Faculty of Computing and Information Technology

ASSESSMENT GUIDE

Academic Year
2012 – 2013

Academic Assessment Unit
Edition 1

http://computing.kau.edu.sa
Contents

CONTENTS _____________________________________________________________ II

ASSESSMENT OFFICERS ________________________________________________ IV

INTRODUCTION _________________________________________________________ 1

EXECUTIVE SUMMARY _________________________________________________ 2

FCIT ASSESSMENT FRAMEWORK __________________________________________ 2

Assessment Characteristics _____________________________________________ 3

Role of Course Learning Outcomes ______________________________________ 3

ROLE OF ACADEMIC ASSESSMENT UNIT ___________________________________ 4

ASSESSMENT PLAN _____________________________________________________ 4

REPORTING AND CONTINUOUS IMPROVEMENT ______________________________ 4

ASSESSMENT TOOLS ___________________________________________________ 5

Assessment of Program Educational Objectives (PEO) _________________________ 5

Assessment of Student Outcomes (SO) ____________________________________ 6

TYPICAL ANNUAL ASSESSMENT ACTIVITIES _______________________________ 7

Typical Timeline ______________________________________________________ 8

FREQUENTLY ASKED QUESTIONS __________________________________________ 1

INTRODUCTION _________________________________________________________ 1

GENERAL QUESTIONS __________________________________________________ 2

What is AIMS? __________________________________________________________ 2

What benefits should we expect from AIMS? _________________________________ 2

What are Program Education Objectives (PEO)? ____________________________ 2

What are Student Outcomes (SO)? _______________________________________ 3

What are CLO? _________________________________________________________ 3

Why specify CLO? ______________________________________________________ 3

How should I write my CLO? ____________________________________________ 3

How many CLO should my course have? ___________________________________ 3

Is it better to have few or lots of CLO? ___________________________________ 3

Can I change my course CLO? __________________________________________ 4

How should I communicate CLO to my students? ____________________________ 4

What are Key Student Outcomes (KSO) ____________________________________ 4

Why 3 KSO for each course? _____________________________________________ 4

How did we select KSO? ________________________________________________ 4

What are key courses? _________________________________________________ 5

How does FCIT sample course performance? _________________________________ 5

What are “course assessments” in AIMS? _________________________________ 5

Do I have to use all my course assessments to report outcome performance? __ 5

Do I have to address (cover) all KSO in each course assessment? ___________ 6

Is it OK to map my test questions and assignments directly to KSO? __________ 6

How does AIMS calculate direct course and program outcome performance numbers? ___________ 6

How does AIMS calculate indirect course and program outcome performance numbers? ___________ 6

What is the meaning of “assessment cycle”? _______________________________ 6

What about “performance indicators”? ___________________________________ 7

Where can I get my course assessment results? ______________________________ 7

Where/when can I get the program assessment results? ________________________ 7

What kinds of assessments are performed by the Academic Assessment Unit? ________ 7

How do you ensure that surveys are outcome-based? __________________________ 7

What is the course binder? _____________________________________________ 7

What are the contents of the course binder? ________________________________ 7
Assessment Officers

Vice Dean of Development
Academic Assessment Unit
Academic Accreditation Unit

Dr. Muhammad A. Al-Hashimi
Dr. Ghada H. Aldabbagh
Prof. Syed H. Hasan

P.O. Box: 80221 Jeddah 21589
Kingdom of Saudi Arabia
Tel. (02) 695-1603
Fax (02) 695-1605
fcit.dean@kau.edu.sa
http://computing.kau.edu

© 2012 King Abdulaziz University
Introduction
Executive Summary

The FCIT is committed to meaningful and sustainable assessment of its bachelor programs. To achieve that, FCIT developed a formal assessment plan that involves a variety of direct and indirect assessments of courses, programs, outcomes, and overall student and faculty experiences. The plan specifies which assessments to perform and identifies data sources, frequency and stakeholders of each assessment. A robust assessment process is in place to ensure consistent results. An Academic Assessment Unit is responsible for developing and administering the assessments according to plan and delivering results to their respective stakeholders. Electronic support systems are in place to relieve filing and reporting burdens. Departments, administrators, and faculty members are free to concentrate on evaluation and improvement.

[Above goes in College Catalog under Program Assessment]

This document is not meant to be an operational or technical manual for the Academic Assessment Unit. It is simply intended to inform FCIT administrators and faculty members about the assessment of Bachelor programs in the college.

FCIT Assessment Framework

Assessment in ABET terminology refers to

"... Processes that identify, collect, and prepare data to evaluate the attainment of program educational objectives and student outcomes".

It is the basis of a continuous improvement cycle that starts with collecting data, goes on to draw conclusions based on interpreting the data, and finally suggests appropriate improvement actions. Another round of assessment and evaluation of results can reveal how effective previous actions were and can help suggest further improvements. The continuous improvement cycle can be summarized as: assessment-evaluation-improvement actions.

FCIT splits the continuous improvement cycle into two parts and assigns responsibilities for each to different parties:

1. Assessment is assigned to a dedicated college-level unit, called the Academic Assessment Unit.
2. Evaluation and improvement are assigned to assessment stakeholders such as course instructors, program heads, and curriculum committees.

