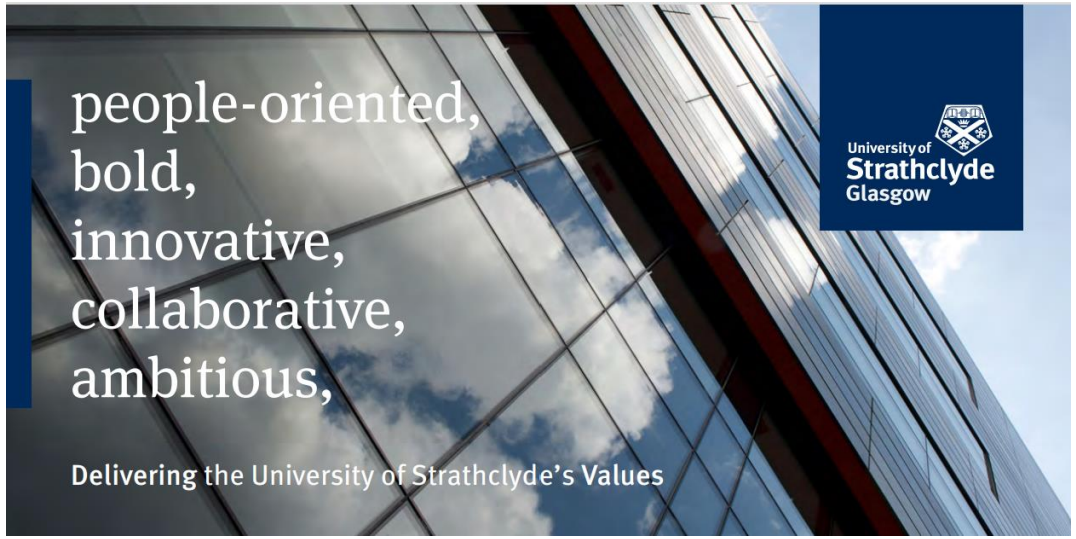
University of Strathclyde Glasgow

the ENGINEERING ACADEMY

The Engineering Academy – increasing access to engineering and enhancing the learner experience through collaborative partnerships.

Dr Gordon Flockhart – Academic Director

Mr Alan Roseweir – Associate Director



University of Strathclyde Glasgow

60

Royal Charter since 1964

Useful Learning since 1796

Outline

- Vision and Aims
- Funding Model
- The Partnership
- Curriculum Model
- Added Value
- Industry Engagement
- Q&A

Vision

Aims

- To widen access to engineering
- To collaborate with further education colleges
- To build a strong sustainable partnership model
- To secure additional funding to deliver our vision

Strathclyde Vision 2030

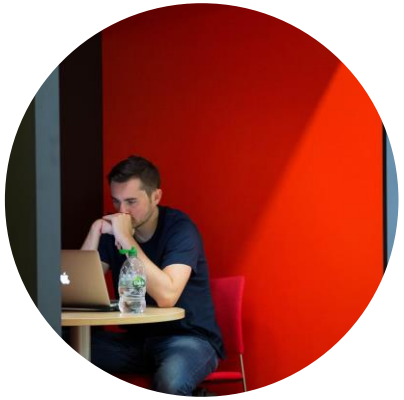
Strategic aim 1.2: Widening access & participation

We are committed to boosting our support of widening access, participation, inclusion and diversity, being sector leading amongst research-intensive universities. We do this by developing and supporting our students from all backgrounds to realise their potential through the education and student experience we provide across all levels of study.

https://www.strath.ac.uk/engineering/studywithus/engineeringacademy/

What is the Engineering Academy?

- Unique access route into University
- Working in partnership with colleges
- Year 1 – enhanced HNC + practical skills units
- Year 2 – transfer to second year* of one of our degree programmes offered by 7 of our engineering departments
  (*transfer to first year for Biomedical Engineering)
- Supported by industry
- Scholarships and paid summer placements



Engineering Academy (EA) - College Partner Funding Model

First 4 years (4 intakes) – **80 places initially which increased to 100**

Funding components - Figures used for illustrative purposes only

- Scottish Funding Council (SFC) Group price (2/3) £9000 circa. per student.
- Students Awards Agency Scotland (SAAS) £1285 circa. per student.

