

#### The Third Training for Real Forum





# Co-operation, competition and co-ordination

#### **Brian Reed** Water, Engineering and Development Centre



# Working together

- Strength in numbers...
- Set standards
- Provide support
- Maintain critical mass

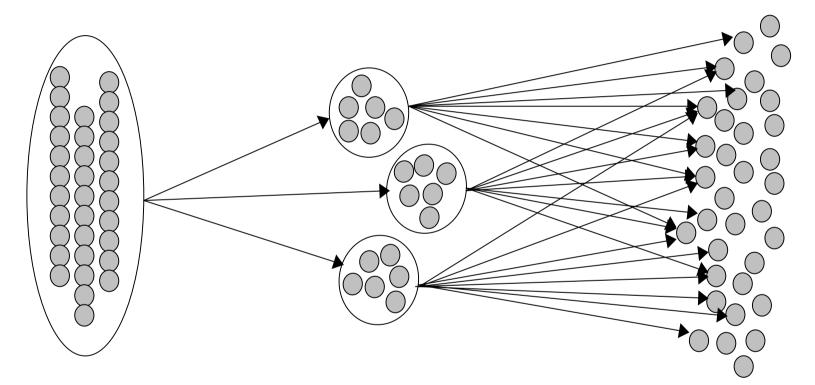


# Working apart

- Limits to funds
- Limits to top students
- Compete for the best
- Choice of options
- Encourage innovation



#### **Centralised or decentralised?**





### What ..... ?

- Can be done together
- Can be done apart
- And how is it managed?





#### Matching supply to demand ~ case studies



### "Training Trend Analysis of Engineers in Faculty of Technology"

Dr. J.B. Turyagyenda, & Mr. Mwesige Godfrey Faculty of Technology, Makerere University



# **ORDER OF PRESENTATION**

- INTRODUCTION
- CHANGES IN CURRICULUM STRUCTURE
- ENROLMENT TREND
- SUPPORT
- LIMITATIONS
- WAY FORWARD



# INTRODUCTION

- STARTED IN **1970** WITH 26
  STUDENTS
- DEPARTMENTS; CIVIL, MECHANICAL AND ELECTRICAL
- 2005/06, 500 STUDENTS
- DEPARTMENTS: SIX (6); ARCHITECTURE,CIVIL,CONT RUCTION ECON AND MANAGEMENT, ELECTRICAL, MECHANICAL, SURVEY
- DURATION: 5, 4, and 3 Years

#### **Programmes**

- **1970** civil, mechanical, Electrical only.
- **2005/06** undergraduate: Arch, Civil, Construction management, Electrical, Land Econ, Quantity Surveying, Telcom, and Surveying.
- Graduate: Dip( urb..Design, Const. Mgt M.Eng; M.Sc. PhD



# CHANGES IN CURRICULUM STRUCTURE/DESIGN

• **1970**:

Preliminary, Part I=2yrs Part II= 2 years

• **1978**:

Term system (I,II,III,&IV)

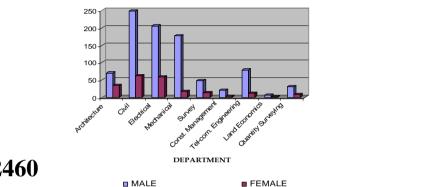
- **1985**: Direct Admission to Disciples
- **1989**: Architecture
- **1990**: Surveying

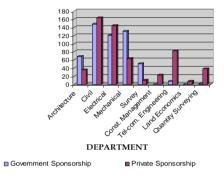


- **1998**: Semester System Introduced
- 2004: Demand Driven New Programmes; Telcom, Quantity Surveying, Land Economics, Construction management

### **ENROLMENT TREND**

STUDENT ENROLMENT BY SEX IN THE DEPARTMENTS-ACADEMIC YEAR 2004/05





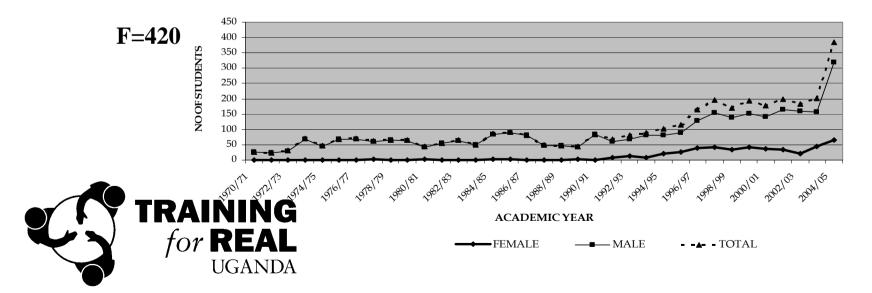
STUDENT ENROLMENT BY SPONSORSHIP- 2004/05







STUDENT ENROLMENT BY SEX SINCE 1970 (Source: Dean's Office)



# **SUPPORT AND LIMITATIONS**

#### SUPPORT

- DWD,
- Sida/SAREC,
- NUFU,
- I@MAK,
- ITALIAN CO-OP,
- USAID/UGS Alliance.

