Department of Chemical and Biomolecular Engineering
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Study Abroad Programs in Chemical and Biomolecular Engineering

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In order to make semester study abroad easier to do in chemical engineering, we have developed pre-approved paths at the University of Manchester and Edinburgh University. We also allow a Semester Abroad Technical Breadth Sequence, which consists of three upper-level technical courses that do not need to be in one coherent area; this sequence will make it easier to work towards completing a technical breadth sequence while spending a semester abroad. Please contact me if possibly interested one of these options, and we can discuss further.

Normal Path at CWRU

Fall 2	Spring 2	Fall 3	Spring 3	Fall 4	Spring 4
ECHE 260	ECHE 363	ECHE 360	ECHE 361	ECHE 362	ECHE 399
MATH 223	MATH 224	ECHE 367	ECHE 364	ECHE 398	ENGR EL
ENGR 225	STAT 313	ENGR 210	ECHE 365	ECHE BR I	SCI/EN ELEC
CHEM 223	PHYS 122	CHEM 290	ENGR/L 398	ECHE BR II	ECHE BR III
SAGES III	BREADTH I		BREADTH II	BREADTH III	BREADTH IV

Option 1: Semester Abroad at University of Manchester, Spring 2rd Year

Fall 2	Spr 2 Abroad	Fall 3	Spring 3	Fall 4	Spring 4
ECHE 260	M_ECHE 363	ECHE 360	ECHE 361	ECHE 362	ECHE 399
MATH 223	M_MATH 224	ECHE 367	ECHE 364	ECHE 398	ELEC[b]
ENGR 225	ELEC[b]	PHYS 122	ECHE 365	ENGR 210	ELEC[b]
CHEM 223	ELEC[b]	STAT 313	ENGR/L 398	ELEC[b]	ELEC[b]
SAGES III	ELEC[b]	CHEM 290	Extra course[a]		ELEC[b]
	ELEC[b]				

Option 2: Semester Abroad at University of Manchester, Spring 3rd Year

Fall 2	Spring 2	Fall 3	Spr 3 Abroad	Fall 4	Spring 4
ECHE 260	ECHE 363	ECHE 360	M_ECHE 361	ECHE 362	ECHE 399
MATH 223	MATH 224	ECHE 367	ELEC[b]	ECHE 398	ECHE 365
ENGR 225	STAT 313	ENGR 210	ELEC[b]	ENGR/L 398	ELEC[b]
CHEM 223	PHYS 122	CHEM 290	ELEC[b]	ELEC[b]	ELEC[b]
SAGES III	ECHE 364[d]		ELEC[b]	ELEC[b]	ELEC[b]
			Extra course[a]		

Option 3: Semester Abroad at Edinburgh University, Fall 4th Year

Fall 2	Spring 2	Fall 3	Spring 3	Fall 4 Abroad	Spring 4[c]
ECHE 260	ECHE 363	ECHE 360	ECHE 361	E_ECHE 362	ECHE 399
MATH 223	MATH 224	ECHE 367	ECHE 364	E_ECHE 398	ELEC[b]
ENGR 225	STAT 313	ENGR 210	ECHE 365	ELEC[b]	ELEC[b]
CHEM 223	PHYS 122	CHEM 290	ENGR/L 398	ELEC[b]	ELEC[b]
SAGES III	ELEC[b]		ELEC[b]	ELEC[b]	ELEC[b]
				Extra course[a]	

[a] These courses are 2.5 credits (unless otherwise noted), so need an extra 4-(or 5 for Fall 4 Abroad) credit course(s) to make up for deficit.
[b] ELEC courses could be CSE breadth electives, ECHE technical breadth electives, the engineering elective, or the science/engineering elective, as needed (a total of 9 courses in this category).
[c] Must take enough credits in last semester in order to satisfy senior residency requirement (15 semester hours must be earned in residence after the student has earned a total of 105 semester hours)
[d] Normally taken in Spring 3

Courses at University of Manchester
M_ECHE 361: Distillation & Absorption, CHEN20072
M_ECHE 363: Chemical Thermodynamics, CHEN10192
M_MATH 224: Engineering Mathematics 2, CHEN10072
Possible Electives: Process Safety, CHEN20152; Engineering Biotechnology, CHEN10162; Mechanical Behaviour, MATS16102; Structure of Solids, MATS16202; Functional Properties and Environmental Interactions, MATS16302

Courses at Edinburgh University
E_ECHE 362: Chemical Engineering Laboratory 3
E_ECHE 398: Chemical Engineering Design: Synthesis and Economics 4
Possible Electives: Fluid Mechanics (Chemical) 4; Chemical Engineering Design 4; Engineering Project Management 4; Fire Science and Fire Dynamics 4; Fire Investigation and Failure Analysis 5; Operations Management 4; Process Safety and Environmental Issues in Chemical Engineering 3; Polymer Science and Engineering

NOTES
1. NOT all ELEC courses should transfer to CWRU for ECHE 300-TR credit. Students will need to use the Course Approval Form and ask the academic representative to determine the appropriate transfer.
2. Management or Engineering Project Management 4, can meet the department's technical breadth elective requirements (3 courses, 9 cr)
3. While fluid dynamics is part of chemical engineering as well, Fluid Mechanics (Chemical) 4 (CHEE10004) will overlap significantly with ECHE 360.