

Republic of Iraq  
Ministry of Higher Education & Scientific Research  
Supervision and Scientific Evaluation Directorate  
Quality Assurance and Academic Accreditation  
International Accreditation Dept.

## Academic Program Specification Form For The Academic Year 2020-2021

University:  
College : Al-Kitab University  
Number Of Departments In The College :  
Medical Instrumentation Engineering Technique  
Date Of Form Completion : 30/09/2020

Hussain Ibzar Zynal

Dean's Name

Date : 8 / 3 / 2021

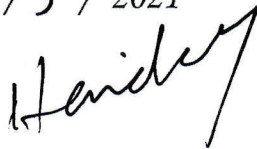
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Dean's Assistant For  
Scientific Affairs

Date : 8 / 3 / 2021

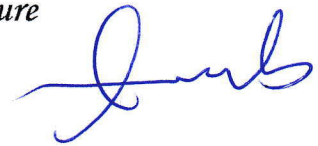
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The College Quality Assurance  
And University Performance  
Manager

Date : 8 / 3 / 2021

Signature

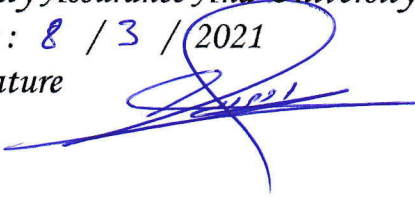


Ahmed Abdul Salam Jghel

Quality Assurance And University Performance Manager

Date : 8 / 3 / 2021

Signature



## TEMPLATE FOR PROGRAMME SPECIFICATION

### HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

#### PROGRAMME SPECIFICATION

The Department of Engineering of Medical Instrumentation Technologies is the interconnected part of electrical, electronic, mechanical and control engineering, which makes it a link between these departments, which serves as the engineering of Mechatronics. This specialization is characterized as a qualification for engineers who graduate from working in the fields mentioned above.

1. Teaching Institution	Al-Kitab University
2. University Department/Centre	Medical Instrumentation Engineering Technique
3. Program Title	Medical Instrumentation Engineering Technique
4. Title of Final Award	Bachelor of Engineering Medical Instrumentation Engineering Technique
5. Modes of Attendance offered	Yearly
6. Accreditation	Ministry of High Education
7. Other external influences	There is a close relationship in the labor market, which receives our graduates, where the opinion of the labor market is taken in the curriculum and taking into account the curricula in scientific universities
8. Date of production/revision of this specification	30-9-2020
9. Aims of the Program	
	1 – Preparing practical engineers in the field of electrical engineering, electrical and electronic
	2 – Graduation of students with the ability to know the parts of different medical devices and the evolution of the technology that gets
	3 – Training and development of engineering and technical personnel on the operation and maintenance of medical devices

4 – Preparation of research and studies to improve and develop the work of medical devices

5 – Provide students with scientific skill to diagnose the faults resulting in medical devices

#### 10. Learning Outcomes, Teaching, Learning and Assessment Methods

##### A. Knowledge and Understanding

A1. Develop plans and programs of work, especially in the maintenance of medical devices

A2. Supervising the implementation of the site

A3. Preparing researches and studies to improve the development of medical devices

A4. Participation in committees related to the activity of medical devices

A5. Participate in the analysis of tenders for medical devices and choose the alternative

##### 14. Subject-specific skills

B1. Training engineers and technicians on the operation and maintenance of medical devices

B2. Installation and operation of medical devices (supervision and implementation)

B3. Consultation in the field of medical devices

##### Teaching and Learning Methods

Lectures – Scientific laboratories – Data show – Workshops – Seminars – Scientific exhibitions

##### Assessment methods

Daily Evaluation – Quarterly Evaluation – Practical Evaluation – Final Evaluation - Presentation – Daily Attendance – Weekly Reports

##### 14. Thinking Skills

C1. Offers scientific projects in the design of circuits and medical devices

C2. Design an electronic board

C3. Develop plans and future ideas to suit the needs in the field of medical devices

##### Teaching and Learning Methods

Lectures – Scientific laboratories – Data show – Workshops – Seminars – Scientific exhibitions

##### Assessment methods

Daily Evaluation – Quarterly Evaluation – Practical Evaluation – Final Evaluation - Presentation – Daily Attendance – Weekly Reports