#### LIMITATIONS

- Lack of training Programme
- Lack of Training Strategy
- Limited Academic Structure
- Limited Financial Resources
- No Formal University industry Linkage



# WAY FORWARD

- Strategic co-operation in areas of Research
- Development of a Training Program
- Continued Technical and Financial Support
- Increase Formal Linkages with in the Industry





#### Some good practices in demand responsiveness in the Watsan sector

# Senior Consultant Uganda Management Institute



### Introduction

- GoU reforms in the watsan sector
  - Decentralisation, privatisation, poverty
- The process of reform restructures the sector into three distinct functional levels

- National/ local/ user

• The weakest point was at the micro or user level



#### The case of the Watsan course

- Background
- Good practices
- Lessons/ conclusion



# Background I

- Weakest point was at micro/ user level
- Personnel at micro level lacked community project planning, implementation and social mobilisation skills
- DWD through water depts at district level forced to employ community workers
- Our solution complements engineering skills with community project planning skills



### **Background II**

- Purpose of watsan course is to:
  - "facilitate water and sanitation sector staff to becomes more able to make informed decisions and involve communities and other stakeholders in service delivery and sustainable management"
- Thee specific objective has been to provide a self-financing course entitled *"Planning and management of water and sanitation technologies for low income communities in Uganda"*



#### **Course outline**

- The course has three parts
  - 1. A module dedicated to project planning, implementation and monitoring of community projects
  - 2. A second module on technology choice
  - 3. A third part is a field study, where participants study a watsan related problem and how it can be solved. A report is presented to the class plenary for peer review
- The watsan course has been run 3 times



### **Good practices**

- Curriculum development
- Strategic alliance
- Pre-course assessment
- Course evaluation
- Field study and trips
- Groups discussions and debates
- Role plays to stimulate real situations
- Guest speakers



#### Lessons

- Continuous and close interaction with sector actors is necessary in order to identify real training and community needs in the sector
- Strategic alliances can enhance ability to meet sector needs
- Participatory, flexible training is likely to foster training for real



### Conclusion

- Training for real is possible if training institutions can develop their listening and discerning abilities to recognise sector problems at various levels of the sector and jointly develop practical, flexible solutions
- Questions:
  - Do we have mechanisms for effective listening?
  - How flexible can we be?





#### COMMUNITY MOBILIZATION TRAINING – FIELD PRACTICE

#### Nsamizi Training Institute Of Social Development



# Field practice objectives

- Translate knowledge and skills into practice
- Develop self- awareness
- Develop problem diagnosis skills
- Develop professional competence
- Learn how to engage communities
- Understand the integrated approach to community development
- Implement and evaluate rural development programmes



# Organisation of fieldwork I

#### • Orientation phase

- Making contacts with the local leaders, and communities
- Familiarize with the terrain and local situation
- Creating awareness on the focus of the fieldwork exercise
- Conducting baseline survey and presenting feedback
- Developing action plans.



# Organisation of fieldwork II

- Implementation phase
  - Mobilization for action
  - Developing work strategies
  - Implementation of action plans together with the communities
  - Review of progress



# Organisation of fieldwork III

- Termination phase
  - Setting-up sustainability strategies
  - Completion of work plans
  - Collection of data for evaluation
  - Dissemination of evaluation findings
  - Hand-over ceremonies



# Focus of fieldwork

- intended to expose trainees to:
  - Agriculture
  - Gender
  - Income Generation
  - Water and sanitation
  - Health & Environment



# **Benefits to Nsamizi I**

- Hands-on experience
- Practical oriented
- Translating classroom knowledge into practical skills, and positive attitudes
- Learn survival skills and mechanism
- Breaks the barrier between the trainer and trainees
- Enhances cohesion between the learners and exposes sharing life experiences.
- Enhances the development of life skills, assertiveness
- Creates chances for employment can be employed or start own projects.



