the ENGINEERING ACADEMY



INFORMATION BRIEFING OCTOBER 2016

Dr Andrew McLaren Vice Dean Academic Faculty of Engineering

Agenda



- Welcome and introductions
- What is the Engineering Academy?
- Who are the partners?
- What is the programme?
- What about skills development?
- Progression to University
- Being a University of Strathclyde student

What is the Engineering Academy?



- Funded by the Scottish Funding Council
- 105 student places
- Partnership between University of Strathclyde and a group of FE colleges with industry support
- Students study an enhanced HNC in college
- Skills development programme
- Guaranteed articulation to University course on satisfactory completion
- Seven university departments in Engineering

The Partnership

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Scottish Funding Council Promoting further and higher education Skills Development **Scotland**

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NB Engineering Academy students are University of Strathclyde students from day 1 guaranteed direct entry to Year 2 upon meeting requirements



- HNC Chemical Engineering
 - Forth Valley College
 - Chemical & Process Engineering

HNC Electronics

- Glasgow Clyde College
- Glasgow Kelvin College
- New College Lanarkshire
 - Electronic & Electrical Engineering

HNC General Engineering

- City of Glasgow College
- West College Scotland
- Glasgow Kelvin College
- Ayrshire College
 - Biomedical Engineering
 - Civil & Environmental Engineering
 - Design, Manufacture & Engineering Management
 - Mechanical & Aerospace Engineering
 - Naval Architecture, Ocean and Marine Engineering

HNC Curricula

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MANDATORY (M) UNITS REQUIRED FOR THE HNC AWARD; ALL UNITS REQUIRED FOR PROGRESSION Note: UNITS COULD BE SUBJECT TO CHANGE

Doportmont (EEE)

• Biomedical Engineering (BME) Design Manufacture and Engineering Management(DMEM) Naval Architecture, Ocean and Marine Engineering (NAOME) Civil and Environmental Engineering (CEE) Embedded HNC General Engineering Award (16/15 credits) Communication: Practical skills (3) H7MB 34 (M) DT8Y34 (M) Quality Management : An Introduction (4) H7K0 33 Engineering Maths 1 (3) Materials Selection (4) DT4634 (M) DRIT34 (M) Statics and Strength of Materials (2) DT9P34 (M) Thermofluids (3) DT9T34 (M) Dynamics (2) DT9X34 (M) Pneumatics and Hydraulics (3) DR3L34 (M) Engineering Principles (3) DR1W34 (M) Engineering Drawing (3) FY9E34 DC and AC Principles (2) DR3M35 Design for Manufacture (3) Engineering Maths 2 or (3) H7K1 34(M) H7K2 34 Engineering Maths 3 (2) Computer Aided Drawing for Engineers DR1X34 (M) (3) DV1134 (M) Graded unit 1 examination - Grade A

Mechanical & Aerospace Engineering (MAE)

Departments;

Electronic and Electrical Engineering Embedded HNC Electronic Engineering Award (15 credits)	
DG3N34 (M)	Electronic Testing Skills(4)
H7K0 33 (M)	*Engineering Maths 1: (3)
FY9E34 (M)	DC and AC Principles (2)
FY9T34 (M) X 2	Analogue Electronic Principles (4)
DG3C34 (M)	Combinational Logic (4)
DG5334 (M)	Sequential Logic (4)
DG5834(M)	High Level Engineering Software (4)
H7K1 34 (M)	*Engineering Maths 2 (3)
H7K2 34	*Engineering Maths 3 (2)
H7K3 35	* Engineering Maths 4 (4)
DG3G34 (M)	Electrical Networks & Resonance (2)
DG2W35	Active Electronic Circuits (4)
DG2T34 (M)	Graded unit 1 examination – Grade A

