Photonics Academy: TOPS project

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This paper is freely available as a resource for the optics and photonics education community.

- Nick Tyson – Head of Faculty - Engineering & Built Environment
- Vicky Barwis – Marketing and External Funding Manager
- Faris Maghuk - Technician
Overview of the Session

• Introduction to the project (VB)

• Overview of Engineering at Deeside College & Modern Apprenticeship delivery options. (NT)

• Course Content Technician programme (FM)

• Any Questions
Technicians in Opto-Electronics Project

• Funded By the Welsh Assembly Government and run by the photonics academy 2006-2009

Main Aims:

• Development of a Technicians Course
• Marketing to young people
• Leadership and Management Sessions
Targets:

- Develop and pilot training with at least 10 learners.
- Implement a Marketing Plan.
- Raise awareness of the sector with young people to increase new entrants into the sector.
- Engage Employers in Development.
- Provide information on leadership and management.
Engineering & Manufacturing Technologies @ Deeside College

- Management Team: HoF; 5 x PAMS; Work-based Supervisor.

- Staff: 26 lecturing staff; 22 Technical Training Officers; 4 Instructor Demonstrator, 5 Assessors; 4 Admin.

- Programme Areas: Aerospace; Mech/Elect; Fab & weld; Motor Vehicle.

- A team of dedicated Staff employed to support Photonics and Optoelectronics training
Deeside College – Photonics lab
Apprenticeship Frameworks:

- **Foundation Modern Apprenticeship**
  - Knowledge Based Element.
  - Technical Certificate @ L2
  - Competence Based Element.
  - NVQ @ L2
  - Key Skills @ L1 & Employer Responsibilities

- **Modern Apprenticeship**
  - Knowledge Based Element.
  - Technical Certificate @ L3
  - Competence Based Element.
  - NVQ @ L3
  - Key Skills @ L2 & Employer Responsibilities

- **Photonics Apprenticeship**
Example 1: Photonics
Modern Apprenticeship

Yr 1  September 2009  Apprentice attends Deeside College on a Full Time Basis to complete an NVQ L2 and a Technical Certificate L3

Yr 2  September 2010  Apprentice based in Company ‘A’ and commences NVQ L3. Apprentice attends college on a day release basis to complete Technical Certificate L3

Yr 3  September 2011  Option: Depending on company requirements. Apprentice can continue @ college to complete HNC/Foundation Degree

Yr 4  September 2012  Completion of NVQ L3 and Modern Apprenticeship. (1 additional year to complete HNC/Fd – June 2013.)
Apprenticeships:

"Industry owned and led, SEMTA aims to increase the impact of skilled people throughout the science, engineering and manufacturing technologies sectors".
Example 2: SEMTA Sponsored Pilot Scheme Shared Modern Apprenticeship (Follow same training pathway as example 3)

Primary Company
1) Responsible for main training of apprentice.

Apprentice

Secondary Company
1) Fill in the gaps in the appropriate apprentice training

Skills Transfer
Learners on a National Award programme complete a unit in the Principles of Photonics at the Optics Technium at St. Asaph. Photonics is the science of generating, controlling and detecting photons. It is closely related to the optics industry and controlling the particle properties of light. Learners work with a world-leading organisation in this advanced technology. They attend lectures and complete practical activities in photonics to a very high standard. This unit of study is the first of its type in the UK. *(Estyn, Her Majesty’s Inspectorate for Education and Training in Wales  October 2008 Deeside College)*
TOP’s Project to date – what have we achieved?

- Extended existing provision by Deeside
- Content of delivery driven by local need
- New ‘Photonics Engineering’ pathway through existing framework
- New/existing level 3 NVQs in photonics
- Technical Certificate (BTEC) for underpinning knowledge including units of Photonics.
TOP’s Framework

- Support in delivery given by Ray Davies - Optic
- TOPS will develop much needed workplace skills
- Assessments via *practicals* and assignments
Recap:

- Technician Training available now
- Allow companies to up skill and grow
- Fills a much needed training gap
- Employers to take up the offer!
- 7 Apprentices and 50 FT students to date.