

ES2D9-15 Technology in International Development

20/21

Department

School of Engineering

Level

Undergraduate Level 2

Module leader

Modupe Jimoh

Credit value

15

Module duration

10 weeks

Assessment

100% coursework

Study location

University of Warwick main campus, Coventry

Description

Introductory description

ES2D9-15 Technology International Development

[Module web page](#)

Module aims

The aim of this module is to examine technology and engineering projects in the context of disasters and international development. It will look at the relationship between international development, disasters and conflict and the impact that technology and engineers can have in these situations. There will be an introduction to the principles and realities of working in international development and the disaster sector and an insight into working in the field examining technological choices in areas of concern including: water, sanitation, energy, food, transport, building, waste and information technology. It will also review how groups of engineers in disaster situations form teams and operate at maximum capacity in times of stress and under pressure.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Introduction: The nature of International Development, Human Development and the UN Sustainable Development Goals.

Basic concepts : Economics; Sustainability; Livelihoods; Development; Productivity

The relationship between International Development, Disaster Management and Technology Management.

Current technologies: A round-up of technologies used for production of goods and services in low-income countries and in disaster situations.

Technology choice: The use of economic and other criteria to choose and design technologies appropriate to their use and environment with focus on disaster recovery.

Technical growth: The means of technical change in low-income countries post disaster, the nature of innovation and its risks and rewards, change agents and the nature of growth changes.

Examples/ illustrations: Examples and case studies will be taken from the areas of: water, sanitation, energy, food, transport, building, waste and information technology.

Learning outcomes

By the end of the module, students should be able to:

- Demonstrate a detailed knowledge of the relationship between international development, human development, UN Sustainable Development Goals (SDGs), disasters and conflict in a global context.
- Evaluate current technologies used for provision of water, sanitation, energy, food, transport, building, waste and information technology.
- Appropriately apply and critically analyse different technological and social choices based on economic, social and environmental criteria.
- Review their own and others strengths and challenges whilst working in a team under pressure and demonstrate an active ability to support and encourage members of their team to perform to their optimum ability.
- Show understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate.

Indicative reading list

"The Bottom Billion", Collier, P., Oxford, 2008.

"Enabling Innovation - A Practical Guide to Understanding and Fostering Technological Change", Douthwaite, B., 2002

"Economic Development", Todaro, M.P., Smith S.C., 2006

Subject specific skills

1. Knowledge and understanding of the need for a high level of professional and ethical

conduct in engineering and the use of technical literature, other information sources including appropriate codes of practice and industry standards

2. Knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk
3. Knowledge of professional codes of conduct, how ethical dilemmas can arise, relevant legal and contractual issues.

Transferable skills

1. Communicate (written and oral; to technical and non-technical audiences) and work with others
 2. Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
 3. Exercise initiative and personal responsibility, including time management, which may be as a team member or leader
 4. Ability to formulate and operate within appropriate codes of conduct, when faced with an ethical issue
 5. Appreciation of the global dimensions of engineering, commerce and communication
 6. Be professional in their outlook, be capable of team working, be effective communicators, and be able to exercise responsibility and sound management approaches.
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Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (7%)
Seminars	10 sessions of 2 hours (13%)
Private study	120 hours (80%)
Total	150 hours

Private study description

120 hours of Guided Independent Learning

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A1

Assessment component	Weighting	Study time	Eligible for self-certification
Group poster including peer assessment Written Examination	25%		No

Reassessment component is the same

Assessment component	Weighting	Study time	Eligible for self-certification
Group project report (4000 words) including peer assessment Written Examination	60%		No

Reassessment component is the same

Assessment component	Weighting	Study time	Eligible for self-certification
Reflective Report 1500 words (individual)	15%		No

Reassessment component is the same

Feedback on assessment

Feedback from poster submission, feedback from report submission.

Availability

Courses

This module is Optional for:

- Year 2 of UESA-H605 Undergraduate Electrical and Electronic Engineering

This module is Option list A for:

- Year 2 of UESA-HN11 BSc Engineering and Business Studies