D. General and Transferable Skills (other skills relevant to employability and personal development)

D1. The graduate provides scientific and applied skills that enable him to diagnose the resulting malfunctions in medical devices

D2. The ability of graduates to make electronic boards in medical devices

D3. The ability of the graduate to train technical personnel in the field of medical devices

D4. Design of alternative electronic circuits

Teaching and Learning Methods

Lectures – Scientific laboratories – Data show – Workshops – Seminars – Scientific exhibitions

Assessment Methods

Daily Evaluation – Quarterly Evaluation – Practical Evaluation – Final Evaluation - Presentation – Daily Attendance – Weekly Reports

### 11. Program Structure

Level/ Year	Course or Module Code	Course or Module Title	Credit rating		12. Awards and Credits
			T	P	
First		<b>Human Rights and Democracy, Mathematics / 1, Engineering Drawing, Principles of Electrical Engineering, Medical Chemistry, Medical Physics, Mechanics, Computer application / 1, workshop</b>	15	17	Bachelor Degree Requires ( x ) credits
Second		<b>Mathematics / 2, Anatomy and Physiology, Clinical Chemistry, Electronic Components and Circuits, Digital Techniques, Medical Measurements and Adapters, Medical Devices / 1, Computer applications/2</b>	18	17	
Third		<b>Medical Electronics system Signal processing , Medical communication systems Medical instrumentation II Microprocessor &amp; microcomputer Power electronics, Electrical</b>	15	17	

		<b>technology Computer applications\3 Training</b>			
Forth		<b>Medical instrumentation III , Control system , Engineering of Radiation instruments, Medical laser systems, Selective topics ,Management Computer applications\4, Project</b>	13	19	

### 13. Personal Development Planning

Be outside the scope of the study plan  
Scientific trips + visits

### 14. Admission criteria.

Depends on the Ministry of High Educations

### 15. Key sources of information about the program

Library, Websites, Virtual Library

## Curriculum Skills Map

please tick in the relevant boxes where individual Program Learning Outcomes are being assessed

### Program Learning Outcomes

Year / Level	Course Code	Course Title	Core (C) Title or Option (O)	Knowledge and understanding				Subject-specific skills				Thinking Skills				General and Transferable Skills (or) Other skills relevant to employability and personal development			
				A 1	A 2	A 3	A 4	B 1	B 2	B 3	B 4	C 1	C 2	C 3	C 4	D 1	D2	D3	D4
Fir st	KTBO 0101	human rights	<b>G</b>	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 101	Mathematics/1	<b>O</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 102	Engineering drawing	<b>O</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE20 103	Fundamental of electrical engineering	<b>C</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 104	Medical chemistry	<b>O</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 105	Medical physics	<b>O</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 106	Mechanics	<b>O</b>	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓
Fir st	BIE10 107	Computer application	<b>O</b>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				







10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding

- A1.
- A2.
- A3.
- A4.
- A5.
- A6 .

B. Subject-specific skills

- B1.
- B2.
- B3.

Teaching and Learning Methods

Assessment methods

C. Thinking Skills

- C1.
- C2.
- C3.
- C4.

Teaching and Learning Methods

Assessment methods

**D. General and Transferable Skills (other skills relevant to employability and personal development)**

- D1.
- D2.
- D3.
- D4.

**11. Course Structure**

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method

**12. Infrastructure**

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

**13. Admissions**

Pre-requisites	
Minimum number of students	
Maximum number of students	

## TEMPLATE FOR TYPICAL SITE VISIT SCHEDULE

1. The typical site visit schedule is designed for two or three days. It includes pre-arranged meetings. The responsibility for arranging these meetings and fitting the template to the circumstances rests with the Universities Quality Assurance and University Performance departments
2. Site visits will normally commence at 09:00 on day 1. Start times of pre-arranged meetings are indicated. Pre-arranged meetings should not normally last more than one hour. The schedule should not completely fill all times with meetings, but leave space for additional activities by peer reviewers including preparing for meetings, updating notes and records and drafting paragraphs for the draft Program Review report

Table (1)