Department (CPE) Chemical & Process Engineering	
+++Embedded HNC Chemical Process Technology Award (20 Credits)	
D75X34 (M)	Information Technology: Application Software 1 (2)
DH2K34 (M) x2	Fundamentals Chemistry: Theory and Practice (3)
DP2N34	Fundamental Concepts of Inorganic Chemistry (3)
DH54 35	Instrumental Techniques: Theory and Practice (3)
DP2P34 (M)	Fundamental Concepts of Organic Chemistry (3)
DP2R34 (M)	Fundamental Concepts of Physical Chemistry (2)
F3X834 (M)	Chemical Engineering Principles (2)
F3XB34 (M)	Fluid Mechanics: Theory and Practice (3)
F43J34 (M)	Process Safety Engineering (4)
F3XC34 (M)	Heat Transfer: Theory and Practice (3)
F3XG35	Process Operations: Heat Exchange, Drying and Evaporation (3)
H7K134 (M)	Engineering Maths 2 (3)
H7K234 (M)	Engineering Maths 3 (2)
H7K335 (M)	Engineering Maths 4 (4)
H7K435 (M)	Engineering Maths 5 (5)
B5K904	Contribute to the Health and Safety of the Working Environment
AY1A04	Monitor a Process System
AY1904\05	Start Up and Shut Down a Process System
F3XD34	Industrial Chemicals: Processes and Products (3)
F4CH34 (M)	Graded unit 1 examination – Grade A

Biomedical Engineering



- The application of engineering knowledge and skills to human biology, healthcare and medicine
- Improving future healthcare through innovations and advances in biomedical engineering
- Prosthetic devices & artificial organs, tissue engineering & regenerative medicine, clinical/surgical engineering

Chemical & Process Engineering



- Changing raw materials into valuable products in a cost effective and safe manner
- Oil and gas, Pharmaceuticals, Energy, Food and drink, Materials
- Tissue engineering

Civil & Environmental Engineering







- Deals with the design, construction and maintenance of infrastructure that supports everyday life – roads, railways, bridges, tunnels etc
- Creating, improving, protecting the environment we live in
- Supply of clean water, transport networks, urban life, sustainable energy
- Disaster aid

Design, Manufacture &
Engineering Managementthe
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- Creative Engineering
- Telecommunications, automotive, computer industries, design consultancy
- Invention and Innovation
- Product Design

Electronic & Electrical Engineering





- From power stations to electric vehicles, telecoms networks to computing infrastructures, electronic systems in our homes, the world of entertainment and industry: all are created, designed and operated by electronic and electrical engineers
- Electrical harnessing electrical power
- Electronic designing and developing devices
 Often includes computing
- Power stations, satellites, cashpoint machines, heart monitors, mp3 players, games consoles
- Smaller, faster, smarter

Mechanical & Aerospace Engineering





- Designing machines, aircraft, space systems
- Medical, automotive, railway, renewable energy, sports
- Materials





Naval Architecture, Ocean & Marine Engineering



- Design, construction, repair and operation of all types of ships, boats and other fixed and floating marine structures
- Supertankers, sailing yachts, fast ferries, offshore wind turbines, oil platforms
- 98% of international cargo carried by ships

Progression to Strathclyde



- Progression to second year guaranteed subject to satisfactory completion of programme
 - Pass all units within enhanced HNC curriculum
 - A in graded unit
 - Completion of skills development training
- Second year will be a slightly modified version of the regular Strathclyde curriculum
- Third year onwards is identical to regular curriculum

Scholarships and Placements ENGINEERING ACADEMY

- Aim is to give opportunities for every EA student to be linked with an appropriate engineering company
 - Sponsorship
 - Work placements in summer vacations
- We will be working with students to match students to companies, starting in first semester
- Associate Director Stewart McKinlay
 - Industrial engagement and scholarships
 - Supporting students with applications, CVs, interviews

Being a University of Strathclyde student



- Become familiar with University life
- Academic counsellor at Strathclyde
- Electronic access to University VLE
- Strathclyde email address and login
- Member of Sports Centre
- Access to University Library
- Student membership of the University of Strathclyde Students' Association
- Eligible to apply for accommodation on University campus

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Any Questions?

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