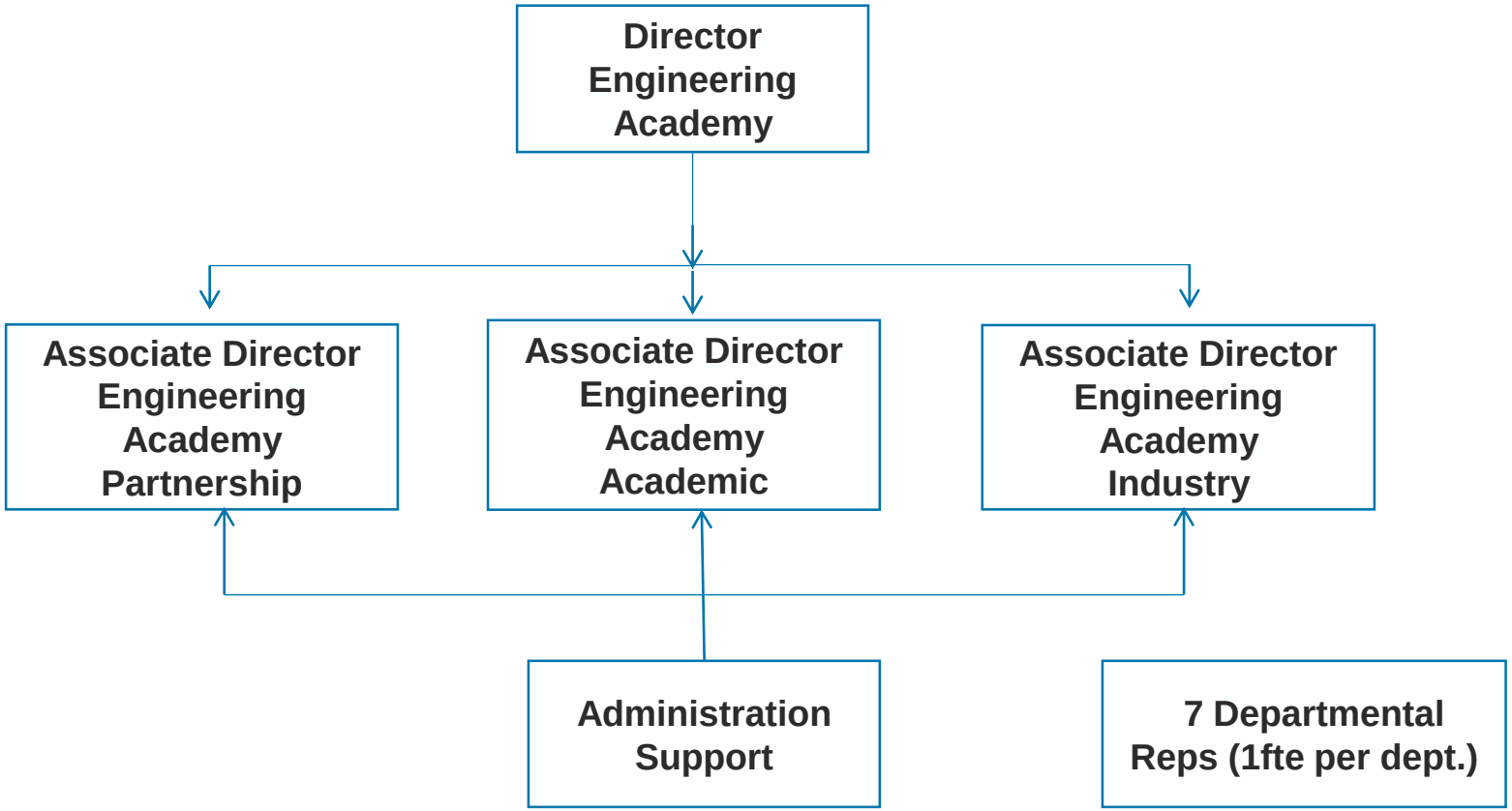
- College Partners receive 75% of the fee £6750, (Minus the SAAS element) = £5465 per capita payment.
- College partner registers each student for SAAS element £1285.

- **Total income received by the Partner College (£5465 + £1285) = £6750**
- **University retains (Administration) 25% of SFC funding £2250**

Additional SFC funding ended in 2016. EA funding for 2017 onwards is funded from the university using the same model.

Management Structure

the ENGINEERING ACADEMY



Partnership Operation

- Partnership Management Meetings - 2 per year, Status report presented at December meeting.
- Partnership collaborative agreement in place.
- Data sharing agreement in place.
- College visits – 1 per semester
- Attendance reporting – Monthly for partner colleges
- Progress reporting – 2 per semester from partner colleges
- Final reporting – Progression Board (June).