Session	Time	Activity
<b>Day 1</b>		
1	09:00	Welcome and introductions; brief introduction to the review (purposes, intended outcomes, use of evidence and self-evaluation report) – Programme Team
2	09:30	Curriculum; discussion with faculty members
3	11:00	Meeting with a group of students
4	12:30	Efficiency: tour of resources
5	14:00	Review panel meeting: scrutiny of additional documentation including sample of students' assessed work
6	15:00	Efficiency: meeting with faculty members
7	16:00	Review panel meeting: review of the evidence and any gaps or matters to follow-up
8	17:00	Meeting with external stakeholders (sample of graduates, employers, other partners)
<b>Day 2</b>		
9	08:45	Review meeting with review chairperson, review coordinator, programme leader: summary of day 1 findings, addressing any gaps, adjust the schedule for day 2 if required
10	09:00	Academic standards: meeting with faculty members
11	10:30	Effectiveness of quality management and assurance: meeting with faculty members
12	12:00	Review panel meeting: review of evidence and any matters still to be addressed
13	14:00	Flexible time to pursue any matters arising
14	14:30	Review panel final meeting: decisions on outcomes and drafting oral feedback
15	16:30	Oral feedback by review chairperson to review coordinator and faculty members
	17:00	Close

# TEMPLATE FOR THE FOLLOW-UP PROCESS AND REPORT, AND OUTLINE OF TYPICAL SITE VISIT SCHEDULE FOR FOLLOW-UP

## TEMPLATE FOR FOLLOW-UP REPORT

Quality Assurance and Academic Accreditation Directorate / International Accreditation Department.

Institution:

Faculty:

Programme:

Follow-up Report

1. This report presents the findings of the follow-up visit, which took place on / /20\_\_\_. This is part of the Universities Quality Assurance and University Performance departments arrangements to provide continuing support for the development of internal quality assurance processes and continuing improvement
2. The purposes of the follow-up review are to assess the progress made in the programme since the Programme Review report, and to provide further information and support for the continuing improvement of academic standards and quality of higher education in Iraq.
3. The evidence base used in this follow-up review and report includes:
  - a) Self-Evaluation Report for the programme together with supporting information
  - b) Improvement plan prepared and implemented since the Programme Review report
  - c) Programme Review Report
  - d) Higher Education Quality Review Report and institutional strategic plan (if any)
  - e) Additional evidence presented during the follow-up visit.
4. The overall conclusions reached as the outcome of the follow-up review are as follows:
  - a) The programme (give title) at (give name of institution) has/has not successfully implemented an improvement plan.
  - b) Good practice in the indicators demonstrated since the Programme Review site visit includes: (insert)
  - c) Matters of particular importance that should be addressed by the institution in its continuing improvement of the programme are: (insert and indicate if they are, or as yet are not, addressed by the improvement plan).

5. The detailed report is provided in Annexure A below.

Annexure A

Name of Institution \_\_\_\_\_

Date of initial Program Review site visit \_\_\_\_\_

Date visited in follow-up \_\_\_\_\_

Date of follow-up report \_\_\_\_\_

Names of follow-up reviewers

Position/title

Signed

<b>Part 1: The Internal Quality Assurance System in operation</b>				
	<b>Questions</b>	<b>Yes? (√)</b>	<b>Comment</b>	<b>Further action required?</b>
1	Is the program Self- Evaluation Report complete?			
2	Do the most recent self-evaluation reports indicate the extent to which the criteria in the Framework for Evaluation are met and/or are being addressed?			
3	Is there an improvement plan in place, informed by external and internal review?			
4	Are there any major gaps that appear not to be addressed?			
5	Is progress with the improvement plan monitored?			
6	Are there any major obstacles to the expected achievement of the improvement plan?			
7	What is the institution's estimate of the time needed to complete improvements to the programme?			
8	What is the reviewers' assessment of the time needed to complete improvements to the program that would demonstrate the indicators?			

<b>Part 2: Progress demonstrated with the indicators</b>			
Indicators (refer to Framework of Evaluation)	Improvement plan points (comment on match with the Programme Review report's recommendations)	New information from follow-up site visit	Overall conclusion
<u>Curriculum</u> Aims and ILOs Syllabus (content) Progression year on year Teaching and Learning Student assessment			
<u>Efficiency</u> Profile of admitted students Human resources Physical resources Uses made of available resources Student support Ratios of graduation to admitted students			
<u>Academic Standards</u> Clearly articulated standards Use of appropriate benchmarks Achievement of graduates Standards of students' assessed work			
<u>Programme management and Assurance</u> Arrangements for programme management Policies and procedures applied Structured comments collected and used Staff development needs identified and addressed Improvement planning processes working			

