

MSc in Engineering and the coastal Environment (ECE)

Offered jointly by

Faculty of Engineering and Physical
Sciences (FEPS) (based at Highfield
Campus)

Ocean and Earth Science (OES)
(based at National Oceanography Centre
Southampton)

A unique collaboration



Welcome

Engineering and Physical Sciences

Highfield Campus



Welcome

Ocean and Earth Sciences

National Oceanography Centre



Welcome

Bolderwood Innovation Campus





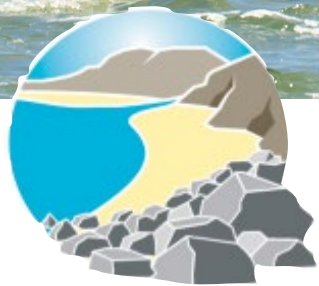
1. People



MSc Engineering in the Coastal Environment



Industry-oriented
ICE accredited



Civil Engineering and Ocean &
Earth Science



Over
260
graduates



95%
In employment/further
studies within 6 months



Global

Staff

FEE:

Robert Nicholls

Gerald Muller

Derek Clarke

Kate Parks

Sergio Maldonado

Paul Kemp

OES:

Ivan Haigh

Hachem Kassem

Ian Townend

Charlie Thompson (CCO)

Accreditation



*The Institution
of Structural
Engineers*



Chartered Institution of Highways & Transportation



INSTITUTE OF
HIGHWAY
ENGINEERS

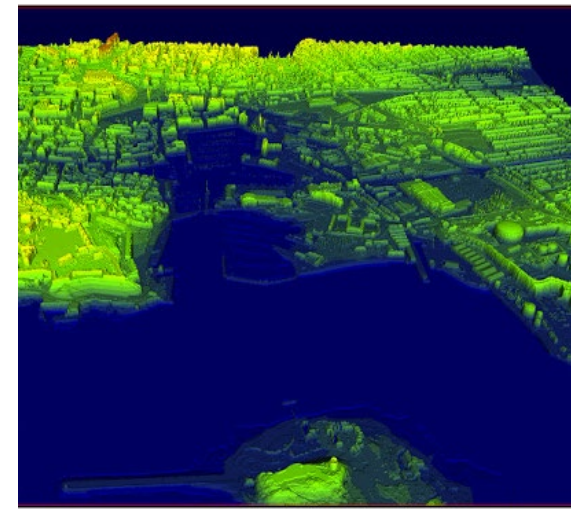


2. Course Themes



Course Themes

1. Coastal Modelling and Informatics



2. Coastal Sediment and Morphodynamics



3. Coastal Flooding and Hydrodynamics

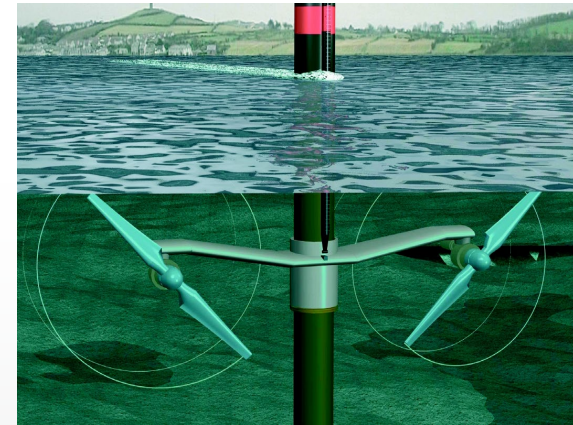


Course Themes

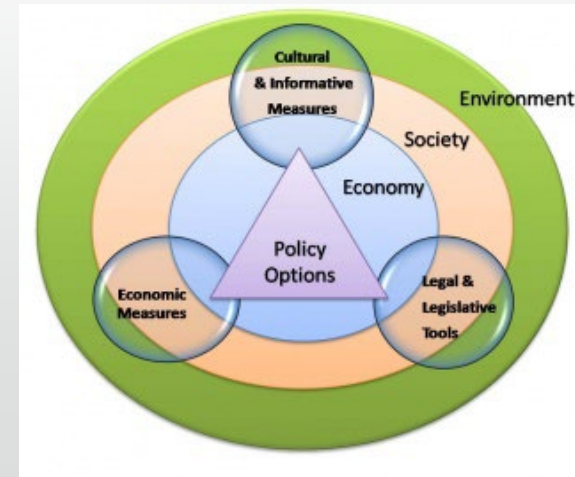
4. Coastal Structures



5. Renewable Energy



6. Coastal Appraisal and Policy Dimensions



Course Themes

CORE Themes	CENV6126	SOES3014	SOES6060	CENV6084	ENVS60322	SOES6075	CENV6128	CENV6123	CENV6172	SOES6011
Coastal Modelling and Informatics	X		X	X	X			X	X	X
Coastal Sediment and morphodynamics	X	X	X			X			X	X
Coastal Flooding and hydrodynamics	X		X			X	X	X	X	X
Coastal Structures			X	X				X		
Coastal Energy				X						
Coastal appraisal and policy dimensions	X		X		X	X		X	X	X



