

# Academic Accreditation Unit

## Rubrics to Assess Student Outcomes



**AAU**

Newsletter

### What is a rubric?

A rubric is a descriptive scoring guide composed of elements the instructor is looking for in an assignment as well as the guidelines for evaluating each of these elements.

A rubric is some kind of scorecard that breaks down a written or demonstrated assignment into manageable, observable pieces.

A rubric divides an assignment into its component parts and provides a detailed description of what constitutes acceptable or unacceptable levels of performance for each of those parts.

Rubrics are considered by education experts As one of the handiest aids to educators since the invention of blackboard. They save instructors hours of time when used for grading while providing timely, meaningful feedback to the students. Moreover, when used properly, they become a normal part of classroom teaching, increasing the rate at which the students become self-motivated independent learners.

When used to assess a targeted student outcome, it divides the outcome into its key performance indicators (KPI's) and provides a detailed description of expected levels of performance for each indicator. They represent convincing evidences that the students have achieved the levels of knowledge, skills, and attitudes the program specifies for each student outcome.

### Rubrics for Student Outcomes

AAU Unit prepared rubrics to assess student outcomes for engineering programs. One of these assessment rubrics is given below.

Outcome (f): The artifact demonstrates the student's understanding of professional and ethical responsibilities.

#	KPI	4	3	2	1
f.1	Identification of Ethical Issues	Can identify and explain the impact of a decision on multiple constituencies and identify alternatives by seeking multiple viewpoints	Can express opposing views clearly and identify several alternative plans.	Seems to recognize that ethical issues are important but cannot see opposing views or fails to find alternative plans	Does not recognize ethical dilemmas.
f.2	Knowledge of Engineering Codes	Identifies engineering ethics codes and acts in accordance with them	Is aware that codes exist and behavior is consistent with them.	Behaves ethically but does not recognize the existence of codes.	Is unaware of codes or ignores their principles.
f.3	Informed Ethical Choices	Uses ethics codes, input from constituencies and common sense to evaluate choices. Accepts responsibility for decisions.	Uses heuristics or personal experience to make choices that are consistent with codes. Accepts responsibility.	Makes decisions based on personal feelings. May avoid taking responsibility for actions.	Behaves unethically and blames others for failures.
f.4	Professional Appearance	Usually demonstrates trustful appearance, self confidence, convincing personality, and respect of his/her personal skills without being personally prideful in words or actions.	Has acceptable level of personal appearance and respect of his/her skills and abilities without being arrogant.	Has acceptable level of personal appearance, but may underestimate or overestimate his/her skills and abilities or demonstrate arrogant attitudes.	Has unacceptable personal appearance
f.5	Professional Interactions	Punctual, enthusiastic, initiative taker, shows respect for others, takes personal responsibility for his/her actions, and establishes successful relationships with peers, superiors, and clients while remaining business focused and quality oriented.	Punctual, enthusiastic, business focused, quality oriented, takes personal responsibility for his/her actions, but usually concentrates on establishing good relations with superiors or relations based on personal benefits.	Underestimates the importance of punctuality, tends to have things done with minimum level of quality and/or effort , if any, or doesn't recognize the need to take personal responsibility for his/her actions.	Fails to maintain successful business interactions, fails to have things done on time and within budget, or tends to blame others for own issues and problems.
f.6	Objectivity	Is able to analyze a problem objectively using facts and a professional code of ethics while recognizing individual/cultural biases in themselves or others.	Is able to listen to other viewpoints and tries to maintain a fair and objective perspective.	Evaluates and judges a situation using personal understanding of the situation, possibly applying a personal value system	Has personally biased perspective of problems and issues, is unable to assess things objectively.

#### Inside this issue:

Rubrics for Student Outcomes	1
Program Assessment Workshop conducted by Dr. Ash-	2
Presentations given by Prof. Dr. Muhammed Harunur	3
AAU on the WEB	4

## Program Assessment Workshop conducted by Dr. Ashley

On February 12, 2012, Dr Ashley Ater Kranov, ABET Managing Director of Professional Services, conducted a workshop about "PROGRAM ASSESSMENT." The workshop was attended by 15 faculty members from the College of computing and Information Technology and 14 from Faculty of Engineering. Dr. Ater Kranov focused on the best practices in the assessment of Criterion 2: Program Educational Objectives, Criterion 3: Students Outcomes, and Criterion 4: Continuous Improvement.