# CRITERIA FOR A SUCCESSFUL REVIEW AND EVALUATION OF THE PROCESS

## CRITERIA FOR A SUCCESSFUL REVIEW

1. The criteria for a successful review that informs the arrangements for Programme Review and its evaluation are as follows:
  - i. The programme being reviewed is supported by existing or developing internal systems including specifications and review with a culture of self-evaluation and continuing improvement. These features of internal review provide a sound basis for the external review.
  - ii. The timing of the external review is appropriate.
  - iii. The profile of the visiting peer review panel matches in broad terms the profile of the academic activities in the institution.
  - iv. There is due attention to detail in planning and preparation, by -
    - a. The Quality Assurance and Academic Accreditation Directorate applies consistently its procedures for working with the institution and the reviewers and provides appropriate support for the external review as required
    - b. The review coordinator: ensures that the evidence base generated by internal review and reporting systems is available on time to the visiting peer reviewers, and any requirements for clarification and supplementary information are satisfied
    - c. The institution: provides a self-evaluation report for the programme to be externally reviewed
    - d. The peer reviewers: undertake their preparation for the visit including reading the advance documentation and preparing initial commentaries that inform the conduct of the visit
  - v. There is consistency in the application of the published review method and the protocols by all participants in a way that respects and supports the mission and philosophy of the overall process for continuing review and continuing improvement.
  - vi. Reviewers and representatives of the institution conduct an open dialogue throughout the review that shows mutual respect.
  - vii. The judgements reached by the reviewers are clear, based on the evidence available and systematically recorded.
  - viii. The review report is produced on time in line with the standard report structure and is confirmed by the institution to be factually accurate.
  - ix. The set of conclusions arising from the review are constructive, offering a fair and balanced view of the programme.
  - x. The institution is able to benefit from the external review by giving due reflection and consideration to the findings and preparing where appropriate a realistic improvement plan

## EVALUATION

2. The Quality Assurance and Academic Accreditation Directorate wishes to establish and implement procedures for the systematic evaluation of all external Programme Reviews arranged by it. The institution, the review chairperson and the peer reviewers will all routinely be asked to evaluate each external review by completing a short questionnaire. The structured comments will be analysed by the Quality Assurance and Academic Accreditation Directorate and where necessary the Quality Assurance and Academic Accreditation Directorate will take action to follow-up any difficulties highlighted. In addition, the Quality Assurance and Academic Accreditation Directorate will collate the structured comments to compile regular summary reports indicating the main features of the review process in practice, including the overall levels of satisfaction expressed by the participants, together with examples of good practice and opportunities for continuing improvement.

# **GLOSSARY OF TERMS IN PROGRAMME REVIEW**

## **DEFINITIONS OF TERMS USED IN THE PROGRAMME REVIEW HANDBOOK**

Some of the terms used in the Handbook and/or used in internal and external review and reporting may have different meanings according to the context in which they are used. To remove possible ambiguities, the following working definitions of the terms are offered.

## **ADEMIC FIELDS/SUBJECT AREAS/DISCIPLINES**

Academic fields categorise recognisable and coherent domains or the scope of study such as Mathematics, Medicine, Engineering and Philosophy. Fields that have a wide scope are often subdivided; for example, Humanities include subjects like History and Literature and Arts may include separate disciplines of Fine Arts and Photography. The curriculum of some programmes may combine academic fields, or may include different subjects and disciplines such as Mathematics in Engineering or Accountancy in Business Administration.

## **ACADEMIC STANDARDS**

Specific standards decided by the institution, and informed by external reference points. They include the minimum or threshold level of knowledge and skills to be gained by the graduates from the programme, and can be used in evaluation and review.

## **ACCREDITATION**

The recognition accorded by an agency or other organisation to either an education programme or to an institution to confirm that it can demonstrate that the programme(s) meet acceptable standards and that the institution has effective systems to ensure the quality and continuing improvement of its academic activities, according to published criteria.

## **ACTION OR IMPROVEMENT PLANS**

Realistic plans for improvement derived from the consideration of available evidence and evaluations; they may be implemented for more than one year, but should be prepared and reviewed annually at each level of courses, programmes and the institution.

## **ADMITTED STUDENTS**

Students registered on a programme, including those accepted holding prior credits for admission after year 1.