3. Course Structure



Curriculum (ECE)

Semester One

- CENV6084 Coastal & Maritime Engineering and Energy (15 cp) – Dr Gerald Muller
- CENV6126 Coastal Morphodynamics (15 cp) – Prof Robert Nicholls
- ENVS6032 Geographical Information Systems for Engineers (15 cp) – Dr Kate Parks
- SOES3014 Coastal Sediment Dynamics (15 cp) – Dr Hachem Kassem
- SOES6060 Key Skills & Applied Coastal Oceanography (7.5 cp) – Dr Hachem Kassem

and one of:

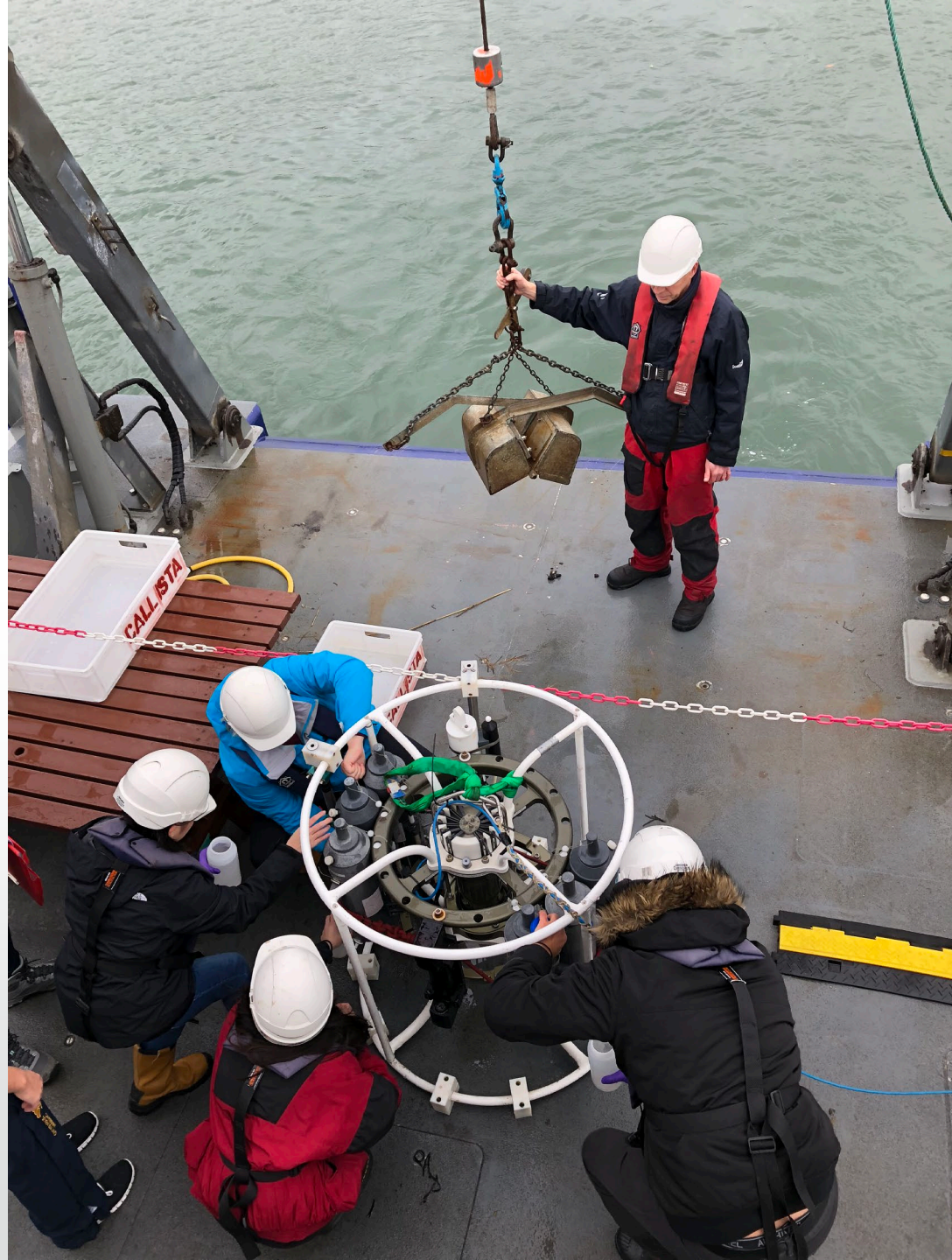
- SES6075 Introduction to Coastal for Engineers (7.5 cp) – Dr Ivan Haigh
- CENV6128 Understanding Civil Engineering (Hydraulics) (7.5 cp) – Dr Sergio Maldonado-Villanhueva

