UNIVERSITY OF Southampton

Semester Abroad Minor Aerospace Engineering 2020/21

Dr. Ralf Deiterding

r.deiterding@soton.ac.uk

School of Engineering

Semester Abroad Theme

- A single semester of Part III is spent abroad at one of our partner institutions
- All relevant teaching is in ENGLISH
- All courses are taken for credit and will be counted toward the UoS MEng degree
- Foreign grades are converted to UoS grades (this conversion follows the school algorithm but is not entirely strict and aimed at avoiding too extreme deviations from your previous grades)
- The MEng degree is awarded after 8 semesters, as usual
- Tuition at UoS simply continues and no further tuition costs should occur at the exchange institution
- For going to Europe there is a grant via the ERASMUS student mobility scheme (check blackboard site for details)
- Other small-scale scholarship options for non-ERASMUS exchanges might be available to you (details from UoS International Office)

Semester Abroad Theme

- **Students must achieve ~60% in Part I and II to be eligible for the Semester Abroad scheme**
- You have to be nominated by UoS when applying to the exchange institution
- Present approved partner institutions for Semester 1 exchange:
  - Pennsylvania State University, USA (non-ERASMUS)
  - Technical University Delft, Netherlands (ERASMUS)
  - Embry Riddle Aeronautical University, Prescott, USA (non-ERASMUS)
    - *Exchange contract in preparation. Possibility to be signed by end of February but not guaranteed!*
- For Semester 2 exchange:
  - ESTACA Paris, France (ERASMUS)
  - SUPAERO Toulouse, France (ERASMUS)
- Ad-hoc exchanges not permitted

Integration into the MEng degree

- Regular Part III programme

Module Code	Module Title	ECTS Credit Points	Choice Type	Sem
FEEG3003	Individual Project (core)	15	C	1,2
SESA3030	Aerospace Control Systems	7.5	C	1
SESA3029	Aerothermodynamics	7.5	C	1
SESA3026	Aircraft Structural Design	7.5	C	2
SESA3040	Aircraft Design	7.5	T	2
	or			
SESA3037	Concurrent Spacecraft Design	7.5	T	2
SESA3041	Spacecraft Systems Engineering and Design	7.5	T	1

- The IP has to be completed in a single semester
- Depending on semester, suitable replacements for compulsory courses have to be found at the exchange university
- Missing courses (two maximum) become compulsory in Part IV. Transfer of level 6 courses requires taking the same number of level 7 courses in part III. In total, 5 level 7 have to be taken in part III/IV.
- Choice of modules in part III and IV with paper form signed by AE Exchange Coordinator
- Grades will be converted to UoS grades upon return using standard conversion schemes plus the algorithm of the School of Engineering

Part III

Part III Modules at level 6 totalling 60 ECTS/120 CATS
Compulsory modules (C), Theme-specific modules (T), Optional modules (O)

Module Code	Module Title	Credit Points ECTS/CATS	Choice Type	Semester
FEEG3003	Individual Project (core)	15/30	C	2/1
FEEG3005/6	Semester Abroad module Option 1 (Semester 1)	30/60	C	1/2
	In liaison with the lead for Semester Abroad all students must take, either here or abroad the following modules (or their equivalents at the other institution).			
SESA3026	Aircraft Structural Design	7.5/15		2
SESA3029	Aerothermodynamics	7.5/15		1
SESA3030	Aerospace Control Systems	7.5/15		1
SESA3040	Introduction to Aircraft Design	7.5/15		2
	Instead of SESA3040 students may take, either here or abroad the following modules (or their equivalents at the other institution):			
SESA3037	Concurrent Spacecraft Design	7.5/15		2
SESA3041	Spacecraft Systems Engineering and Design	7.5/15		1
	For each module equivalent to SESA3026 and SESA3037 or SESA3040 taken abroad or deferred to Part IV, a theme-specific optional module may be chosen.	7.5/15	T	2

Part IV

Part IV Modules at levels 7 (min 45) and 6 (max 15) 60 ECTS/120 CATS
Compulsory modules (C), Theme-specific modules (T), Optional modules (O)

Module Code	Module Title	Credit Points ECTS/CATS	Choice Type	Semester	Level
FEEG6013	Group Design Project (core)	22.5/45	C	1,2	7
	If the module requirements shown for Part III above were <u>not</u> met in Part III up to 15 ECTS credits to be taken in Part IV from the following level 6 modules in liaison with the lead for Semester Abroad:				
SESA3026	Aircraft Structural Design	7.5/15	T	2	6
SESA3029	Aerothermodynamics	7.5/15	T	1	6
SESA3030	Aerospace Control Systems	7.5/15	T	1	6
SESA3037	Concurrent Spacecraft Design	7.5/15	T	2	6
SESA3040	Introduction to Aircraft Design	7.5/15	T	2	6
SESA3041	Spacecraft Systems Engineering and Design	7.5/15	T	1	6
	If all module requirements for Part III can be met in Part IV by taking less than 15 ECTS credit from above list, theme-specific optional modules may be chosen instead.				
	And at least 22.5 ECTS from Level 7 options. However 37.5 ECTS at level 7 must be taken in total in part III and part IV combined.				
	Option	7.5/15	O	1/2	7
	Option	7.5/15	O	1/2	7
	Option	7.5/15	O	1/2	7