# **Benefits to Nsamizi II**

- Exposure in handing community problems
- Demystify inferiority complex by addressing large audience of various categories – old, retired, young, peers etc
- Edutainment learn when you are happy by learning an enjoyable manner.
- Permits self-discovery of new things in life.
- Learn information management recordings and reporting on a regularly basis.
- Development of the spirit of voluntarism a vital component in the development of any society.



# **Benefits to community**

- Transfer of knowledge to the communities
- Act as role models vivid by parents demand for training of their children
- Qualitative and quantitative changes that take place in the communities, hand washing facilities pit latrines, projects initiated.
- Communities are facilitated to discover their own untapped potential e.g. use of the available Resources.
- Creates market for locally produced goods and services.
- General transformation of the communities e.g. demand for services and accountability





#### Rural Practical Training of Students

#### Chris Masaba Mbale School of Hygiene



# **Training Objectives**

- Objectives
  - Obtain real-life experience
  - Apply knowledge learned in class
  - Acquire additional skills
- Timing
  - First semester of year two
  - 2005 year, 106 students



#### What is involved?

- Theory into practice within community
  - Baseline survey
  - Community mobilisation
  - Health education (homes and schools)
  - Community sensitisation
  - Homestead improvement
  - Water improvement
  - Hygiene and sanitation improvement



#### Process I

- Work with LA and partner NGOs to identify training site and establish resources required
- Preparation visit by lecturers
- Work with local authorities, community leaders, NGOs
- Each student allocated >10 homesteads
  - undertake baseline survey
  - Provide feedback



#### **Process II**

- Mobilise and sensitise communities to address baseline survey outcomes and immunisation programmes
- Carry out homestead improvement
- Carry out water source improvement
  Monitor safe water chain
- Hygiene and sanitation improvement campaign in trading centres
- Carry out health education in schools



#### **Process III**

- Carry out immunisation at health units
   Work with health assistant /clinical officer
  - /nurses
- Student assessment
  - Comes at end of placement
  - Contributes to final examination



# Conclusion

- Community impact
  - Large number of homesteads improved
  - Community benefit from health education and sensitisation
- Local Government
  - Practical training contributes towards LG objective
- Environmental impact

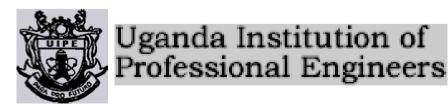




#### Enhanced Responsiveness to the Training Needs in the Water and Sanitation Sector

Eng. Dr. Anania Mbabazi Chairperson, UIPE Kampala Branch





#### Overview

- Introduction
- UIPE membership
- CPD requirements
- CPD status for engineers in Uganda
- Challenges
- Way forward



# UIPE

- Mission:
  - Promotion of higher engineering standards in Uganda
- Continued education of institution membership through seminars workshops and remedial courses
- Continued guiding and monitoring the individual member's Continued Professional Development (CPD)





Uganda Institution of Professional Engineers

#### Introduction

- CPD is about skill development and lifelong learning
- Competencies desired
  - technical
  - Managerial
  - leadership oriented
- Learning centres
  - on the job
  - through mentoring relationships
  - by taking courses
  - attending conferences
  - by participation in professional societies
  - through professional licensure.



#### Professional Societies: UIPE

#### Membership of UIPE

- Fellows
  Members
  Members
  Honorary Fellows
  Graduate Members
  200
  Technologist Members
  35
- 6. Technician Members 16
- 7. <u>Student Members 51</u>



717 members

#### Code of Ethics for Engineers

 Clause 17: Engineers shall continue their professional development throughout their careers, and shall provide opportunities for the professional development of those Engineers under their supervision.



# **UIPE CPD 2005**

- Module I: Engineering Professional Ethics and Conduct
- Module II: Engineering Training and Practice Technical Design
- Module III: Engineering Management, Construction Supervision and Quality Assurance
- Module IV: Health, Safety and Environment
- Module V: Engineering Professional Report
- Module VI: Site Visits and Field Practice Session



# **CPD UIPE 2005**

- 5 Days
- 4-8 April 2005
- Resource Engineers
  - Senior Engineer
  - Registered Engineer [ERB]



# Module II

- Civil Engineering
  - Roads
  - Water Supply and Sanitation
  - Building & Structures, foundations
- Electrical Engineering
  - Power/Electrical Installations
  - Energy Saving Designs
  - Telecommunications
- Mechanical Engineering
  - Industrial Processes
  - Metallurgy/Steel Fabrication/Machinery



