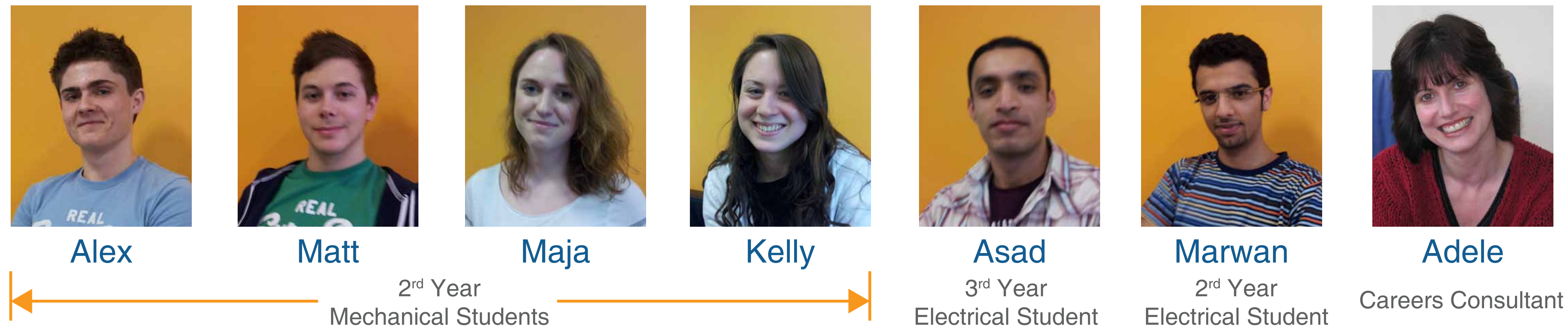


Student Led Employability Audit of Engineering Degrees

Project Team



OUTCOME:
MORE EMPLOYABLE GRADUATES

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?

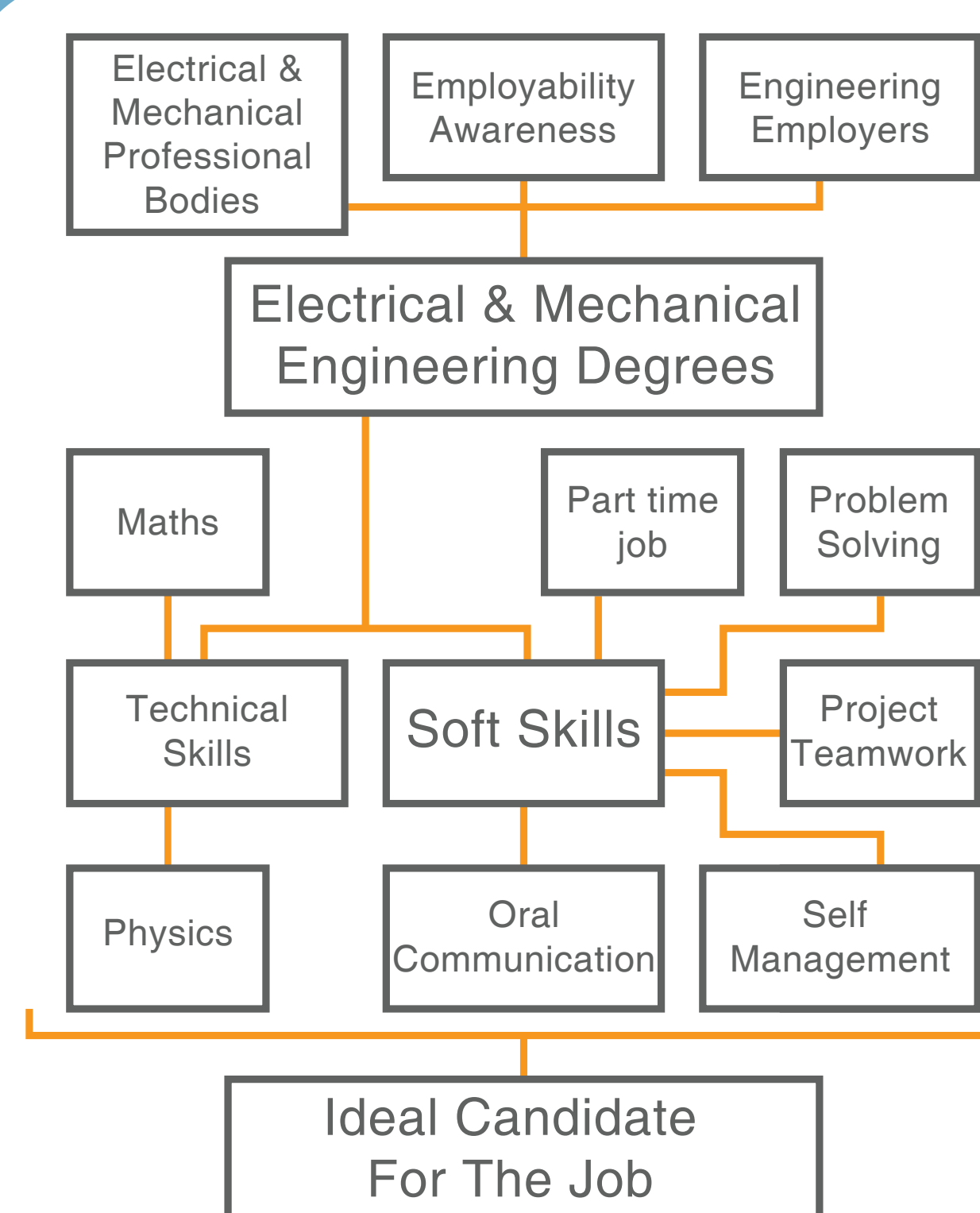
Can you offer examples of how these soft skills have been successfully evidenced by applicants?

EMPLOYERS SURVEYED:

- GE Aviation
- Airbus
- Delphi
- Broadcom
- Hewlett Packard
- Infineon
- Intel
- Stirling Dynamics
- Ultra Electronics
- Zircon
- Aepona

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."



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

- Mirror workplace practice and build commercial awareness through cross disciplinary group projects e.g. involve business and computing students as well.
- Ensure report formats mirror those used in industry.
- 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.

• Ensure every team member gets an opportunity to present by making involvement compulsory.

Employers Speak!

The results of the employer survey relating to the 5 soft skills we are investigating fed into a matrix of evidence examples. Common themes were discussed such as the requirement to draw on group projects experience and the key importance of effective communication at application and interview stages of both individual and group problem solving activities.

Module Audit

Two spreadsheets were drawn up: one for mechanical and the other for 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 here? If so could this be improved?
- If not, could there be opportunities? If so what might they look like?

Electrical/Mechanical Compared

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

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 working skills.

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.

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."

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."