Semester Two

- CENV6123 Coastal Flood Defence & Management (7.5 cp) – Dr Derek Clarke
- ENVS6172 River and Fisheries Restoration (7.5 cp) – Prof Paul Kemp
- SOES6011 Modelling Coastal Processes (7.5 cp) – Dr Ivan Haigh

Semester Three

- Independent Dissertations (60cp)





4. Research Projects



Research Projects

Staff:

Robert Nicholls (FEE)

Gerald Muller (FEE)

Ivan Haigh (OES)

Hachem Kassem (OES)

Ian Townend (OES)

Max Barton (FEE)

Examples of Placement Organizations:

ABPmer – Southampton

Channel Coastal Observatory - Southampton

HR Wallingford - Oxford

Mott MacDonald – London

AECOM– Basingstoke

CH2M HILL – Swindon

Eastern Solent Coastal Partnership - Havant

Fugro EMU– Portsmouth

Overseas – GKSS, CNR, DELTARES, HC - Hong Kong, etc.

Example Projects 1

Experimental overtopping: comparisons with empirical prediction methods: AECOM

Tidal inlet stability: Mott MacDonald

Using Delft3D to study sediment transport around breakwaters: AECOM

Turbidity in an estuary: Lymington River Association

Shoreline management in Hong Kong: Arup/ Hong Kong Government

Impacts on a vertical seawall: HR Wallingford

Scour around monopiles: Mott MacDonald

Example Projects 2

Bed Mound Evolution: HR Wallingford

Asymmetry of turbulence and sediment transport:
University of Southampton/Hydralab

Wave climates and beach morphology: Hosted by
Deltares

Flooding in Cowes: Isle of Wight Council

Managed Realignment breach design: ABPmer

Sand transport using ADCP: HR Wallingford

Coastal Protection, India: Mott MacDonald

ECE dissertations undertaken in 2018

- The dynamics of geomorphological features at the mouth of tidal inlets (Abpmer)
- Assessing the effectiveness of frond mats in reducing scour around mono-piles (HR Wallingford)
- Tsunami modelling with length distortion
- Understanding drivers of coastal flooding on the Island of Jersey
- A centennial analysis of secular changes in tides around the UK
- Predicting nearfield erosion associated with coastal habitat creation schemes (Jacobs)
- Analysing land change within the Maldives using satellite imagery
- Sea level rise, land subsidence and design of land reclamation (Singapore)



5. Boat Work



Boat Work

Included in the following modules:

Key Skills and Applied Oceanography (7.5cp) (SOES)

Modelling Coastal Processes (15 cp) (SOES)

- Team work
- Safety at sea
- Equipment handling
(ADCP, CTD, Sand traps,
drifters, Niskin bottles)
- Navigation
- Data analysis (hydro-
graphic, met-ocean, &
sedimentological)



RV Callista – Coastal Research vessel (credit: Barry Marsh, 2005)

Boat Work



https://youtu.be/GnvYnr_TIU

Boat Work

Key Skills and Applied Oceanography Modelling Coastal Processes

- deployment of key instrumentation
- recovery and analysis of wave, tidal and depth data
- measurements of sand transport in tidal waters



Bill Conway – coastal research vessel (credit: Barry Marsh, 2005)

Boat Work

Power boating certificate available at extra cost

- RYA Certified Level II Power boat handling
- First Aid
- Planning marine operations
- Safety at sea
- Risk analysis & assessment

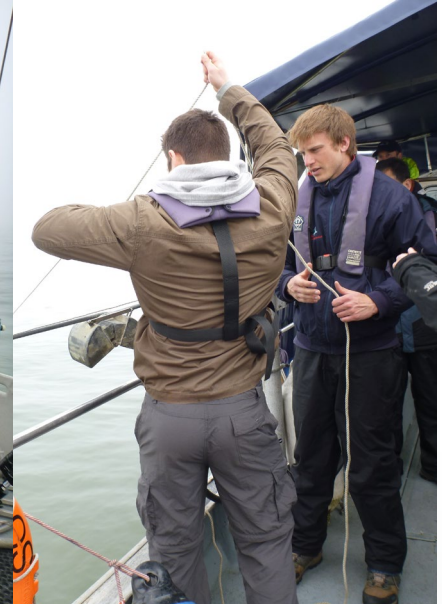


RIB – small boat handling (CREDIT: Barry Marsh, 2005)

