

Niall MacDonald

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Education

The University of Aberdeen – MEng Chemical Engineering (First Class Expected) 2014 – 2019

- 5th Year: This final year focuses on ethical engineering with courses in pollution control and sustainable engineering as well as computational fluid dynamics and mathematical optimisation courses. The MEng group design project takes place in the second semester requiring the application of all the skills I've learned so far.
- 4th Year: Undertook my individual master's project "Ultrasonic tractor beams for particle manipulation" achieving an A2. This year's courses focused on process control and process safety as well as more complex separation processes and biochemical engineering. **Achieved: 7 As, 1B.**
- 3rd Year: Specialised into chemical engineering with more advanced courses in fluid mechanics and thermodynamics including Heat, Mass & Momentum Transfer. I was part of the top graded design group for Chemical Engineering Design where we designed a Cumene Production Plant. **Achieved: 9 As**
- 1st & 2nd Year: Introduced the principles and basics of chemical, electrical, mechanical, and civil engineering, giving a broad introduction into all the engineering disciplines **Achieved: 11 As, 4Bs and a C.**
- Achievements:
- Awarded a British Petroleum (BP) STEM Scholarship during my second year of university.
 - In my year ranked in the top 10 / 80 chemical engineers and 17th / 273 from all engineering disciplines.

Westhill Academy 2007 – 2013

Advanced Highers: Graphic Communication (A), Chemistry (C)

Highers: Computing (A), Maths (A), Physics (A), Chemistry (A), Graphic Communication (A)

Work-Related Key Skills

Communication:

- I have shown effective communication skills both with the public and staff while working in all my retail roles. It is essential to be clear and concise with communications so that the message is well received.
- At university I have improved my presentation skills while performing numerous group assignments and presentations for which I have consistently been given good feedback.

Problem Solving:

- In my third year of university, I did a project-based course 'Chemical Engineering Design' where in teams we had to design a Cumene production plant from scratch. This was an excellent opportunity to demonstrate my problem-solving skills while coming up with novel ideas for our process plant and solving simulation problems in Aspen Plus.
- I am driven to make things happen and am always problem-solving to find better ways of doing things. I have demonstrated this while writing a report on rating a distillation column. I wrote code to streamline the calculations required for the effective Murphree tray efficiencies of the column, something no one else had done.

Organisation:

- Organising, planning and prioritising workload is something I do on a daily basis. Managing the workload from university, prioritising what is important, while working a part-time job and fitting in socialising.
- Elected Vice President of Aberdeen University Rifle Club during my second year of university which required excellent organisational skills to plan competitions and help the President with any problems that arose.

Team Work and Management:

- I became a STEM ambassador in my third year of university which allowed me, as part of a team, to volunteer at the Aberdeen Science Centre for space week. This involved supervising science activities with primary school children and getting them excited about space and STEM subjects in general.
- Working well on my own initiative and as part of a team is something I continuously do at university. I have done many group projects where I have shown I can work well in a team of new people all with varying skill sets.

Information Technology:

- Helping to solve family and friend's computer problems is a regular pastime of mine. I am very proficient with computers and have started to advance my programming skills as my fourth-year individual project includes a significant amount of python programming and GIT version control.
- Experienced in the following programs: LaTeX, Word, Excel, Visio, SolidWorks, Aspen Suite, Inkscape and ParaView. Can program proficiently in MATLAB and Python, with a basic knowledge of Arduino programming in C.

Employment History

Demonstrator – University of Aberdeen: September 2017 – Present

- I demonstrated for a third-year course, Chemical Engineering Design, during my 4th year and plan to teach again later this year. This role involves answering students' questions and helping them with the tutorial problems every week. This was one of my favourite courses when I was in third year and I am glad I got the opportunity to pass on my passion for the subject. This year I am teaching Heat Mass and Momentum Transfer for the second time, this course is one of the hardest courses at the university, and I am delighted that I was chosen to be a demonstrator to pass on my knowledge of the subject to the year below.

Process Engineering Intern – Chrysaor: June 2018 - August 2018

- Developed a strategy for upgrading Chrysaor's PI System to the latest version including developing their asset framework to hold the live process data in an easy to navigate hierarchical structure as well as producing over 40 live process visualisation displays in PI vision. I was also involved in scribing for numerous HAZIDs and HAZOPs including their report writing, simulation of Armada's process to improve its OIW (oil in water) results, producing calculation sheets for flare nitrogen purging for all Chrysaor's platforms, creating an easy to use blowdown results tracker allowing for easy year on year comparisons as well as many other side projects.

Carnegie Vacation Research Scholar – The Carnegie Trust: June 2018 - August 2018

- Continuing my individual MEng project throughout the summer on the ultrasonic acoustic levitator. Learning electronics and circuit design as well as developing my programming skills were a major part of this project. I also started a group for likeminded engineering students who are interesting in practical programming which had six members and allowed us to help each other and work together on interesting projects during the summer.

Team Leader - Cooperative Foods Group: July 2014 – February 2018

- Managing a small team of up to five staff and making sure everything runs smoothly is my primary role. Organising the work of the Customer Team Members and making sure everyone is clear about what they're doing and 100% focused on delivering excellent customer service. Conducting small meetings to relay messages to staff and listen to their concerns is something I do most weeks. I am responsible for sales, standards and the availability of products as well as securing the store at the end of the day.

Customer Assistant - Marks and Spencer: November 2012 – August 2013

- Cooperative Foods Group: November 2011 – December 2012

- Maintained stock levels on the shop floor, offered high-quality customer service to the public and ensured that the presentation of the shop was kept to a high standard.

Short Jobs

Door to Door Sales - Aussie Farmers Direct: October 2013 - December 2013

Volunteer - Community Foods Initiatives North East (CFINE): July 2011 and August – September 2015

Interests:

- I enjoy swimming and hillwalking which helps me to keep fit. I also play the guitar to unwind.
- I like keeping up to date with global news and economic issues by reading news articles and blogs.
- Expanded my cultural and economic views while travelling to over 10 countries in 9 months after my last year of school. Throughout this period, I gained valuable transferable skills, from demonstrating my ability to work well within a team to integrating respectfully with a variety of cultures. I improved my negotiation, budgeting, communication and confidence skills while living away from home for such an extended period.
- While in Australia I became a certified Advanced Open Water Diver which was one of the best experiences of my life. It taught me the importance of working as a team in complicated and dangerous situations, to deal with problems underwater and not only have an enjoyable time but keep each other safe. Invaluable skills which I will be able to apply throughout my career.
- Institution of Chemical Engineers (IChemE) – Student Member since my first year of university.