### Highlights of the workshop:

- ◆ Program educational objectives are Broad statements that describe what graduates are expected to attain a few years after graduation and based on the needs of the program's constituencies.
- ◆ Student Outcomes describe what students are expected to know and able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program.
- ◆ Continuous Improvement is a documented processes for assessing and evaluating attainment of program educational objectives and student outcomes. Results should be systematically used for the continuous improvement of the program.
- ◆ Assessment methods used to collect evidence of student learning can be grouped as:
  1. Direct methods that provide for the direct examination or observation of student knowledge or skills against measurable performance indicators, and
  2. Indirect methods of student learning that ascertain the opinion or self-report of the extent or value of learning experiences.
- ◆ Course level assessment cannot address all topics related to the subject matter or all skills related to each topic.
- ◆ Program level assessment is carried out by collecting information across the core curriculum and from external constituencies with the end goal of evaluating attainment of student outcomes and program educational objectives.
- ◆ It is Crucial to use multi assessment-methods and sources to maximize validity and reduce the bias of any one approach.
- ◆ Rubric-based assessments are a best practice for direct measurement of learning outcomes which can:
  - provide the exact characteristics for each level of performance on which student performance is evaluated.
  - provide useful feedback about specific areas of strength and weakness in student's performance
  - demonstrate progress over time in some or all dimensions when the same rubric categories are used repeatedly
- ◆ Curriculum mapping helps in identifying which courses will be used for collecting evidences about the learning process.
- ◆ Collecting too many data but not enough information is one of the major causes of the failure of the assessment process.
- ◆ Representative sampling is acceptable for collecting evidences about programs having sufficient size of students.
- ◆ A sustainable assessment process cannot be the responsibility of one person, but leadership is vital.
- ◆ All faculty should have a voice in deciding on performance indicators and target performance levels

### Common mistakes noted by Dr. Ashley:

- ◆ Common mistakes in the assessment of criterion 2:
  - Constituencies are not involved in establishing and reviewing objectives
  - Review process does not exist or is not regular
  - Objectives look too much like outcomes
- ◆ Common mistakes in the assessment of criterion 3
  - Documentations for some outcomes are missing
  - Outcomes are listed but not assessed
- ◆ Common mistakes in the assessment of criterion 4
  - Assessment processes is poorly defined or not fully implemented
  - Limited indications of how results are used
  - No evaluation of alumni accomplishment of PEOs
  - No evidence of improvement efforts
- ◆ Common mistakes in the reporting of assessment data
  - Discussing all outcomes/objectives at once instead of one at a time.
  - Using the terms "objectives" and "outcomes" interchangeably.
  - Referencing the outcomes/objectives by numbers or letters that refer back to a chart.
  - Requiring the reader to go back in the self-study for the reference.

## Presentations given by Prof. Dr. Muhammed Harunur Rashid

On March 11, 2012, Dr Muhammed Harunur Rashid, ABET Evaluator, Professor of Electrical & Computer Engineering – University of West Florida, gave two presentations about “The process of outcome-based education for any discipline” and “Accreditation issues-Capstone engineering design; contemporary issues; professional ethic”. Three important results from the visit of Dr. Mohammed Rashid are:

1. keep three samples (one is good, one is fail and one is just pass) for student outcomes and show the history of the learning process (if possible),
2. Show for each SOs: where it is learned, where it is practiced and where it is demonstrated in the curriculum,
3. Prepare a binder for each outcome and show all student evidences in it



## Summer and Coop Training News

Summer and coop training is where the student go out of school environment into real life work environment and get painted with an engineer real life. Therefore, students should be trained in companies that are willing to give him this experience. A plan was initiated in the summer of 2011 to improve the summer training of the faculty's students.

To this end, the faculty of engineering prepared the “Companies Partnership Day” where more than 30 high rank representatives of different companies participated in the event that was held on 21<sup>st</sup> Dec. 2011.

The objectives were:

1. How to graduate engineers equipped with competencies needed by the local and international market.
2. How to improve means of communication between the faculty of engineering and the companies to achieve:
  - Better training opportunities for the students,
  - Real life problems for senior design projects,
  - Developed curriculum that keep pace with rapid changes in the market needs.

A web-based application development project for summer training was put in action to facilitate the communication between all the constituents; faculty, companies, students and training administration. The application is being development by an elite team of students in the Computer Science – Girls Campus. It is expected to be launched in the summer of 2012.