Working Groups	Membership (Chaired By Associate Director EA)	Activity
General Engineering • **Biomedical Engineering** • **Civil and Environmental Engineering** • **Design, Manufacture & Engineering Management** • **Mechanical & Aerospace Eng.** • **Naval Architecture, Ocean and Marine Engineering**	Lecturing staff in the discipline areas from the university and the college partners	Identify curriculum 'Hot Spots', curriculum review (year1), share materials via university VLE and identify joint staff development opportunities.
Electronic & Electrical Engineering	As Above	As above
Chemical Process Engineering	As above	As above
Mathematics	As above	As above
Communication	Departmental Representatives and college communications lecturers	Integration of university transition student project reports for formal SQA assessment purposes.
Schools Liaison	College partners schools liaison staff	Operational partnership working to engage with schools, especially low progression schools.

The Partnership

City of Glasgow College

Glasgow Kelvin College

Ayrshire College

Forth Valley College

University of Strathclyde Glasgow

West College Scotland

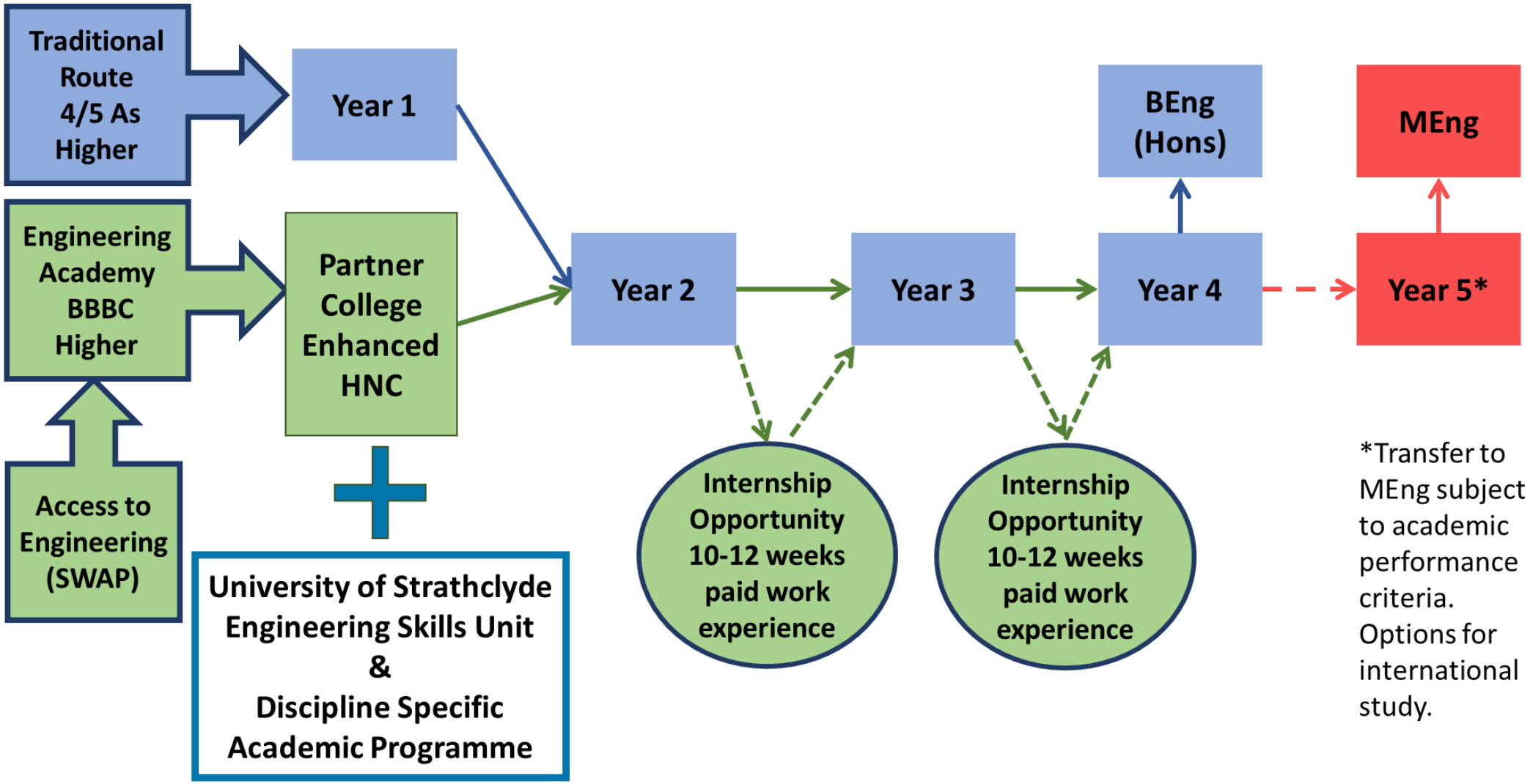
Glasgow Clyde College

SWAP Scottish Wider Access Programme

New College Lanarkshire

Scottish Funding Council
Promoting further and higher education

Engineering Academy Pathway



*Transfer to MEng subject to academic performance criteria. Options for international study.

Engineering Degrees

Pathway to one of the following Faculty of Engineering Departments:

- Biomedical Engineering* (Year one)
- Civil and Environmental Engineering
- Chemical and Process Engineering
- Design, Manufacture and Engineering Management
- Electronic and Electrical Engineering
- Mechanical and Aerospace Engineering
- Naval Architecture, Ocean and Marine Engineering

Enhanced HNC Curriculum

Embedded HNC Mechanical Engineering Award	
H7MB34 (M)	Communication: Practical Skills
HK033 (M)	Engineering Mathematics 1 - CREDITED
DT8Y34 (M)	Quality Management: An Introduction
DR3L34 (M)	Engineering Principles
DT4634 (M)	Materials Selection
DRIT34 (M)	Statics and Strength of Materials
DT9P34 (M)	Thermofluids
DT9T34 (M)	Dynamics
DT9X34 (M)	Pneumatics and Hydraulics