# Challenges

- Lack of well structured training programs [ERB/UIPE]
- Lack of accreditation for universities
- Lack of CPD Curriculum
- Limited training capabilities in the private sector



# Way Forward

- Approved training companies in each sector
- Approved training programs in each sector
  - Civil Engineering
    - Water supply and sanitation
    - Roads/highways/transportation
    - Structures
    - Geotechnical engineering
    - Construction Management





#### Course Accreditation as undertaken by the Chartered Institution of Water and Environmental Management (UK) Professor Christopher Pratt

Chair of CIWEM Accreditation Panel



# **Professor Christopher Pratt**

- Retired in 2004, then Dean of Science & the Environment, Coventry University after some 30 years in academia.
- Chartered Civil Engineer with a water specialism.
- Professor of Stormwater Management.
- Fellow of CIWEM and of the Institution of Civil Engineers (UK).



#### **Professor Christopher Pratt**

- Published and presented 200+ scientific papers.
- Organised & lectured on 100+ continuing professional development short courses & conferences.
- Been a head of department subject to accreditation visits by professional bodies.



# **Outline of the Presentation**

- Some details about CIWEM.
- CIWEM's Accreditation procedures.
- Criteria under review during a university visit:
  - Programme coherence
  - Resource provision
  - Professional development
    Communications
  - Self-evaluation.

- Curriculum coverage
- Relevance

- CPD accreditation and its place in professional development.



# The Chartered Institution of Water and Environmental Management

- Its predecessor bodies date from 1895.
- Present Institution was formed in 1987 by the amalgamation of:
  - Institution of Public Health Engineers
  - Institution of Water Engineers and Scientists
  - Institute of Water Pollution Control.
- Granted a Royal Charter in 1995.





## **CIWEM continued**

- Membership includes engineers, scientists and others from a range of environmental disciplines.
- Some 11,000 members, of whom 1,000 throughout the world.
- 13 regional branches (UK and Ireland), 1 in Hong Kong





# **CIWEM continued**

- 3 special interest groups for members:
  - Scientific; Environment; and Rivers & Coastal.
- 7 expert panels:
  - Air
  - Amenity, Recreation & Conservation
  - Sustainable Development
  - Wastewater Management
  - Water Management
  - Water Supply & Quality
  - Water Resources
  - Waste Management





# **Education and Training I**

- CIWEM actively engages in the professional development of its current and would-be members.
- Post-graduate Certificate (4 compulsory modules) & Diploma (a further 4 optional modules from a list of 10+).
- Structured Training, managed through employers.



# **Education and Training II**

- Continuing Professional Development (CPD) – short courses, conferences, etc.
- Accreditation of university degree courses.



#### Accreditation Procedures – General I

- CIWEM makes an Accreditation Visit to a university only by invitation.
- CIWEM and the university both see benefit in the process:
  - CIWEM builds ties with prospective members and ensures their education is appropriate; and
  - The university sees the Accreditation as a 'quality mark' which often attracts students to its course.



#### Accreditation Procedures – General II

- The approach is aimed at being supportive and developmental:
  - External review brings new eyes to check that the course curriculum is appropriate; is not missing some good idea on teaching methods being used elsewhere; and advises on employment/training issues.



# **Accreditation Visit I**

- Visit takes place usually over two days, allowing for an informal evening dinner for university and Panel members.
- Visiting Panel consists of a Chair, 2 or 3 other members with special knowledge relevant to the course, and a secretary.
- Members are drawn from other universities and from Industry.



# **Accreditation Visit II**

- Meetings are held with:
  - Course Team; and
  - Students, without members of the Course Team.
- Students' work is reviewed by the Panel (coursework, project reports and examination scripts).
- Teaching areas, laboratories and facilities generally are visited.



#### Criteria under review during Visit

- Programme coherence.
- Curriculum coverage
- Resource provision
- Relevance
- Professional development
- Communications
- Self-evaluation by the Course Team.



## Programme Coherence I

- Prepares its graduates for employment (current & in the future, as far as trends may be predicted).
- Actively engages with employers in order to appreciate needs & changes (e.g. Industrial Liaison Committee).
- Ensures students are exposed to both academic/research advances & practitioner inputs within the course.