Boat Work

UNIVERSITY OF
Southampton

Boat work – Bramble Bank (2013) – RV Bill Conway





6. Field Trips



Field Trips

UNIVERSITY OF
Southampton

Isle of Wight



(Photographs courtesy Bernie Choi)

Field Trips

UNIVERSITY OF
Southampton

Barton on Sea



Field Trips

UNIVERSITY OF
Southampton

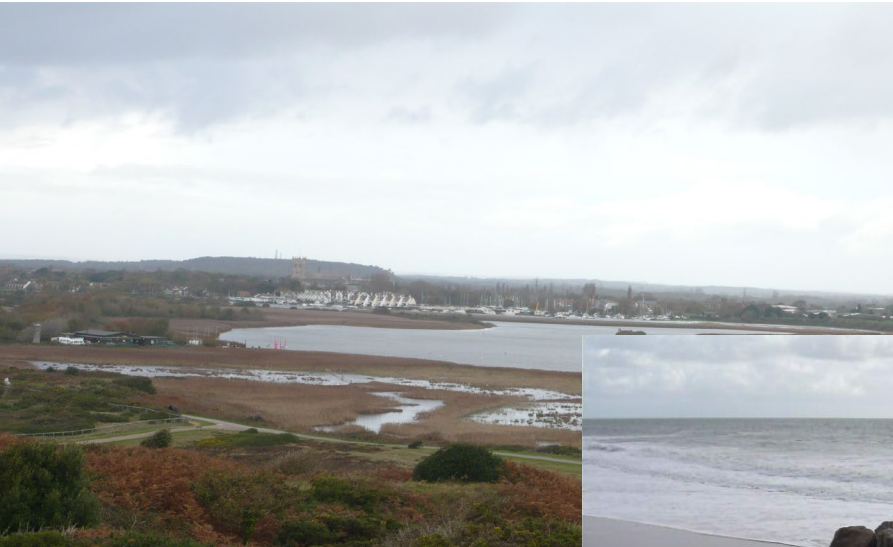
Farlington marshes



(Photographs courtesy Bernie Choi)

Field Trips

UNIVERSITY OF
Southampton



(Photographs courtesy Bernie Choi)

