## **COURSE DETAIL**

## **PRINCIPLES OF CELL SIGNALLING**

**Country** United Kingdom - England

Host Institution University of Cambridge, Pembroke College

**Program(s)** Summer in Cambridge

UCEAP Course Level Upper Division

UCEAP Subject Area(s) Biological Sciences

**UCEAP Course Number** 115

UCEAP Course Suffix

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UCEAP Official Title PRINCIPLES OF CELL SIGNALLING

UCEAP Transcript Title CELL SIGNALLING

**UCEAP Quarter Units** 5.00

**UCEAP Semester Units** 

## **Course Description**

Every cell, be it part of a simple or complex organism, is essentially a watery bag of electrolytes encapsulated by an oily membrane which insulates it from its immediate external environment. The latter, however, varies constantly in nature and composition. This throws an obligate need for the cells to communicate with their ever-changing external environment to adapt or survive and to secure nutrients. Cells may need to respond to several "changes" (i.e. stimuli or "signals," for example arrival of glucose or a hormone in blood) occurring in the extracellular milieu at once and different cells may need to respond to the same stimulus in different ways. For all these, cells are endowed with machineries (proteins and messenger molecules) dedicated to receive, transduce and decode these signals and eventually to trigger appropriate response. The whole process is known as signal transduction, often simply referred to as cell signalling. The beauty of cell signalling lies in the way different pathways converge, diverge and adapt to control a diverse array of cellular processes. It is essential for simple to complex life forms, be it either plants or animals. Cellular signalling in higher organisms is a major topic in modern medical and pharmaceutical research and is of central importance in the biomolecular sciences.

Language(s) of Instruction

English

Host Institution Course Number 455

Host Institution Course Title PRINCIPLES OF CELL SIGNALLING

Host Institution Campus University of Cambridge

**Host Institution Faculty** 

**Host Institution Degree** 

## Host Institution Department

Science and Maths

<u>Print</u>