DV1134 (M)	Graded Unit 1 Examination
DR1W34	Engineering Drawing
FY9E34	DC and AC Principles
DR3M35	Design for Manufacture
DR1X34	Computer Aided Drawing for Engineers
H7K1 34	Engineering Mathematics 2
H7K2 34	Engineering Mathematics 3
H7K3 35	Engineering Mathematics 4

Allows Progression to BEng Hons in:

Biomedical Engineering

Civil Engineering

Civil & Environmental Engineering

Product Design Engineering

Manufacturing Engineering with Management

Sports Design Engineering

Product Design and Innovation

Mechanical Engineering

Naval Architecture & Marine Engineering

Naval Architecture with Ocean Engineering

Naval Architecture with High Performance Marine Vehicles

Enhanced HNC Curriculum

Embedded HNC Electronic Engineering Award	
H7MB34 (M)	Communication: Practical Skills
HK0 33 (M)	Engineering Mathematics 1 - CREDITED
FY9E34 (M)	DC and AC Principles
DG3N34 (M)	Electronic Testing Skills
FY9T34 (M)	Analogue Electronic Principles
DG3C34 (M)	Combinational Logic
DG5334 (M)	Sequential Logic
DG5834 (M)	High Level Engineering Software
DG2T34 (M)	Graded Unit 1 Examination
DG3G34	Electrical Networks & Resonance
DG2W35	Active Electronic Circuits
H7K1 34	Engineering Mathematics 2
H7K2 34	Engineering Mathematics 3
H7K3 35	Engineering Mathematics 4

Allows Progression to BEng Hons in:

Electronic and Electrical Engineering

Enhanced HNC Curriculum

Allows Progression to BEng Hons in:

Chemical Engineering

Embedded HNC Chemical Process Technology Award	
H92X 34 (M)	Fundamentals Chemistry: Theory and Laboratory Skills
H92Y 34	Inorganic Chemistry: Theory and Laboratory Skills
H933 34 (M)	Organic Chemistry: Theory and Laboratory Skills
H936 34 (M)	Physical Chemistry: Theory and Laboratory Skills
HF0K 34 (M)	Chemical Process Technology Graded Unit 1
H97N 34 (M)	Chemical Engineering: Principles
HE3E 34 (M)	Fluid Mechanics: Theory and Laboratory Skills
HE3F 34 (M)	Process Safety Engineering
H97T 34 (M)	Heat Transfer: Theory and Practical Skills
HE3J 35	Process Operations: Heat Exchange, Drying and Evaporation
HE3G 34	Industrial Chemicals: Processes and Products
HK0 33 (M)	Engineering Mathematics 1 - CREDITED
H7K1 34 (M)	Engineering Mathematics 2
H7K2 34	Engineering Mathematics 3
H7K3 35	Engineering Mathematics 4
H7K4 35	Engineering Mathematics 5

