &amp; Learning Objectives</b>

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### IBEHS THESIS PROJECT APPROVAL FORM

<b>Logistics and Health &amp; Safety</b>		Yes	No
Do you authorize the publishing of your name, contact information and project title to <a href="#">the iBioMed Project Database webpage</a> ?	<input type="checkbox"/>	<input type="checkbox"/>	
Have you ensured the student has the necessary Health and Safety (EOHSS) requirements?	<input type="checkbox"/>	<input type="checkbox"/>	
Does the project require Research Ethics approval(s)?	<input type="checkbox"/>	<input type="checkbox"/>	
Are the students working in a clinical environment where they interact with patients? <b>If yes, complete the questions below:</b>	<input type="checkbox"/>	<input type="checkbox"/>	
Are you authorized to allow students to interact with patients?	<input type="checkbox"/>	<input type="checkbox"/>	
Has the student completed the required Health Screening procedures as indicated by the Health Screening Office?	<input type="checkbox"/>	<input type="checkbox"/>	
Have you completed the required risk management assessment forms?	<input type="checkbox"/>	<input type="checkbox"/>	

### Supervisor Signature

\_\_\_\_\_

(Name)

\_\_\_\_\_

(Signature)

\_\_\_\_\_

(Date)

#### FOR OFFICE USE ONLY:

Authorizing Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES PROGRAM HESE THESIS PROJECT APPROVAL FORM

### IBEHS Thesis Evaluation Samples

The student should discuss the evaluation criteria with their supervisor to ensure that there is clarity. You are strongly encouraged to include a midpoint progress evaluation in December worth 10-20% of the final grade so that you will know whether you are progressing well and meeting expectations.

Below are some evaluation structures used in the past.

Research proposal - 5% Literature review - 15% Draft of thesis - 10% Thesis - 40% Work for data collection - 20% Final presentation - 10%	Background evaluation and data planning - 30% Database completion - 20% Analysis - 20% Presentation - 15% Original hypothesis/planning - 15%	PICO development - 25% Systematic research completion - 10% Filtering articles - 10% Systematic review table - 25% Abstract and results - 15% Manuscript - 15%
Early assessment feedback - 10% Literature review - 20% Progress presentation - 20% Final thesis - 50%	Critical literature review - 20% Experimental design - 5% Experimental procedure - 10% Data gathering - 10% Data analysis - 5% Weekly communications - 10% Final report - 40%	Final paper - 50% Final presentation - 25% Lab performance - 25%
Lab meeting attendance - 10% Foundations on gait analysis - 15% Research methods - 15% Data analysis - 10% Final presentation - 20% Written thesis proposal - 30%	Project plan - 25% Depth, comprehension and problem-solving - 35% Report and background - 25% Literature references and documentation - 15%	Market assessment of bioink manufacturing - 10% Market assessment of bioprinters - 10% Market assessment of companies selling tissue - 10% Patient landscape analysis - 10% Wet lab execution - 10% Weekly update meetings - 10% Final presentation and report - 40%
Final report - 30% Hands-on lab work - 30% Participation during group meetings - 20% Communication skills - 10% Time management - 10%	Lab meeting attendance - 10% Assessment on foundation - 15% Coding and analysis - 25% Research documentation for reproducibility - 25% Final presentation - 15%	Refining the scope of the project (business models, etc.) - 30% Back end database to assist in clinical data collection - 30% Assist research team with clinical study - 40%
Thesis report - 70% Journal paper based on experimental work - 30%	Research proposal/literature review - 15% Mid-year report - 25% Written thesis - 25% Work performed to collect & analyze data - 35%	Literature review - 30% Participation - 20% Written thesis - 40% Oral presentation - 10%



## INTEGRATED BIOMEDICAL ENGINEERING & HEALTH SCIENCES PROGRAM

### IBEHS THESIS PROJECT APPROVAL FORM

<p>Literature review - 20% Data management plan - 10% Research progress update (December) - 15% Research progress update (March) - 15% Final report - 30% Lab book/data records - 10%</p>	<p>Lab performance - 50% Midterm presentation - 10% Final presentation - 20% Final report - 20%</p>	<p>Meeting participation - 15% Timeline and progression - 15% Reading list completion - 20% Drafting proposal - 20% Final paper - 30%</p>
<p>Literature review - 15% Design - 20% Experimentation - 40% Validation and analysis - 25%</p>	<p>Literature review - 15% Project proposal - 15% Project management - 10% Lab work - 20% Final report - 35% Health and safety training - 5%</p>	<p>Proposal - 10% HIREB approval forms - 10% Data collection - 30% Data analysis - 20% Abstract prep - 10% Manuscript - 10%</p>
<p>3-minute thesis - 5% Research summary - 20% Thesis early assessment - 20% Final thesis - 45% Conference presentation - 10%</p>	<p>Experimental performance - 50% Lab performance - 10% Presentations - 20% Data analysis and reports - 20%</p>	<p>Literature review - 20% Weekly reports - 10% Group meeting presentations - 5% Lab performance - 20% Midterm report - 5% Final report - 20% Final presentation - 20%</p>
<p>Project management - 30% Experimental design - 10% Data analysis - 10% Effective communication - 10% Written reports - 40%</p>	<p>Proposal - 10% Proposal presentation - 10% Literature review - 20% Final presentation - 20% Final paper - 20% Lab participation - 20%</p>	<p>Meeting prep - 20% Question preparation - 20% Abstract preparation and final report - 20% Meeting organization - 20% Poster day presentation - 20%</p>
<p>Contribution to scientific knowledge - 65% Teamwork - 20% Integrity towards patients and patient materials - 15%</p>	<p>Literature review - 30% Lab performance - 40% Final report - 30%</p>	<p>3-minute thesis - 10% Abstract - 10% Poster - 30% Thesis paper - 50%</p>
<p>Timeline - 15% Research ethics submission - 15% Data collection and analysis - 15% Update and self-evaluation - 10% Abstract and conclusions - 15% 3MT - 5% Final report and self-assessment - 25%</p>	<p>Defining phenomenon studied - 10% Justifying topic choice - 10% Presenting research question - 10% Describe data collection method - 10% Choosing and reporting data - 10% Quality of final report - 25% Student work/involvement - 25%</p>	<p>Oral presentation - 10% Research proposal document - 30% Oral presentation of thesis - 20% Overall performance appraisal - 10% Final written thesis - 30%</p>

**INTEGRATED BIOMEDICAL ENGINEERING AND HEALTH SCIENCES PROGRAM**  
*IBEHS THESIS PROJECT APPROVAL FORM*

<p>Final written thesis - 45% Lab work - 35% Technical Presentation (April) - 15% 3-minute thesis - 5%</p>	<p>Experimental performance - 50% Lab performance - 10% Presentations - 20% Data analysis &amp; reporting - 20%</p>	<p>Final report - 100%</p>
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