Fieldtrip



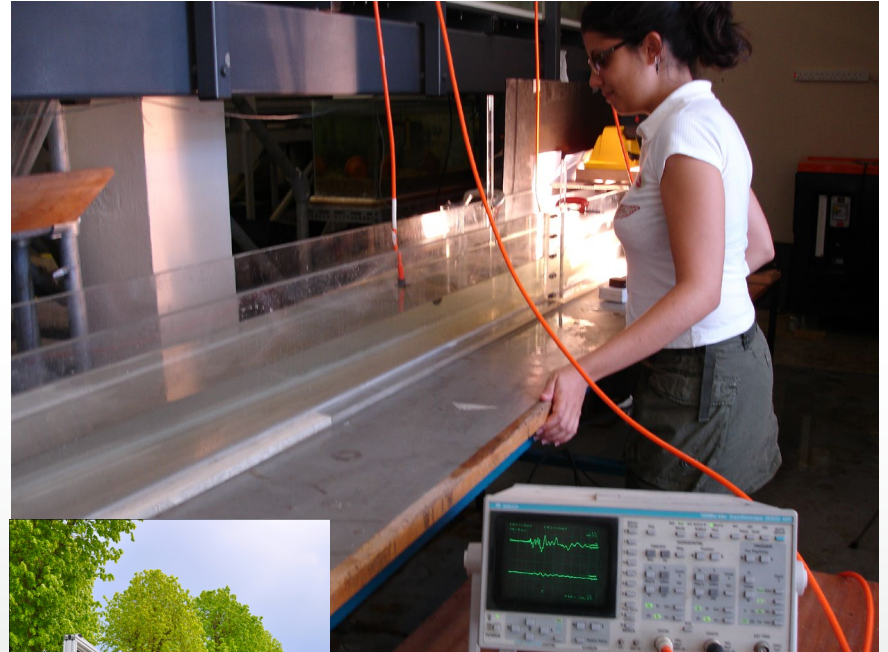
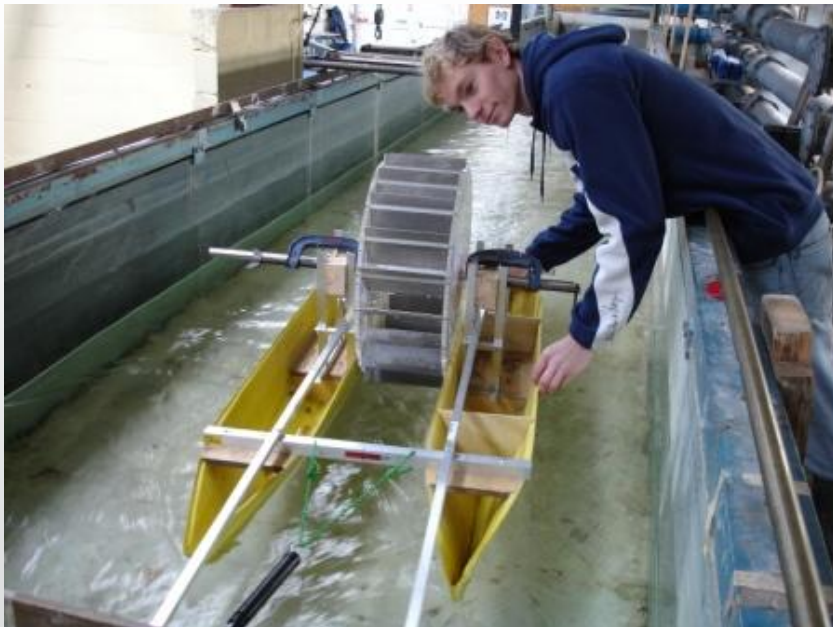
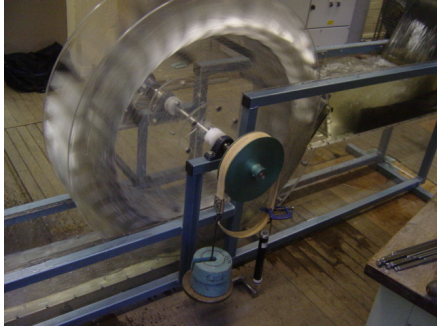
https://youtu.be/9DDwQv_lDO4



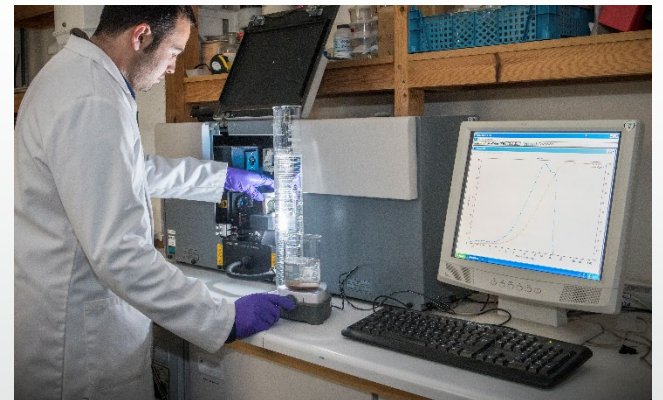
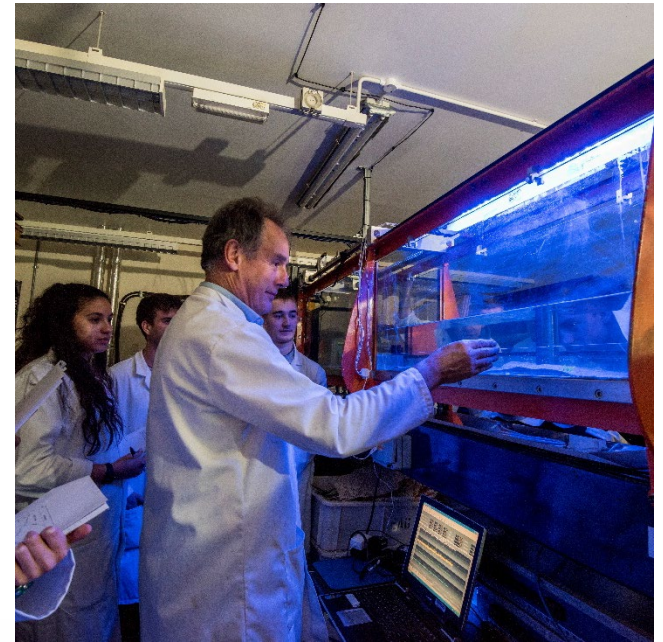
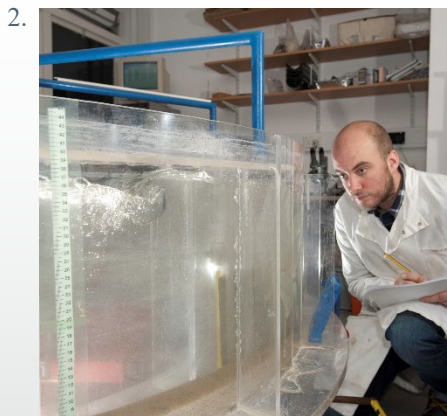
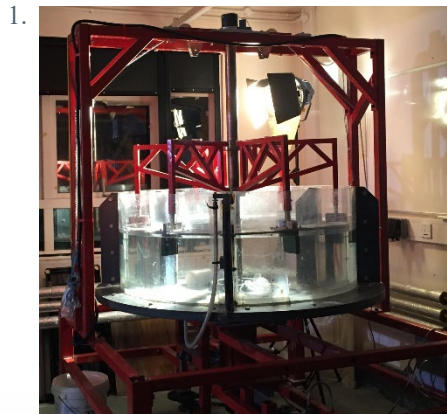
7. Laboratories