Practical Units	
AY1904\01	Start Up and Shutdown a Process System
AY1A04\03	Monitor a Process System
B5K904\03	Contribute to the Health and Safety of the Working Environment

Engineering Skills Laboratory

- In-depth practical skills training in year one of the programme
  - SQA Double Unit: Engineering Skills DR1V 34
  - 88 Hours of hands-on laboratory training
- Delivered at the University
- Supported by experienced technical staff

Department Transition Activities

Aims:

- Build sense of belonging
- Develop study skills
  - Independent learning
  - Report writing
- Academic content
  - Curriculum gaps
  - University software packages

Industry and Placements

- Opportunity to apply for paid summer placements for Engineering Academy Students only
- Placements – between years 2 & 3 and 3 & 4
- Examples of previous partners:

  BabCock Marine & Technology,

  GeoSea DEME,

  MWAVES,

  SPT and

  Star Refrigeration


DEME
OFFSHORE


PEAK
SCIENTIFIC


babcock™


SPIRIT
AEROSYSTEMS


Allied
Vehicles™


ALEXANDER
DENNIS


Wabtec
CORPORATION

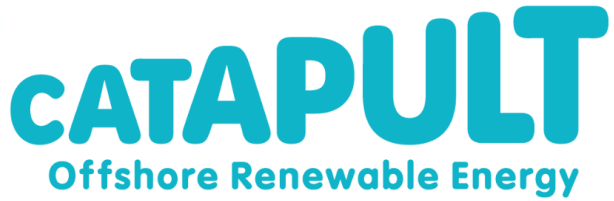

Castle


STAR
REFRIGERATION


FiFab
Making the difference


GLENMORANGIE


AWD 2.0
ALANWHITEDESIGN


CATAPULT
Offshore Renewable Energy


Cummins

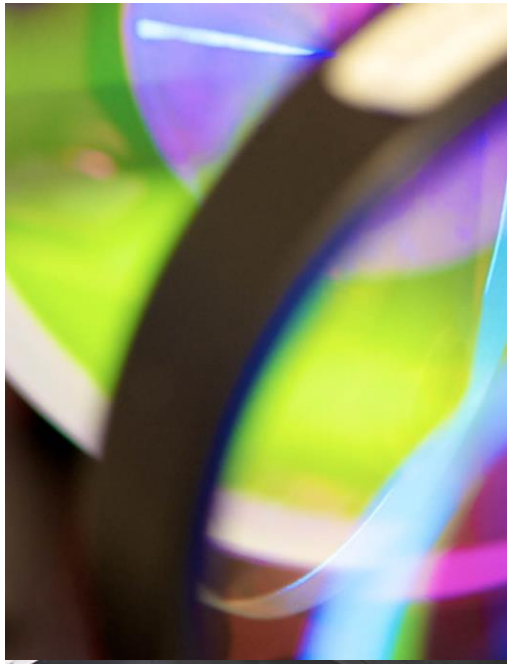

DIODES
INCORPORATED

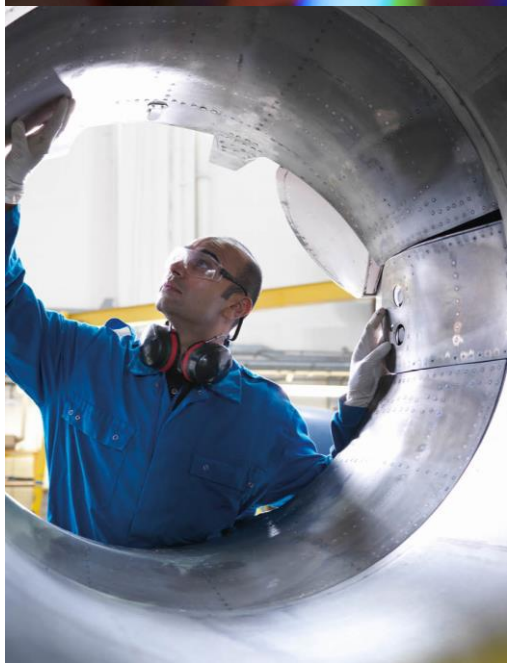

BAE SYSTEMS


VITAL
ENERGI

Admissions & Entry Requirements

- Apply through UCAS direct to the University
  (no need to also apply to college)
- Typically remain open after the standard UCAS deadline
- Standard entry requirements **BBBC**
  (Including Maths and Physics/ Engineering Science at B. For entry to Chemical Engineering, Higher Physics is not required but Higher Maths and Higher Chemistry at B are required, and for entry to Biomedical Engineering, Higher Biology or Human Biology at B is also required.)
- Applicants with one or more widening access flag will be eligible for lower offer and the minimum is **BBCC**
- Alternative qualifications, including Access programmes, also accepted