## **BENCHMARK/REFERENCE POINTS**

Benchmark statements represent general expectations about the standards of achievement and general attributes to be expected of a graduate in a given academic field or subject. Reference standards may be external or internal. External reference points allow comparison of the academic standards and quality of a programme with equivalent programmes in Iraq and internationally. Internal reference points may be used to compare one academic field with another, or to identify trends over a given time period.



## **COMMUNITY**

A defined segment of wider society served by the institution, as determined in its mission and bylaws. It may be defined geographically or in terms of the range of organizations, groups and individuals engaged in its activities.

## **COURSE AIMS**

Overall course aims should be expressed as the outcomes to be achieved by students completing the course as significant and assessable qualities. They should contribute to the achievement of defined aims within one or more education programmes.

## **CURRICULUM OR (IN THE PLURAL) CURRICULA**

The complete organised learning as designed and managed by an institution for an admitted student, determined by the intended learning outcomes (ILOs) and comprising the content, the arrangements for teaching and learning and assessments of students' achievements together with the access to the range of facilities available within the University and, by arrangement, outside it, including libraries, computers studies, social, sports, internships and field studies.

## **DIRECTED SELF-LEARNING/INDEPENDENT LEARNING**

The active promotion of personal skills included in the curriculum that support the student and graduate to seek, assimilate and learn from a range of structured and unstructured experiences. Methods of promotion include e-learning, personal and autonomous learning and fieldwork, assignments, internships, and reflexive learning. Devices commonly used that support directed self-learning beyond formal teaching lectures include logbooks, self-assessment reports, interactive learning tools or the equivalent.

## **E-LEARNING**

Electronic-based learning using information technology may be the primary or secondary element in material associated with a programme or a course. It may be stand-alone or integrated with other teaching and learning approaches. It may include self-determination of aims, ILOs and materials using self-selection and will usually include self-assessment. It generally increases the levels of autonomy in, and responsibility for, learning. Converting existing texts or lecture notes to a website or pre-recorded media alone is generally not considered to be e-learning.

## **EXTERNAL EVALUATOR/EVALUATION**

An appointment to a specific programme, part of a programme or course(s) by the institution to establish an independent and external professional opinion on the academic standards set and achieved in the examinations for the award of the degree.

## **FRAMEWORK FOR EVALUATION**

The framework for evaluation provides a standard structure for evaluation of programmes. It will form the basis for self-evaluation, the site visit by external peer reviewers and the Programme Review report. It is designed to operate in all academic fields and institutions, and to apply to internal and external reviews.

## **GENERAL PRECEPTS/BY-LAWS**

Principles, by-laws and regulations, which the educational institution must have as part of the policies covering its operations.

## **HIGHER EDUCATION INSTITUTE (HEI)/INSTITUTION**

A Faculty, College or University providing higher education programmes leading to a first university degree (B.Sc. or B.A.) or a higher degree.

## **INTENDED LEARNING OUTCOMES (ILOS)**

The ILOs are the outcome-related definition of knowledge, understanding and skills which the institution intends for its programmes. They should be mission-related, capable of measurement (assessable) and reflect the use of external reference standards at appropriate level.

## **INTERNAL SYSTEM FOR QUALITY MANAGEMENT AND ASSURANCE**

The system adopted by the institution to ensure that its education programmes and contributing elements meet specified needs and are continually reviewed and improved. An outcomes-related system of quality management involves precise specifications for quality from design to delivery; evaluation; the identification of good practice as well as of learning deficiencies and obstacles; performance follow-up; suggestions for development and enhancement; and the systematic review and development of processes for establishing effective policies, strategies and priorities to support continuing improvement.

## **JOB/LABOUR MARKET**

The availability of professional, commercial, research-oriented or other fields of employment that a graduate is qualified to join upon graduation.

## **MISSION STATEMENT**

A brief statement clearly identifying the educational institution's duty and its role in the development of the community; a mission statement may also offer brief supporting statements on the vision, values and strategic objectives of the institution.

## **PEER REVIEWER**

A person who is professionally equal in calibre and with management and/or subject expertise to those delivering the provision, but not from the same institution and without any conflict of interest, who can contribute to the review of an education programme for internal and external quality assurance or for accreditation purposes.