Hydraulics Laboratories – Highfield



Coastal Laboratories - sOES



1. Counter-rotating annular flume
2. Lab carousel – annular flume
3. Settling column
4. Recirculating flume
5. Coulter Laser Sizer for fine sediment grain size analysis



8. Social Media





Blog:

<http://www.mscecesoton.wordpress.com>

Facebook Page:

<https://www.facebook.com/ecesotonmsc/>

Twitter:

https://twitter.com/soton_msc_ece



9. Seminars



Coastal Seminar Series

Semester 1 – 2018/2019

UNIVERSITY OF
Southampton

Monday 08 October 2018, 18:00-20:00 NOCS (B68)- Charnock Lecture Theatre	Dr Sally Brown, Dr Phillip Goodwin, Dr Ivan Haigh, Prof Robert Nicholls (University of Southampton) <i>"Workshop on Coastal and Marine Implications of 1.5oC Global Warming and the Future of the Paris Agreement"</i>
Tuesday, 23 October 2018, 18:00-19:00 Building 07/3009 L/T A, Highfield Campus	Prof Edmund Penning-Rowsell, OBE (Middlessex and Oxford) <i>"Managing our coastal risks: A serious cause for concern?"</i>
Tuesday, 30 October 2018, 16:00-17:00 NOCS (B68)- John Swallow Room 454/06	Dr Ivan Haigh, Mrs Addina Inayatillah, Ms Lucy Fillbrook (University of Southampton) <i>"SurgeWatch – 2,000 years of coastal flooding in the UK"</i>
Friday, 16 November 2018, 16:00-17:00 Building 85/2207 Highfield Campus	Dr Alexandra Toimil Silva (IHCantabria) <i>"A probabilistic framework for the assessment of coastal erosion"</i>
Tuesday, 27 November, 2018 13:00-14:00 Building 85/2207 Highfield Campus	Prof Richard Simons (UCL) <i>"Seabed scour around offshore foundations"</i>
Friday 07 December 2018 16:00-17:00 Building 05/2015 L/T H Highfield Campus	Ms Lauren Burt (New Forest District Council) <i>"Past, Present and Future Management of Hurst Spit"</i>
Friday 08 January 2019 16:00-17:00 Building 05/2011 L/T C Highfield Campus	Mr Scott Armstrong (University of Southampton) <i>"Unintended consequences of beach nourishment along the U.S. Atlantic and Gulf Coasts"</i>