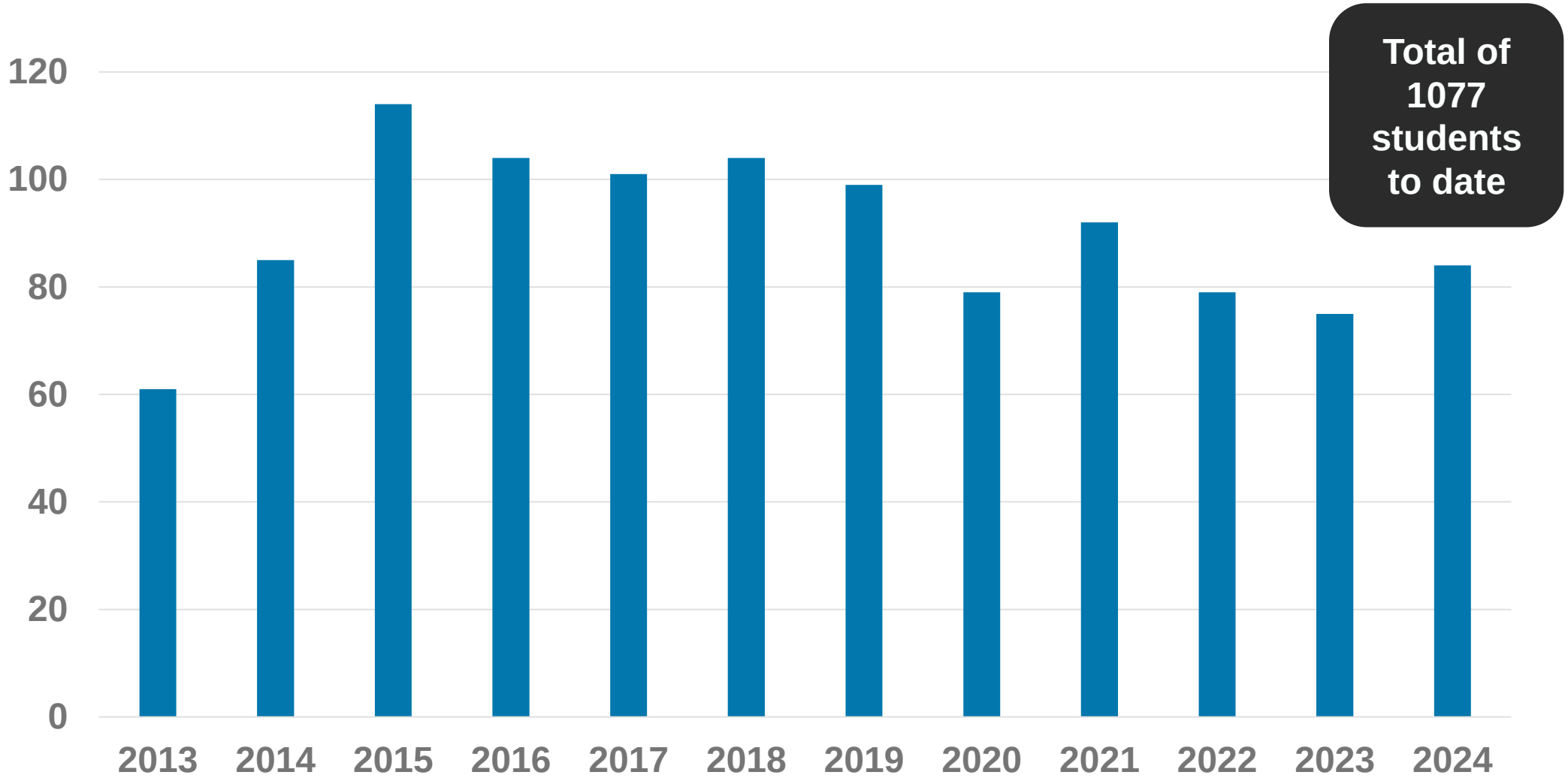
Progression from Year 1 to Year 2

Academic regulations for progression.

