

HEA Funded

EMPLOYERS

SURVEYED:

GE Aviation

Airbus

Delphi

Broadcom

Infineon

Intel

Zircon

Aepona

Hewlett Packard

Stirling Dynamics

Ultra Electronics

PROJECT OUTLINE

To what extent do the electrical and mechanical engineering degrees provide opportunities for students to develop the 5 soft skill areas we are investigating?

Meet The **Employers**

Soft Skills Investigated:

Communication, self-management, team work, problem solving & commercial awareness

Questions:

How might each of these soft skills be assessed during each stage of the selection process?

Can you offer examples of how these soft skills have been successfully evidenced by applicants?

evidence examples. Common themes were discussed

communication at application and interview stages of both

Student Led Employability Audit of Engineering Degrees

Project Team



Employers

Speak!

The results of the employer survey relating to the 5

soft skills we are investigating fed into a matrix of

such as the requirement to draw on group projects

experience and the key importance of effective

individual and group problem solving activities.



Maja 2rd Year **Mechanical Students**

Module Audit

Two spreadsheets were drawn up:

electrical engineering and the key skill development

opportunities were analysed module by module.

Each module was considered in

turn asking:

Are there opportunities to develop this skill area already? If so

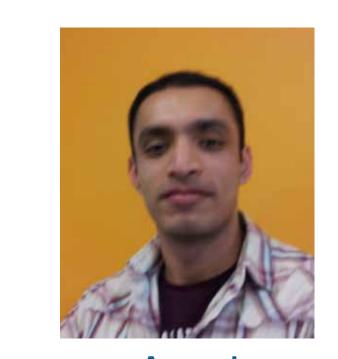
could this be improved?

If not, could there be opportunities? If so what might they look like?

one for mechanical and the other for



Kelly



Asad **Electrical Student**



Marwan **Electrical Student**



Adele

Careers Consultant

OUTCOME: MORE EMPLOYABLE GRADUATES

Mirror workplace practice and build commercial awareness through cross e.g. involve business and computing students as well. Ensure report formats

mirror those used in industry.

'I WANT TO BE A... Mechanical engineer

Ensure every

team member gets

an opportunity to

present by making

involvement

compulsory.

SURVEY QUOTES

"The employer wanted me to give examples where for instance I had worked in a group and a problem had occurred, what we did and what the outcome was." "Employers at the fair pointed out that an engineer could have all the skills and ideas in the world, but if they can't communicate it to other people then it doesn't matter." "When discussing various tasks and/or activities, candidates should follow the STAR (Situation, Task, Action, Results) methodology in their description."

"Candidates are assessed on their conversational ability, whether they are active listeners as well as speakers, and if they interrupt other candidates."

Electrical & Employability Engineering Mechanical **Employers Awareness** Professional **Electrical & Mechanical Engineering Degrees** Part time Problem Technical Project Soft Skills Teamwork Oral **Physics** Management Communicatio

Ideal Candidate

For The Job

BLOG QUOTES

"I was surprised to see how often each member of the audit team highlighted a different soft skill for the same module."

"I was talking to the award leader for my course who was asking about what soft skills we were focusing on and if we had already found anything that we felt could be improved. It's great that he is showing an interest in this project. It shows that our findings could make a difference."

Some

Recommendations

- Mechanical L2 group project, give more marks for the management aspect and rotate group roles to ensure more wide ranging experience.
- Draw on real life problems in maths modules.
- Offer distance learning module while on placement to improve understanding of course theory linked to the workplace
- Introduction of a short presentation/demo at the end of each lab class will ensure students not only demonstrate their understanding but also use succinct terminology.
 - Use the logbook format from the IET and IMechE [professional bodies] for group project logbooks.
- Include an economic module to enhance students' business awareness, and understanding of profitability
- Lecturers could facilitate much more technical discussion during the lab sessions, to broaden the group's understanding of the work and improve oral communication skills

Reflections

What they have gained from the project:

By asking employers about specific examples with the five key soft skills, I became more comfortable in talking to big companies, which was helpful for the telephone interview I have just had.

Working as a group in this project with the goal of giving useful recommendations on improving the degrees to include more [opportunities to develop] soft skills, has developed my team

Employers have especially emphasised team working and communication skills, and ironically I feel that these two, especially communications skills, have [been further] developed through this project.

Overall, I feel that this project has increased my employability awareness, and also has made me consider the skills I gain from my degree on another level.

ELECTRICAL STUDENT:

"Being the treasurer of the engineering society, I had to do all sorts of budgets and this opened up the world of estimating costs and timescales, something [missing] from my degree."

"Group Project and Management involved lots of cross-discipline engineering students working together, with the objective of managing and documenting a year-long project. Logbooks were an integral part of keeping records, although no guidelines on observing industry standards were given or implied."



Electrical/ Mechanical Compared

1 Clashing deadlines provide a good opportunity to evidence self-management.

- 2 Group project is marked on team performance and team output, just as in real life.
- 3 Extra marks are given for considering cost-effectiveness in production. 4 In labs students are asked why they did what they did, as
- opposed to simply filling out a worksheet. 5 In programming, tutors give vague answers unless asked very specific questions using the correct vocabulary.

Course	Electrical 30 students	Mechanical 200 students	Both
Oral Communication	There is a let more exclude three path factor as a result. Of the season course and even given planes; and other season course are a season given plane; and a less connected as season with the gift when they this, a represent it is made. There is not a workshore, it may arrow, you've require given a season connect owner, and it was proportionally a require connect owner, and it was proportionally a require connect owner, and it was proportionally a require connect owner, and a require reportion a season connection.	Group (traveler) and if by prompted in life socious.	Many open subjects to response uniformized to which upward procedu- cing control these to obspaces this call in
Self-Management	Use of prime logis to ensure shaharts are managing early.	Desting describes provides a good apportunity to determine unit companient. Unique entrationes progest that the A destine amountages traders to (plus their work effective). In the first provide yellow plus plus companie unit increagement. Use of trader lands in their pair overfeeluncts.	Partitioning Street into growing product and the street street and the street street street and street
Group Project and Team Working	 Excitod challents cannotify have made different opportunities for group expense. Exportantifies to always and reflect on the press disparation with a halot, no exposes under bending and are foreness. 	2 Proup project in tracked on team partie manual and team surput, just as it real life.	Use of Synty (harts a Project management unhause in group projects
Problem Solving	 If required execut to find the assures of a problem on an electrical object thering tales. The use of real title problems a.g. budget alreadow for a private. 	First year training grajest introduces the cur of enaberoday another to later publishes and provide optimizes solutions. Basic or tiles a while to theoretical outpets.	
Commercial Awareness	 Commond segment atterly raught in light year. Eatin make the considering and effectiveness to production. 	Case studies used occapionally as foreign, belong theory to walk lie significations to the group project and dynamics rodume.	Negatives on tag built feeters:

MECHANICAL STUDENT:

"During the first two years of my degree I felt as if quite a few soft skills required by engineering companies were covered. The ability to work to deadlines is taught from day one, in particular at the end of semesters when deadlines tend to accumulate and self-motivation is the only resource to deal with them."