### **Programme Coherence II**

- Student recruitment processes ensure that the course fits the student's expectations and that the student has the capacity to benefit.
- Evaluation of student performance ensures that methods of teaching and learning, curriculum, resources, etc. support and develop students.



# Curriculum Coverage I

- Modules in a year are taught with an understanding of the overall aims of the year.
- Clear progression of module content from year to year, moving from the directed approach to more open-ended solutions.
- Delivery of content & the student experience are appropriate (e.g. field trips, practical exercises, etc.)
   TRAINING

# Curriculum Coverage II

- More general, overarching concepts are embedded in the programme (e.g. health & safety, sustainability, professional ethics, business practices [meeting deadlines], communications skills, analytical/research skills, etc.)
- Regular reviews ensure changes in advance of current practice.
- Students meet challenging assessments, rigorously evaluated.
  TRAINING for REAL

### **Resource Provision I**

- Academic and other supporting staff are experienced and well-fitted for their roles in facilitating student learning – applies to visiting and part-time staff as well.
- Facilities for student use are appropriate (teaching spaces, library, etc.), including informal work areas, 'top-up' classes, external visits, etc.



### **Resource Provision II**

- Timetabling & course management support student learning.
- Special features, which give the course a character, are welcomed – staff research interests or local employer/sector of industry may stimulate this.
- On-going investment in staff development ensures up-to-date academic and industrial knowledge, which feeds into teaching.



#### **Relevance I**

- An active Industrial Consultative Committee makes recommendations on curriculum, student experience and keeps the Course Team up-todate with Industry's needs/expectations.
- Academic staff are actively developing their expertise and are aware of teaching, research and industrial/professional developments.



#### **Relevance II**

- Evidence sought that the link with the course and the university brings CIWEM benefit:
  - Graduates are employed within CIWEM's sphere of interest;
  - Staff/university support CIWEM activities and encourage student attendance at meetings and to become members.



### **Professional Development I**

- Course delivers core competences which underpin successful, long-term career development.
- Course is delivered in a way which ensures that the student appreciates the relevance of the curriculum and associated activities to careers in water and environmental management.



### **Professional Development II**

 Personal Development Planning is embedded in the students' approach to their future careers (e.g. place of CPD and life-long learning);

Academic staff should be seen to lead by example.

• Special features are looked for which indicate that students are encouraged to look outwards to industry (e.g. work-based projects, industrial placements, student-organised activities linked with industry, etc.).



### **Communications - I**

- Course documents are accurate; easy to understand; comprehensive; consistent in style & presentation; are readily to hand; & are regularly checked.
- Of particular importance to students will be clear information on the module descriptors, assessment methods, mandatory/option & free choice module diet, etc. & CIWEM will seek confirmation that this information is readily available.



### **Communications - II**

- Student input to course developments and comments on course operation, facilities, etc. are to be encouraged through formal committees with Minutes circulated generally.
- Student handouts should be well-produced and regularly up-dated and assessment schedules should be available early.



### **Communications - III**

- Course title & publicity should be unambiguous and inform the prospective student, parent or employer clearly what may be the benefits of the course, its curriculum, career prospects, etc.
- The Visiting Panel meet with a group of students in order to obtain views on the student experience, the information and advice, & of the course as a basis for subsequent employment.



### **Communications - IV**

 Minutes of meetings and Annual Course Review documents are scrutinized to assess the input of students, employers and academic staff to the on-going course improvement.



#### Self-evaluation - I

- CIWEM will give a course Accreditation normally for 5 years, hence it is important that the university's internal mechanisms will maintain/ enhance that quality seen.
- On-going self-evaluation by the Course Team is important. The Panel seek evidence of processes of on-going quality & future development.



#### **Self-evaluation - II**

 Self-evaluation processes may be formal (e.g. Annual Course Reports to the university) or informal (e.g. peer observation of teaching): in either case, the Visiting Panel will look at how the Course Team reacted to comments or requests for action.



### Self-evaluation - III

- The review of teaching staff development needs is becoming more important as external agencies review teaching in the UK universities & grade departments:
  - Feed-back to students by staff on assessed work is an important part of the student learning process, what steps are in place to ensure timely return of work with appropriate comments?
  - Are new staff given the support of an experienced colleague & given CPD opportunities to develop teaching & administrative skills?
  - Communication skills are vital in both the giving & the receiving of information from students & other staff.



