

COURSE DETAIL

TISSUE ENGINEERING

Country

Ireland

Host Institution

Trinity College Dublin

Program(s)

Trinity College Dublin

UCEAP Course Level

Upper Division

UCEAP Subject Area(s)

Bioengineering

UCEAP Course Number

160

UCEAP Course Suffix**UCEAP Official Title**

TISSUE ENGINEERING

UCEAP Transcript Title

TISSUE ENGINEERING

UCEAP Quarter Units

5.00

UCEAP Semester Units

3.30

Course Description

This course gives an overview of contemporary approaches to tissue and cell engineering, including stem cells, cellular signaling, biomaterial scaffolds, use of bioreactors in tissue engineering, and controlled release strategies. Students explore ethical considerations related to clinical application of tissue and cell engineering technology. Topics include stem cells, embryogenesis, cellular signaling, extracellular matrix as a scaffold, degradable biomaterials for tissue engineering, cell-material interactions, scaffold design and fabrication, controlled drug release in tissue engineering, bioreactors in tissue engineering, production of mesenchymal stem cells, industrial tissue engineering manufacturing, cartilage tissue engineering, bone tissue engineering, cardiovascular tissue engineering, corneal tissue engineering and replacement, tissue engineering of the intervertebral disc (IVD).

Language(s) of Instruction

English

Host Institution Course Number

ME5BIO3

Host Institution Course Title

TISSUE ENGINEERING

Host Institution Course Details

<https://www.tcd.ie/media/tcd/engineering/pdfs/current-students/ME5BIO3---Tissue...>

Host Institution Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Engineering

Course Last Reviewed

2024-2025

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