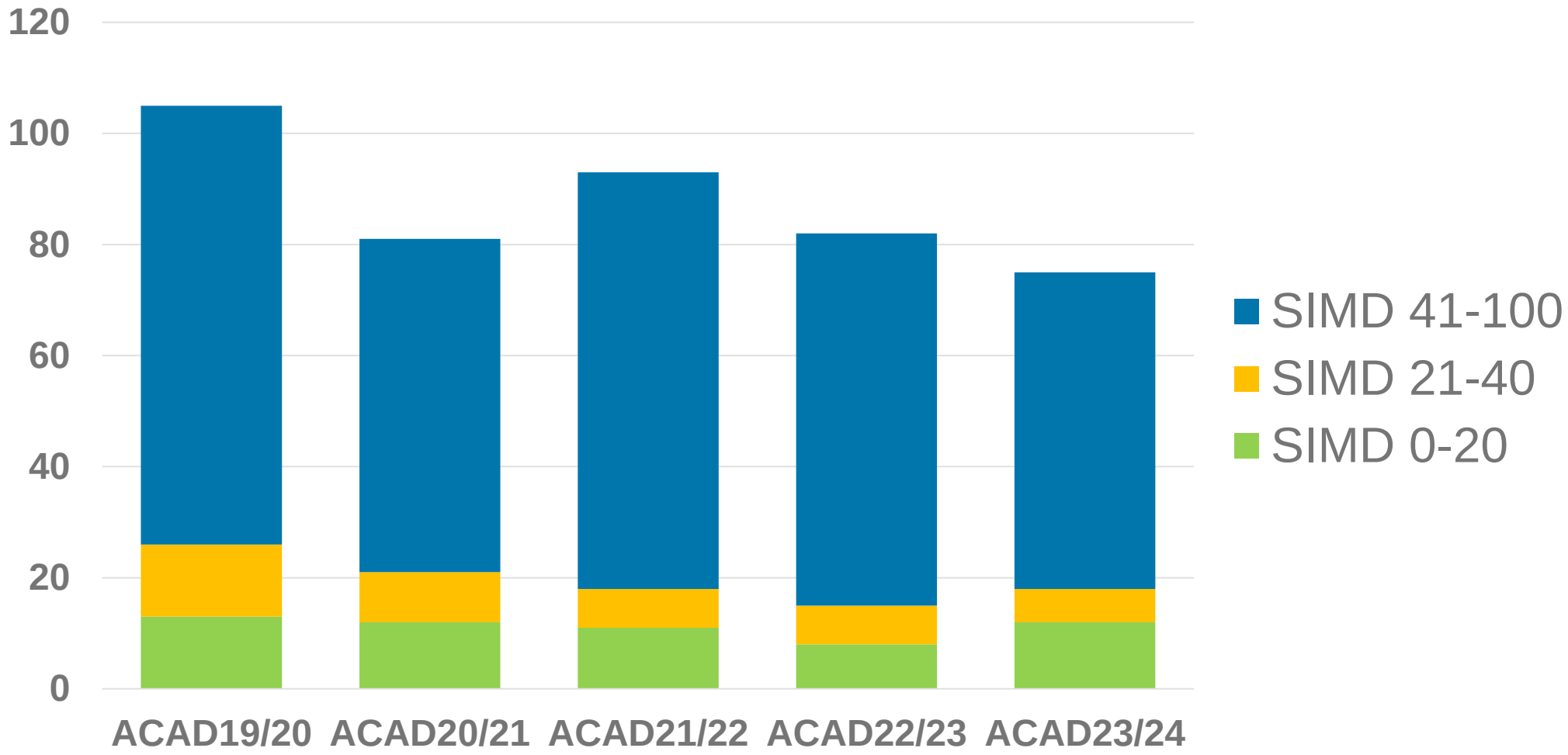
- Complete and pass all of the units of the HNC curriculum and obtain an A in the Graded Unit
- Attend and complete Engineering Skills DR1V34*
- Attend and complete all activities delivered at the University during year 1