### **Overview of Accreditation - I**

- A quality assurance process of value to:
  - CIWEM, in the academic development of would-be members;
  - University, in the public expression of confidence which Accreditation gives (also attracts new students);
  - Students, in knowing that the professional body believes the course provides a sound basis for their future employment; and
  - Employers, who can have confidence that the graduates are fit for work in water and environmental management.
- Supportive and developmental.



### **Overview - II**

- Intended to instil a process of self-evaluation in:
  - The university, so that course development is on-going and responsive to Industry and student needs;
  - The students, so that they appreciate the importance of continuing self-development; and
  - The employers, as graduates (undertaking their own selfevaluations) express their development needs in order to meet company aims.
- Self-evaluation is important because the Accreditation Visit is a snapshot and continuous review & development must continue



### **CPD** Accreditation I

- Clearly, CPD and life-long learning are important components in the professional development of CIWEM members.
- Each year at the time of membership renewal, members must confirm that they have engaged in CPD activities (e.g. attended short courses, professional body meetings, etc.)



#### **CPD Accreditation II**

- To quantify the amount of CPD activity undertaken, CIWEM will respond to a course organiser's request for its endorsement by specifying the 'time value' of the course e.g. halfday for an evening CIWEM Branch meeting.
- CIWEM provides a range of day conferences on specialist topics, which bring new developments or current state-of-the-art overviews to delegates.



#### **Conclusion I**

- The Accreditation process involves CIWEM; the university; the students on course and its graduates; and employers and Industry.
- The process is intended to build confidence in all the above stakeholders of the quality and appropriateness of a university degree course.



### **Conclusion II**

- It is part of an on-going process, in which all stakeholders continue to have a part to play in meeting the water & environmental management career aspirations & needs of:
  - students;

- employers;
- the Water Industry; CIWEM; and
- the public/government.





### **Quality in Higher Education**

#### Frank Odhiambo WEDC



### Structure of presentation

- Why quality
- What is quality
- Assessing teaching quality
- Conclusion



# Why quality?

- Your product meets a standard
- Employers know what to expect when recruiting
- Graduates who meet the HR needs of employers
- Government costs of providing HE
- Parents Expectations



# What is quality? I

- Traditional concept of quality
  - Distinctive service
  - Status
  - Delivery standard
  - Questionable utility
- Attaining a standard
  - Originated in quality control
  - High quality service meets standard



# What is quality? II

- Standard set of specifications
- Public service service charters
- Useful in HE
  - Tells nothing about criteria
  - Quality of service measurable
- Fitness for purpose
  - Quality related to purpose
  - Quality judged by extent purpose is met



# What is quality? III

- Advantage dynamic purpose may change
- Disadvantage agreement of purpose
- Institutional effectiveness
  - Extension of fitness for purpose model
  - Quality evaluated at the institutional level
  - Quality lies in clearly stated mission, vision, goals
  - Efficient and effective



# What is quality? IV

- Meeting customer needs
  - Definition evolved meeting customer needs
  - Identify customer needs
  - Difficult identifying customer in HE
  - Student as customer presents issues
    - Producers and customers part of process
    - Difficult to state quality standards
    - Customer best placed to determine quality?



# What is quality? V

- No single definition
  - Stakeholder different focus
    - Students /lecturers process
    - Employers outputs
  - Define stakeholder quality criteria
  - Take into account



## Assessing teaching quality

- Define scope ...
  - Quality of inputs?
  - Quality of outputs?
  - Process?
- Teaching inputs of lecturers
- Module construction



# **Teaching inputs**

- Sessions begin promptly
- Aims and objectives of module specified
- Assessments cover aims and objectives
- Assignments returned speedily /comments
- Different teaching and learning methods
- Safety foremost during practicals
- Absences monitored



#### **Module construction**

- Rights and responsibilities
- Subjects and major topics
- Options available
- Staff responsible + contact details
- Detailed timetable
- Examination and assessment dates
- Transfers between courses



### Summary

- Several definitions of quality
- Stakeholder criteria of quality most important
- Define scope
- Assess for quality



### Conclusion

- Quality in HE can only reasonably be achieved through actions of the institutions themselves
- Quality assurance bodies support institutions in becoming self-reflective
- Staff need to be developed to undertake honest and critical self-evaluation



#### References

- Higher Education Quality Council, 1996. Guidelines on quality assurance. London HEQC, 2006.
- Stone, John, 1997. Increasing effectiveness: a guide to quality management. London: Falmer Press, 1997
- Evans, G. R., 1999. *Calling academia to account: rights and responsibilities*. Society for Research into Higher Education, 1999.



