

Teaching Sustainable Development

The Newcastle Experience

Professor Jeff Hulse

The Newcastle Experience

- Background
- Benchmarking
- Lectures
- Questionnaires
- Case Studies
- Feedback
- Future Plans

Background

- Royal Academy of Engineering
- Visiting Professors Scheme
- Newcastle University
- Jeff Hulse.....
- Chemical Engineer
- 40 years in Chemical Industry
- Former Head of Environment Health & Safety.....BASF.

Benchmarking

- Test student understanding
- 1st year undergraduates (Chem.Eng)
- M.Sc &M.Eng Level
- Other subjects
- Glossary of terms
- Define priorities

GLOSSARY OF TERMS

Desertification

- The conversion of pastureland and crop land into desert, or the gradual enlargement and encroachment of deserts into formerly marginal arid lands; caused by climatic factors such as prolonged drought and by overgrazing and overcultivation.

QUESTIONNAIRE 1.

- We need your help.....to improve in future.
 - First lecture.
 - 1.Key Sustainability Issues
 - 2.What are we doing about it?
 - 3.Balancing Economic,Environment and Social issues.(The Triangle Model)

QUESTIONNAIRE 2.

- Second lecture.....
 - 1.Risk Communication
 - Perception is Reality
 - Trust and Credibility
 - Good Communication Skills
 - 2.Media and Community Relations
 - Teesside Examples

QUESTIONNAIRE 3.

- Third Lecture...
 - 1. Stakeholder Analysis
 - 2. Product Stewardship
 - 3. Ethical Responsibilities

CASE STUDIES

- Household Detergent (Product)
- Byker Incinerator (Social)
- Sludge disposal (Process)
- Risk management (Social)
- Waste Water (Design)
- Refrigeration (Design)
- Transportation (Design)
- Bran Sands (with Surrey)

Report and Assessment

- Write a report inc....by....
- The minutes of your meetings
- A short outline of your group's position(1 side of A4).
All groups except Local Newspaper who do a Press Release.
- An assessment of the role they played in the workshop viz.Methods and principles of Sustainable Development. A critical appraisal of how the groups case and proposed actions leads to a more sustainable solution.

Learning Outcomes



- Stakeholders
- Decision making
- Working in a Group
- Presentation
- Trust&Credibility
- Communication
- Balance Ec/Env/Soc issues

Phase 2 plan.....

- Strand 1.

- Add value to Teaching Materials by developing a web-based SE portal to include.....
 - Teaching materials and Case Studies
 - Course outlines for customised syllabuses
 - Examples of best practice
 - Quizzes on Sustainable Engineering
 - Self-assessment benchmarking

Phase 2 plan.....

- Strand 2.
 - Promotion of Sustainable Engineering thru'
 - Engagement of other departments
 - Use Case Study and Best Practice examples
 - Support existing networks in VP scheme
 - Give public presentations to promote Sustainable Engineering
 - Encourage and involve young researchers

Targets for 2003

- Web-enabled Case Studies, Teaching materials and information.
- Distance learning Case Study packages.
- Additional Case Study material.
- Transfer of material to other departments.
- Network of SE practitioners
- Promotional public presentations
- Transfer of expertise.