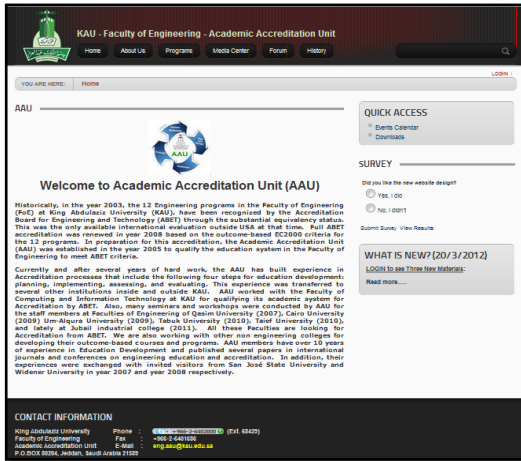
The screenshot shows the website for King Abdul Aziz University Faculty of Engineering. The page is titled "Welcome to the Summer Training Program of the Faculty of Engineering King Abdulaziz University, Jeddah, Saudi Arabia." It includes a navigation menu with links for Home, Contact us, Conditions, News Events, Forms, and Acknowledgement. A sidebar on the left lists various roles: Students, Companies, Technical Supervisors, Academic Advisors, Educational Affairs, and Head of Department. The main content area features a "Summer Training is:" section with bullet points: "A graduation requirement for all engineering students", "Normally in the last summer before graduation", "Duration of 10 weeks in an industrial premise", and "Prerequisites to apply for summer training: graduating status (minimum of 110 completed credits) + some registered or completed courses defined by each engineering program." Below this, it states that the training is a useful asset for enhancing student learning outcomes. A registration box on the right indicates the start date (11/6/2012) and end date (27/6/2012). The footer includes a contact number (002285) and copyright information for King Abdul Aziz University - Faculty of Engineering, All right reserved -2012.

## AAU on the WEB

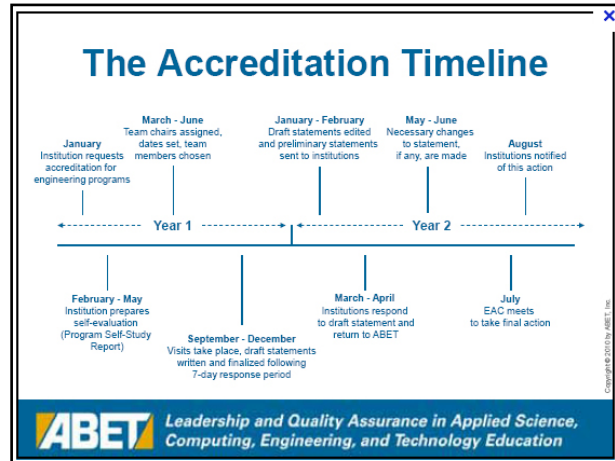
:As part of the continuous improvement process, the AAU at the Faculty of Engineering redesigned its web site in a professional way (<http://www.aaueng.com>). The main purpose of this site is to serve as a source of information and to provide college faculty, and the University of King Abdulaziz community with a central location to access information about the accreditation process. The website enables users to check the progress of the work of different committees, locate research documents, and view pertinent dates and events. It also helps in gathering, updating and maintaining all the information related to the accreditation process.

The Accreditation time line for ABET accreditation spans over two years starting from the time when the institution requests accreditation for its programs to the time when the institution is notified of the final statement of the visit action (<http://www.abet.org/accreditation-timeline/>). On the other hand, the program evaluation and assessment loops normally take another two to three years to complete one accreditation cycle.

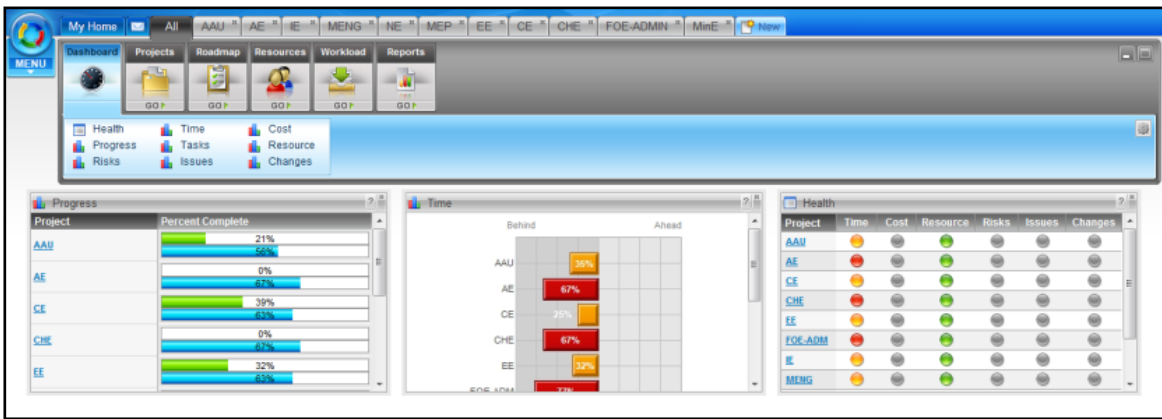
Based on these time constraints, AAU used MS Project Management concept to schedule and follow up all accreditation activities required at the program and college levels. The website



AAU website : <http://www.aaueng.com>



ABET Timeline: <http://www.abet.org/accreditation-timeline/>



AAU Activities Follow up: (<http://www.projectmanager.com>) was used for this purpose

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