10. Peer Advisors



School of Engineering MSc Peer Advisors

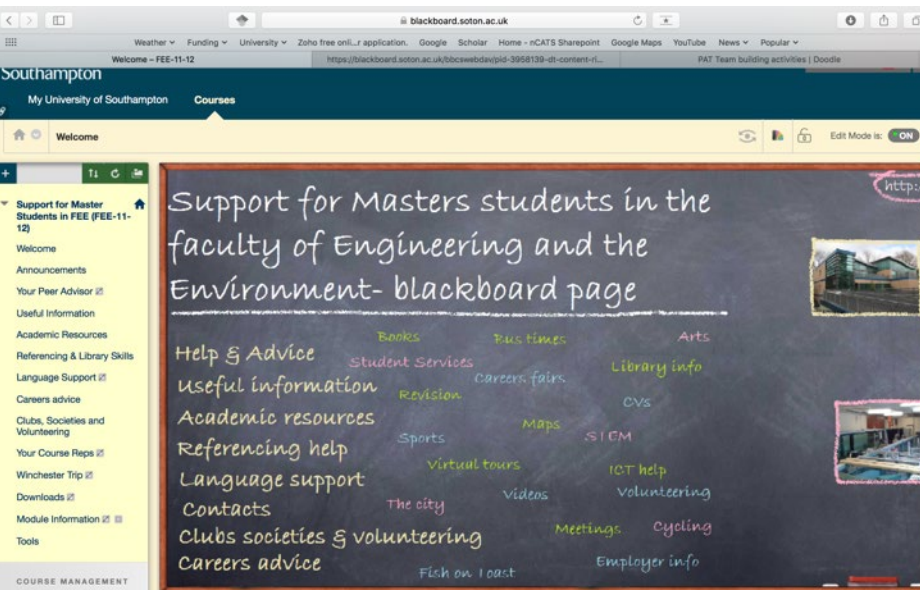
- Current MSc students
- Here to help you with questions
 - Language
 - Teaching
 - Cultural
 - Support
- Social events

Social Events

UNIVERSITY OF
Southampton



School of Engineering MSc Peer Advisor



Blackboard: FEE-11-12: Support for Master Students in School of Engineering



Facebook: SOE – MSc Students (2018-19) – University of Southampton 43



11. Industrial Board



Advisory Board

Meet annually - January

Damon O'brien – ABPmer

Sam Cope – Eastern Solent Coastal Partnership

Charlie Thompson – CCO

Ben Gouldby – HR Wallingford

Nigel Pontee – Jacobs

Andrew Colnutt - UKHO



12. Future Careers



Careers

More than 95% of graduates successfully move into careers or PhD research in the field within six months of graduating.

‘The course is both fascinating and challenging and I have actively enjoyed my time studying it. The lecturers work hard to equip you with a well-rounded view of the complex coastal environment as well as practical skills that are invaluable to anyone looking to pursue a career in coastal engineering’

Jennifer Watts 2016
works at Eastern Solent Coastal Partnership

MSc graduating Destinations (17) (2004-2005)

FIRST DESTINATION

ABPmer, Southampton

Halcrow, Argentina

PhD at Leicester University

Atkins, London

Delft Hydraulics, Holland

Black and Veatch, London

PhD at Southampton University

BP Nigeria

Royal Haskoning, Peterborough

PhD at Southampton University

Mott McDonald Ltd.

Land and Marine Ltd.

PhD at Southampton University

Halcrow, Southampton

Maldives Government

PhD at University of Bremen

Cameroon Government

MSc graduating Destinations (10) (2005-2006)

DESTINATION
ABPmer, Southampton
Sandwell, Vancouver, Canada
Three Gorges Dam Commission, China
International Marine & Dredging Consultants
Environment Agency
Scott Wilson, UK
Royal Haskoning, UK
PhD at Southampton University
Dept. Natural Resources, Cyprus
PhD at Southampton University

MSc graduating destinations (20) (2006-2007)

DESTINATION

Oil Spill Response Ltd.
Buro Happold, Kuwait
Antiga Government
Halcrow, Swindon
Jacobs Engineering Ltd.
Buro Happold, Kuwait
ABPmer, Southampton
Faber Martell, Wind farming
CTC Aviation Training Ltd.
Royal Haskoning
Willis Re (insurance)
Halcrow, UK
PhD in University of Galloway
Mott MacDonald, Cambridge
Scott Wilson, Basingstoke
Alcatel Lucent (Marine Cable)
Capita Symonds
PhD University of Southampton
IP Industries, Bristol (Cable)
Scott Wilson, Basingstoke

MSc graduating destinations (20) (2007-2008)

DESTINATION

Royal Haskoning, Peterborough
HR Wallingford, Oxford
Southampton City Council
EMU, Hayling Island
HR Wallingford, Oxford
Environment Agency, Winchester
Halcrow, Kent
PhD, Uni of Plymouth
Scott Wilson, Basingstoke
CCO, NOCS
Royal Haskoning, Peterborough
CCO, NOCS/ Uni of Sydney
Thames Valley Police Service
Mott Macdonald, Croydon
Environment Agency
Applying for PhD
HR Wallingford, Oxford
Van Oord, Holland
Halcrow, Peterborough

MSc graduating destinations (16) (2008-2009)

DESTINATION

Changed field
 HRWallingford Ltd., UK
 Fugro Geosconsulting, Houston
 ENBE Ltd., Wallingford
 SonarTek, Basingstoke
 Peter Gee Ltd.
 Soler Engineering, Malta
 University of West Indies
 Channel Coastal Observatory, Soton
 EMU, Southampton
 Greek Army
 JBA Consulting, Skipton
 Channel Coastal Observatory, Soton
 Environment Agency, Poole
 School Teaching
 HRWallingford Ltd., Houston

