



## Centre for Doctoral Training in Composites Science, Engineering and Manufacturing (CoSEM CDT)

Our four-year PhD programme comprises a one-year innovative taught component and a three-year research project. The taught component will fast-track graduates with science and mathematics backgrounds to acquire core engineering skills, while engineering graduates will broaden their scientific knowledge. Each student will then undertake an individual PhD project. The first- year taught units and their skills/knowledge areas are mapped as follows and each student will study a total of 180 credit points.

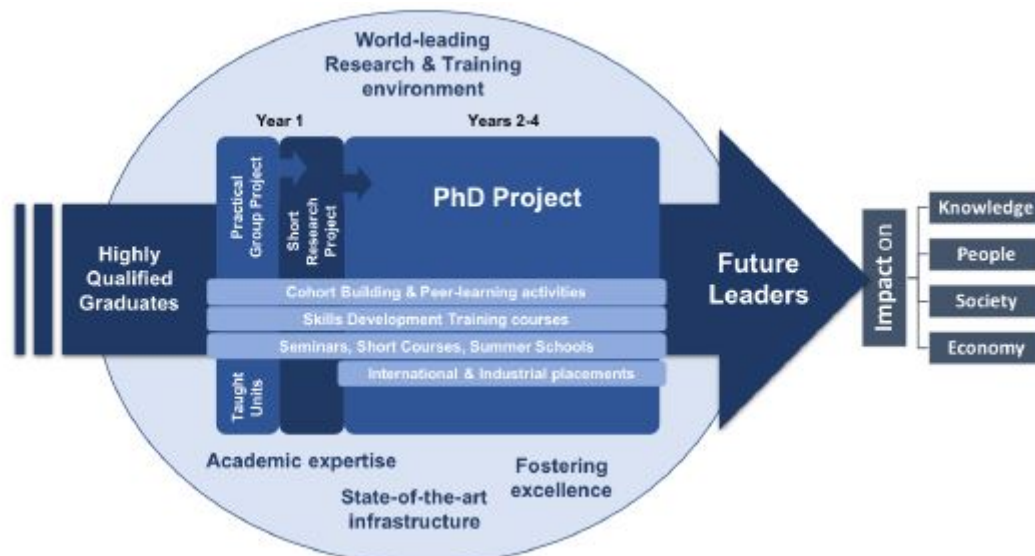
### Teaching Block 1 (Sept-Jan) – Mandatory and optional units

Unit code	Unit name	Credit points	Teaching block	Notes
AENGM0040	<a href="#">Advanced Composite Materials</a>	10	TB1	Mandatory
AENGM0071	<a href="#">Principles of Numerical Analysis and Research Software Development for Composite Materials</a>	10	TB1	Mandatory
AENGM0053	<a href="#">Mechanics of Composite Materials</a>	10	TB1	Mandatory
AENGM0028	<a href="#">Composites Design &amp; Manufacture</a>	20	Mandatory	TB4 (taught in TB1)
AENGM0055	<a href="#">Composite Products Development and Manufacture</a>	20	Mandatory	TB4 (taught in TB1)
AENGM0054	<a href="#">Structural Analysis</a>	10	TB1	Non-engineers only
MENGM0058	<a href="#">Structural Integrity and Non-destructive Evaluation</a>	20	TB1	Optional
AENGM3102	<a href="#">Engineering Design for Wind and Marine Power</a>	10	TB1	Optional

### Teaching Block 2 (TB2, January to June) – Mandatory and optional units

Unit code	Unit name	Credit points	Teaching block	Status
AENGM0051	<a href="#">Sustainable Composite Material</a>	10	TB2	Mandatory
AENGM2200	<a href="#">Advanced Composites Analysis</a>	10	TB2	Engineers only
AENGM0010	<a href="#">Smart Materials</a>	10	TB2	Optional
AENGM0011	<a href="#">Nanocomposites and Nanoengineering</a>	10	TB2	Optional
AENGM0044	<a href="#">Nature's Materials</a>	10	TB2	Optional
AENGM0057	<a href="#">Non-Linear Structures and Structural Stability</a>	10	TB2	Optional
AENGM0007	<a href="#">Research Project (Advanced Composites)</a>	60		June - September

As a PhD researcher the CDT is a privileged place to be. The programme is established as a complete package to support each individual student into being a leader in their field. It is not purely about working on a research project and the following the CDT skills development programme provides a rounded training schedule.



### SKILLS AND PERSONAL DEVELOPMENT

We usually offer the following courses to our students:

#### Year 1

- Research Ethics and Technical Writing
- Quality Papers
- Communicating Research via Video
- Inventorship, Logbooks
- Introduction to Public Engagement Innovation and Enterprise
- Research Software Engineering

#### Year 2

- Introduction to Project Management
- Open access and Research data management
- Confidence at Conference
- Innovation and Enterprise

#### Year 3

- Industrial Placement

#### Year 4

- How to write your thesis
- Viva Survivor
- Thesis requirements
- Writers retreat

#### Open to all years

- Taking control of stress
- Career Planning and CVs
- Equality, Diversity and Inclusion
- World Café (biennial)

### EXPECTATIONS WE HAVE OF OUR STUDENTS

We expect our students to seize the unique opportunity that the CoSEM CDT provides and challenge themselves for self-improvement. Our full expectations are laid out in the 'CDT Supervisor Student Charter' (available on request), this includes:

- ✓ To embrace the transferable skills opportunities and attend at least two non-compulsory training sessions every year.
- ✓ To be prepared to work on an industrially related PhD project, so as to achieve CoSEM CDT goal of 50% industrially focussed projects.
- ✓ To submit and present a paper to at least one national conference and one international conference during the PhD. These requirements are in addition to compulsory participation in the annual CoSEM CDT conference.
- ✓ To aim to submit at least two peer-reviewed journal papers before PhD completion.
- ✓ To volunteer for cohort activities, e.g. to act as student rep as well as respond to requests from student reps.
- ✓ To participate in at least one public engagement event, during the PhD.