Semester abroad at PennState

- Regular non-ERASMUS exchange in Semester 1
- 2 places for Aerospace Engineering students
- Semester at PennState is from Aug – Dec
- Past course choices (15 credits = 30 ECTS) have been
  - **AERSP425 Theory of Flight and/or AERSP412 Turbulent Flow (SESA3029)**
  - **AERSP413 Stability and Control of Aircraft (SESA3030)**
  - AERSP 401A Spacecraft Design/Preliminary (SESA3041)
  - AERSP313 Aerospace Analysis
  - ECON102 Microeconomics (Option)
- Replacements for SESA3029 and SESA3030 should be taken as it is very difficult to take level 7 courses on this exchange
- Be careful with 400 level modules and mandatory requirements!
- Online time table (if necessary use Fall 2019 as guideline): http://schedule.psu.edu
- https://www.aero.psu.edu/assets/docs/penn-state-aerospace-engineering-undergraduate-curriculum-guide.pdf
- External application deadline: 1 April 2020

Semester abroad at TU Delft

- ERASMUS exchange with some forward tracking of Part IV options in Semester 1
- 6 places for Aerospace Engineering students only
- Semester at Delft is from Sep 1 – Jan 30 and separated into two parts
- AE thematic minors worth 30 ECTS – mixed Part III and IV
  - **Offshore wind energy**
  - **Airport of the future**
  - Self-composed minor (not recommended, will be at MSc level throughout and hence too advanced)
  - Spaceflight minor not offered anymore (department is overloaded with regular space courses)
- Minors include at least two level 7 courses, hence mandatory level 6 courses (SESA3029 and SESA3030) move to part IV
- Gives the opportunity of setting a thematic minor while still being classified as Semester Abroad student
- https://www.tudelft.nl/en/ae/education/minors
- External application deadline: 1 April 2020

Semester abroad at ERAU, Prescott, AZ

- *Exchange contract is moving forward but completion not guaranteed before application deadline!*
- ***When applying for ERAU, also apply to other places as backup!***
- Regular non-ERASMUS exchange in Semester 1
- 2 places for Aerospace Engineering students
- Possible course choices
  - **AE301 Aerodynamics II (SESA3029)**
  - **AE413 Airplane Stability & Control or AE430 Control System Analysis and Design (SESA3030)**
  - AE318 Aerospace Structures I (SESA 3026)
  - AE420 Aircraft Preliminary Design (SESA3040)
  - AE427 Spacecraft Preliminary Design (SESA3041)
- All modules should be offered in every semester
- Online time table: https://catalog.erau.edu/prescott
- External application deadline: mid March to early April 2020

Semester abroad at ESTACA Paris

- Regular ERASMUS exchange in Semester 2
- Min. 4 places for Aerospace Engineering + Mechanical Engineering students
- Semester at ESTACA is from Feb – Jun
- English programme in *Automotive & Aeronautics Design* at 32 ECTS is **preset** and includes
  - Computer Aided Engineering
  - Signal Processing
  - Computational Fluid Dynamics
  - Hydraulic systems
  - **Structural Design (SESA3026)**
  - **Technical project (level 7)**
  - Project management
  - French language and Culture
- SESA3040 or SESA3037 has to be taken in part IV
- http://www.estaca.fr/en/programs/automotive-aeronautics-design-programme.html
- https://www.estaca.fr/files/194/Publications/118
- External application deadline: 15 October 2020

Semester abroad at SUPAERO Toulouse

- Regular ERASMUS exchange in Semester 2
- Min. 4 places for Aerospace Engineering students only
- Spring Semester in Aeronautical Engineering at SUPAERO is from late Jan – early/mid Jun
- English programme at 30 ECTS is **preset,** each course at 6 ECTS, and includes
  - **Aircraft design (SESA3040)**
  - **Aircraft structures (SESA3026)**
  - Representation, analysis and dynamic systems control
  - Project in area of applied aerodynamics and propulsion
  - Introduction to French language, culture and to the aerospace industry in France
- Equivalent courses for SESA3040 and SESA3026 part of preset curriculum, no constraints on level 7 courses in part IV
- https://www.isae-supaero.fr/en/admissions-en/ingenieur-isae-supaero-msc-admissions/
- https://websites.isae-supaero.fr/springsemester
- External application deadline: around 15 October 2020

Internal application process

- Things to consider before applying
  - Why do I want to do this?
  - What are the benefits?
  - What are the risks and potential problems?
  - What are the costs?
- Fill out the Internal Application Form and submit to R.Deiterding@soton.ac.uk by Friday, 21st February 2020
- The quality of your internal application has an influence on the ranking. The selection is not made just on grades only.
- I will make an internal list and confirm with you within days
- By early March, you should have clarity for which exchange you are selected

Preparing the external application after internal selection

- Check requirements (see links above)
- Go to BlackBoard -> Exchange & Study Abroad
- Download learning forms, insurance, risk assessment forms, etc.
  - ERASMUS forms for Delft, ESTACA, SUPAERO
  - Non-ERASMUS forms for PennState
- Have learning form with course plan and risk assessment form signed by Study Abroad Faculty Officer
- Prepare further required material (motivation letter, etc.)
- Obtain nomination letter (if required)
- Submit by external deadline (see above)
- *More details from International Office!*