*Except Chemical and Process Engineering

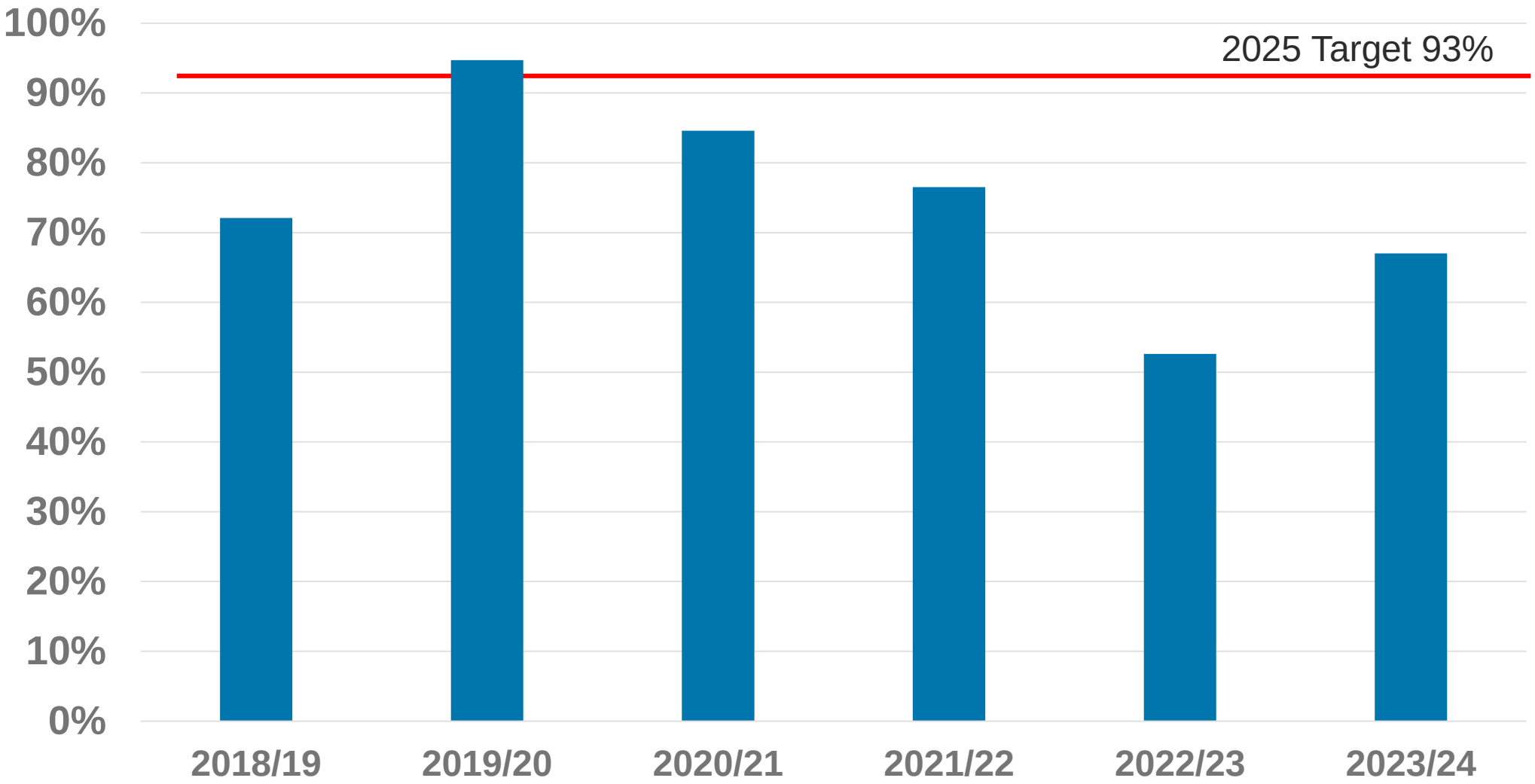
Engineering Academy Intake



Engineering Academy Widening Access



Progression Rate



Challenges

- Awareness/Marketing
- Communication
  - Student and college partners
- Student-college allocation
- Timetabling
- Year 1 to Year 2 progression rate
- Student retention - Year 2 onwards
- Industry engagement

Highlights

- Scottish Funding Council –

“ The Engineering Academy has exceeded all expectations” CEO SFC 2017

- Winner 2017 Scottish Qualification Authority (SQA) Star Awards:

Partnership of the year and Highly commended for Widening Access.

- EA Student won the Telegraph STEM UK Award, cheque for £25k (2017)
- 166 Graduates at BEng Hons & 13 BEng Ordinary
- 130 Graduates at MEng

Summary

The Engineering Academy programme provides the following advantages/opportunities:

Supported transition to University study

National qualification in year 1 (HNC)

Paid work placement opportunities

Scholarships/sponsorships

Practical skills development

Acknowledgements

Any questions for us?

Engineering Academy Website

Contact us: engineering-academy@strath.ac.uk