

Engineering Gateways - case study

HEI name: Northumbria University
Employer: Magnox North, Chapelcross Site
Student name: Gavin Hutchinson
1. Individual workbased student Please provide: (maximum 500 words) <ul style="list-style-type: none">• What attracted you to the programme?• Name of any academic qualification already held• Summary of the key benefits in undertaking the programme• Explanation of the impact of the programme on your professional aspirations
<p>I was attracted to this programme for a number of reasons, to advance my knowledge and understanding in Engineering, to develop new professional skills to a high level and to also gain a Masters degree in the view to becoming a Chartered Engineer.</p> <p>The programme is ideal for my personal situation (2 children to look after) and my professional situation as the programme is 100% work based. The modules in the programme are tailored to my work activities which I carry out on a day-to-day basis, this helps me identify what my learning needs are for me to improve in my ability as an engineer.</p> <p>This degree is unique in its approach to learning as my engineering knowledge is enhanced through actual work and assignment based activities. This degree makes you realise what your strengths are and ensures that your weaknesses are improved through various means of analysis.</p> <p>I have the following academic qualifications:</p> <ul style="list-style-type: none">• PGCE Engineering Education from the University of Sunderland (2005 – 2006)• BEng (Hons) Computer Aided Engineering from Northumbria University at Newcastle (2000 – 2004)• HND Mechanical / Manufacturing Engineering from Newcastle College (1998 – 2000) <p>The key benefits to me from undertaking this programme are to successfully complete the Masters programme and to become a Chartered Engineer through IMechE.</p> <p>This course has encouraged me to undertake self directed learning to improve my engineering knowledge outside of the workplace e.g. reading literature. My abilities will be more recognised within the work place as a Professional Engineer from completing the programme. The opportunities that this course has given me in the work place are the chance to work in plant areas which I may have not considered as added value to my career but have since acquired the benefits.</p> <p>The completion of this programme will open up more career opportunities for me within the Nuclear industry as my skills, experience and knowledge will be more desirable.</p> <p>The impact that the programme has on my professional aspirations has been positive, so far I have gained more learning than anticipated. This course has enabled me to take on challenges for the benefit to Chapelcross for my career. The assignments completed for the modules of the programme are structured in a way to bring out the best of what has been learnt, using the module descriptor, from the experience of a completed activity.</p> <p>Are you using an electronic recording system provided by your professional engineering institution? Yes. Institute of Mechanical Engineers (IMechE) Monitored Professional Development Scheme (MPDS).</p> <p>Can the Case Study be published or is it confidential? To be published if required.</p>
2. Employer Please provide: (maximum 500 words) <ul style="list-style-type: none">• Overview of type and size of company• Summary of the work-related activity/projects contributing to the MSc Professional Engineering• Statement about how the MSc PE student's work has impacted on the business• An indication of when the benefit / impact occurred, including appropriate indicators

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Chapelcross Site is located within four miles of the Solway Estuary, is a four-reactor station with eight 30 MW turbines now undergoing early decommissioning. At full power when operational, the station produced enough electricity to supply every home in South West Scotland, the Borders and Cumbria.

Magnox North is the management and operations contractor responsible for the day-to-day operation of the site under contract to the Nuclear Decommissioning Authority.

Location: Dumfriesshire

Nearby towns/cities: Annan (3km), Carlisle (28km)

Site area: 92 hectares

Approximate number of current employees: 418

The Projects contributing to the MSc PE are as follows:

- Ponds Decommissioning Project
- Reactors Domestic Steam Heating Reconfiguration
- Reactors Domestic Water Supplies
- Asbestos Removal Project
- Reactor 1 & Reactor 2 Dry Riser Repair
- Turbine Hall Crane & Blower House Crane repair
- Heat Exchanger Project

The work activities contributing to the MSc PE as follows:

- Safety Engineering Walkdowns / Observations
- Production of Technical Specifications
- Production of Plant Modification Proposals
- Production of Quality Plans
- Production of Engineering Technical Department Notes
- Production of Safety Papers
- Production of Risk Assessments
- Production of Heat Exchanger Inspection reports (main shell, tube banks, economisers)
- Production of Cooling Circuit (bottom & top ducts / bellows units) walkdown reports
- Plant Maintenance activities (oil separators, calorifier)
- Risk Reviews
- HAZard and OPerability (HAZOP) studies
- Directed reading of Work Instructions
- Training courses
- Attending meetings & workshops

The MSc PE work produced by Gavin has been substantial with a positive impact on the business regarding quality of work.

The indication when this impact occurred was earlier this year (2010) when he requested for more responsibility in Engineering. He expressed that he would benefit a great deal from an opportunity in a major Project to widen his Engineering knowledge and to have more of a responsible / lead role within the Project. Not only this opportunity benefits the company, it also benefits his MSc PE course and further develops his competency as an engineer to potentially become a Chartered Engineer.

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3. University

Please provide: (maximum 500 words)

- Brief overview of how this case study partnership was initiated
- Summary of the key benefits to the academic and the institution
- Details of any specific outputs a. from this partnership
b. generally of being an Engineering Gateways academic institution

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This case study partnership was initiated when Gavin Hutchinson approached the university to apply for the MSc Professional Engineering programme. I interviewed Gavin for a place on this programme and was happy to accept him into the programme. This acceptance was based on Gavin's academic potential as well as Gavin's employer's potential to provide him with appropriate projects to engage with this MSc programme.

Key benefits currently experienced by the academics are detailed procedures and engineering tasks carried out plus potential hazards faced in decommissioning a nuclear power plant. The institution has benefitted through recognition by being associated with the decommissioning of work carried out at the Chapelcross Site.

As Gavin is still in his first year of the MSc programme it is too early to detail any specific outputs from this partnership. Northumbria University has greatly benefitted by being an Engineering Gateways academic institution by gaining the recognition of being one of the pioneering universities to develop and promote the innovative work based route of potentially gaining an MSc qualification and CEng registration in one sitting.

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