

# Summer Course

on Environmental Life Sciences Engineering

**18 June – 6 July 2018**

Nanyang Technological University  
National University of Singapore

The Singapore Centre for Environmental Life Sciences Engineering (SCELSE) is a unique interdisciplinary Research Centre of Excellence (RCE) established to explore and translate the life of microbial biofilms into environmental solutions and significant environmental, health and industrial benefits by engineering microbial communities. SCELSE's unique interdisciplinary approach is at the forefront of the emerging field of environmental life sciences engineering (ELSE).

SCELSE is offering an intensive and highly interactive course which unites fields such as engineering and microbial ecology through the commonalities of biofilms.

Graduate and postgraduate researchers are invited to participate in this international Summer Course designed to bridge environmental engineering and contemporary life sciences in the context of microbial biofilm-driven processes.

## Course Aims

1. Familiarise participants with our current state of knowledge of microbial systems.
2. Enhance understanding of the biofilm mode of microbial life to harness microbial activities to efficiently recycle natural resources, provide pure water, control health risks and ensure a sustainable environment for future generations.

## Course Structure

Learning outcomes involve understanding mechanisms and processes using quantitative approaches. This knowledge will be used to design experiments that can yield information for developing new technologies or solving problems in the engineered environments.

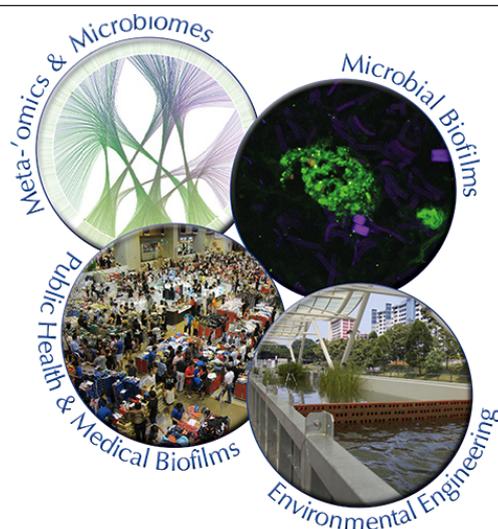
The course consists of: structured core lectures, topical seminars, guided discussions on specialised topics, hands-on sessions, student presentations and case studies; international and regional perspectives; exposure to Singapore's advanced water resource management through field trips.

*Participants of SCELSE's 2017 Summer Course came from around the globe, including Singapore, Malaysia, China, India, Japan, USA, UK and Europe.*

## Application information

Applicants will be selected based on their strong and demonstrated interest in exploring interdisciplinary approaches to address complex scientific scenarios.

The course is open for students worldwide currently pursuing graduate programs or those graduated within the last three years in engineering or other sciences.



## High-Profile Teachers

This three-week course brings together world-renowned scientists and engineers including SCELSE scientific leaders in the fields of microbial physiology and ecology, environmental engineering, meta'-omics and systems biology and visiting experts such as Krassimira Hristova (Marquette U), Janelle Thompson (MIT), Alain Filloux (Imperial College), and Devaki Bhaya (Stanford), who will be joining the teaching team. Participants will also interact with these experienced mentors in both practical and tutorial settings.

## Student comments

*"I found the bio-corrosion and marine microbiology sections very interesting, and I cannot speak more highly of the speakers for the course."*

*"I get to be in the same room with more than ten nationalities, from different countries, cultures and beliefs, which is so amazing!"*

*"The class on biophysics was very interesting because it never occurred to me that you can incorporate so much physics into biology."*



Admission to the course is competitive with a restricted number of places. Successful applicants will receive housing, meals and some allowances including partial financial support for travel.

Students and early career professionals from Asia are highly encouraged to apply. Please apply at:

<http://www.scelse.sg/Page/SummerCourse>