MSc graduating destinations (12) (2009-2010)

DESTINATION
Coastal consultancy (Caribbean)
Hong Kong Harbour Authority, China
Failed course
PhD. University of Southampton
Maldives Government
PhD, Greece
Van Oord, Rotterdam
Poole District Council
ABPmer, Southampton
PhD, University of Southampton
Mott MacDonald, Croydon
Oil Spill Response Ltd., Southampton

MSc graduating destinations (16) (2010-2011)

DESTINATION

Submitting dissertation

Failed

Dyer and Butler, Southampton

Royal Haskoning

Canterbury County Council

Mott MacDonald, Croydon

Hamburg Port Authority

Failed

Environment Agency

?

Halcrow, Swindon UK

Van Oord, Rotterdam

Engineering Consultancy, Cyprus

EDF Energy Ltd.

Channel Coastal Observatory, Soton

Scott Wilson, Basingstoke

MSc graduating destinations (16) (2011-2012)

DESTINATION

Engineering consultant (Greece)

URS Corp

General Electric Power and Water

Channel Coastal Observatory

? Unknown (China)

PhD Uni. Of Southampton

Tseri Municipality, Cyprus

PhD Uni. Of Portsmouth

? Unknown (China)

Halcrow, Peterborough

UNEP/MAP, Greece

URS, Basingstoke

Port Authority in Brazil

BMT, JFT, Perth, Australia

State Nuclear - China

Mott MacDonald Ltd, Croydon

MSc graduating destinations (8) (2012-13)

DESTINATION
PhD – MIT, US
? Unknown (China)
Anthony D Bates Partnership LLP
Research Assitation – Uni of Soton
DHI, Malaysia
URS
URS
? Unknown (China)

Page 1 of 2

DESTINATION
Van Oord
PhD Uni of Brighton
Environment Agency
RAMBOLL
PT Hita Dakara Jakarta
ABPmer
(unknown ?)
Hyder (Arcadis)
PhD Uni of Texas, US
Global Marine Systems
Havant Council
Scottish Power – Internship
DHI, Malaysia
Royal HaskoningDHV, Australia

Page 2 of 2

DESTINATION
Havant Council
bei ITT – Portconsult, Germany
University of Southampton
Mott MacDonald
CCO
Havant Council
ABPmer
Environment Agency
FUGRO EMU
Atkins
Hong Kong Government
? unknown
BAM Nuttall Ltd

MSc graduating destinations (16) (2014-2015)

DESTINATION

Department of Irrigation and Drainage, Malaysia

Construction firm - Cyprus

JBA (previously -East Solent Coastal
Partnership, UK)

China

EA

Mott McDonald

Mott McDonald , UK

Start up, Indonesia

HMO 'TRITON' ITB

Engineering Firm - China

China

Penerimaan Mahasiswa Baru dan Ramadhan -
Indonisean

AECOM, UK

Ministry of Public Work, Chile

Engineering firm Cyprus

MSc graduating destinations (12) (2015-2016)

ECE

DESTINATION
EA
EA
PhD (Flordia)
Private coastal consultant in Ecuador
? Unknown (China)
Shanghai Jinlong Technology Company, City Reconstruction Engineer
Bakker
Private Consulting (Dredging industry)
Environment Agency
PhD (Southampton)

MSc graduating destinations (12) (2016-2017)

ECE

DESTINATION
Environment Agency
Singapore Infrastructure and Reclamation Department (IRD) of Housing and Development Board
Environment Agency
Nortek
Ramboll
Eastern Solent Coastal Partnership
Ocean and Earth Science, Southampton
Department of housing, Singapore
Dredging Company, Chine
? Unknown – China
Local council - China
Mott MacDonald



11. Future Careers



Careers

More than 95% of graduates successfully move into careers or PhD research in the field within six months of graduating.

‘The course is both fascinating and challenging and I have actively enjoyed my time studying it. The lecturers work hard to equip you with a well-rounded view of the complex coastal environment as well as practical skills that are invaluable to anyone looking to pursue a career in coastal engineering’

Jennifer Watts 2016
works at Eastern Solent Coastal Partnership

MSc in Engineering and the coastal Environment (ECE)

Offered jointly by

Faculty of Engineering and Physical Sciences (FEPS) (based at Highfield Campus)

Ocean and Earth Science (OES)
(based at National Oceanography Centre Southampton)

A unique collaboration