## **PROGRAMME**

For the purpose of Programme Review an education programme is defined as one which admits students who, on successful completion, receive an academic award.

## **PROGRAMME AIMS**

The broad purposes for providing the programme which in turn guide the development and implementation of strategic objectives (to ensure that the aims are met) and ILOs (to ensure that the students work towards attaining the specified outcomes).

## **PROGRAMME REVIEW**

Programme Review applies to all education programmes in all higher education institutions. Where the programme is studied in more than one institution, the whole programme is included in Programme Review. Programme Review in Iraq has three objectives:

- 1) To provide decision-makers (in the higher education institutions, Quality Assurance and Academic Accreditation Directorate, parents, students, and other stakeholders) with evidence-based judgements on the quality of learning programmes
- 2) To support the development of internal quality assurance processes with information on emerging good practice and challenges, evaluative comment and continuing improvement
- 3) To enhance the reputation of Iraq's higher education internationally.

## **QUALITY ASSURANCE**

The institution has the means of assuring that for each education programme, academic standards are defined and achieved in line with equivalent national and international standards, that the quality of the curriculum and related infrastructure are appropriate and fulfil the expectations of the range of stakeholders, that its graduates represent the range of attributes specified and that the organisation is capable of sustained, continuing improvement.

## **REVIEW COORDINATOR**

The nominee of an institution to coordinate a Programme Review to assist in the gathering and interpretation of information and to support the application of published methods of review.

## **REPORT**

The regular reports prepared on the basis of Programme Reviews and evaluations of its education programme.

## **SELF-EVALUATION**

An institution's process of evaluating a programme as part of Programme Review and within an internal system of quality management and assurance.

## **SITE VISIT**

A scheduled visit by external peer reviewers as part of Programme Review. Normally the site visit will be for two or three days. A typical outline timetable is provided in Appendix(1).

## **SPECIFICATION**

The detailed description of the aims, construction and intended outcomes of a programme, and any courses, specific facilities or resources that contribute to it. The specification provides information to design, manage, deliver and review the programme.

## **STAKEHOLDER**

Those organisations, groups or individuals which have a legitimate interest in the educational activities of the institution both in respect of the quality and standards of the education and also in respect of the effectiveness of the systems and processes for assuring the quality. An effective strategic review process will include the key stakeholder groups. The precise range of stakeholder groups and their differentiated interests depend upon the mission of the institution, its range of educational activities and local circumstances. The range is usually defined by a scoping study. Examples of groups with a legitimate interest include current students, graduates, intending students and their parents or family, staff in the institution, the employing community, the relevant Government ministries, the sponsors and other funding organisations and, where appropriate, professional organisations or syndicates.

## **STRATEGIC OBJECTIVES/PLANS**

A collection of institution-specific objectives that are derived from its mission and developed into a realistic plan based on evidence-based evaluations. Objectives concentrate on the means by which an institution seeks to deliver its mission. The plan sets out the matters to be addressed, timeframe, person responsible and estimate of costs, and is accompanied by an implementation plan with arrangements for monitoring the progress and evaluating impact.

## **STUDENTS' ASSESSMENT**

A set of processes, including examinations and other activities conducted by the institution to measure the achievement of the intended learning outcomes of a programme and its courses. Assessments also provide the means by which students are ranked according to their achievement. Diagnostic assessment seeks to determine the existing range of knowledge and skills of a student with a view to constructing an appropriate curriculum. Formative assessment provides information on the student's performance and progress to support further learning, without necessarily counting a grade towards graduation. Summative assessment determines the final level of attainment of the student on the programme or at the end of a course that contributes credits to the programme.

## **STUDENTS' EVALUATIONS**

The systematic gathering of students' opinions on the quality of their programme in a standardized structure together with the analysis and outcomes. Surveys using questionnaires are the most frequently used methods to collect opinions; other mechanisms include websites conferences, panels or focus groups, and representation on councils or other committees.

## **TEACHING AND LEARNING METHODS**

The range of methods used by teachers to help students to achieve the ILOs for the course. Examples include: lectures, small group teaching such as tutorials, seminars and syndicate groups; a case study to teach students how to analyse information and reach a decision; assignments such as writing a review paper for the students to gain the skills of self-learning and presentation; field trips; practical sessions for the students to gain practical skills; and carrying out experiments to train the students to analyse the results, reach specific conclusions and prepare a report, presentation or poster.