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 Campus

Host Institution Faculty

Host Institution Degree

Host Institution Department

Engineering

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