![Continuous Improvement Cycle Diagram]

- Assessment
  - Academic Assessment Unit
- Evaluation
  - Improvement
- Assessment Stakeholder
- Continuous Improvement Cycle
This division of responsibility is beneficial on many levels, mainly:

1. It helps make the continuous improvement cycle more sustainable.
2. The college can efficiently allocate the resources (administrative, technical, and clerical) needed to support the tedious and often costly assessments processes.
3. The dedicated unit can build the expertise and experience that enhances efficiency and reliability of assessments processes.
4. Shifting the burden of assessments away from assessment stakeholders allows them to focus on what really matters to them: improving their programs.
5. A separate assessment unit utilizing unified processes can provide a college infrastructure that can better scale to accommodate more programs.

Assessment Characteristics

Assessment in FCIT has the following main characteristics:

- It starts from observable actions by students at the course level, so called course learning outcomes (CLO).
- It relies on a combination of direct and indirect measurements to produce and corroborate evidence.
- It utilizes suitable sampling of performance data. For example, when assessing course outcomes performance we do not insist on collecting data for every assessment in every course for every semester. We believe less is more here. Good sampling can yield representative results while being sustainable and avoids overwhelming assessment administrators and stakeholders.
- It is based on the actual scores (marks) obtained by students in exams and other assessment tools used to evaluate their learning. We don't believe in using adjusted (curved) scores for outcome assessment as they can obscure actual student performance that is the basis of our outcome performance assessment.

Role of Course Learning Outcomes

CLO are explicit statements about competencies that students are expected to attain. Instructors use these statements to assess student learning. They are based on observable (hence measurable) tasks that students are asked to perform (examples: answer a question, solve a problem, and complete a task). They are derived directly from course contents (the curriculum). They reflect instructor goals and priorities in delivering the course contents. They are linked to student outcomes through a mapping documented in the course file. In FCIT terminology we used the terms course binder and course articulation matrix to refer to the course file and the tool that shows CLO-SO mapping, respectively. Course instructors are asked to align (simply map) their questions and assignments to CLO. They are urged strongly to communicate their CLO to students.

CLO provide a reliable basis for assessing outcomes at the program level for the following reasons:

- Instructors at different levels of expertise are able to deal with them since they relate directly to course contents.
- Since the relation to topics is clear, they are easier to agree on and more reliable to map to when devising course assessments.
- They are easier to communicate to students since they relate directly to what they seem to be doing in classes and assignments.
- They provide better diagnostics when problems are identified at a higher level.
Role of Academic Assessment Unit

Although assessment preparations started earlier, the unit was formally established by the executive memo number 1/32/D/113237 by Dean of Faculty of Computing and Information Technology (FCIT) on 30/10/1432 H. (September 28, 2011). According to the memo, the unit was assigned this broad mission:

1. To help faculty members develop suitable performance assessment rubrics.
2. To develop and to perform academic assessments regularly, according to the requirements of the academic accreditation agencies which FCIT targets.

Moreover, the unit is expected to lead the efforts in developing the FCIT assessment plan. They report back data with their interpretation guidelines. The unit can further assist by pointing out trends and possible development opportunities and/or remedy actions. Stakeholders are ultimately responsible for interpreting the data and deciding on the best courses of action.

Assessment Plan

FCIT expects that a formal assessment plan is developed and maintained. The plan should be a collaborative effort between the Academic Assessment Unit, Academic Accreditation Unit, and the college’s Vice Dean of Development. It is recommended that the plan is revised annually and presented to the College Council.

The plan is expected to clarify:

- Program components being assessed
- Assessment methods, processes, and frequencies
- Results stakeholders (constituencies)
- Reporting responsibilities

Reporting and Continuous Improvement

We use 2 mechanisms to simplify continuous improvement and make it more sustainable:

1. Synchronize assessment and reporting cycles with 2 natural academic cycles: end of semester, and end of academic year.
2. Simplify reporting to mainly: an evaluation statement where assessment data is discussed and an improvement statement where improvement actions are described. Comments may be added separately to tie cycles together.

We expect the following improvement reports to be filed as follows.

<table>
<thead>
<tr>
<th>Report</th>
<th>Level</th>
<th>Responsibility</th>
<th>Location</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>End of semester</td>
<td>Course</td>
<td>Course Coordinator</td>
<td>Presented at 1st Department Council in following semester</td>
</tr>
<tr>
<td>2.</td>
<td>End of year</td>
<td>Program</td>
<td>ABET Committee</td>
<td>Presented at 1st Department Council of academic year</td>
</tr>
</tbody>
</table>
Assessment Tools

Assessment of Program Educational Objectives (PEO)

Alumni PEO-based Survey
The Academic Assessment Unit developed an alumni survey, as a measure of how well the program is meeting desired educational objectives. This survey is supposed to be delivered to students who earned their degrees from the new bachelor programs and are working in various professions. The survey is administered electronically using the Qualtrics, a professional online survey service (www.qualtrics.com). Existing alumni survey has been saved in the FCIT Qualtrics account, which can be activated and sent to a new list of alumni each year. Currently the online survey account is operated and maintained by the Academic Assessment Unit. Moreover, the survey was administered on trial basis to existing exiting students. At this point this tool can be considered at cycle zero.

An e-mail list of alumni must be assembled each year. The FCIT Graduates Affairs Unit is expected a service to departments within FCIT maintained lists of contact information for alumni. Once assembled, the alumni e-mail list can be easily imported into Qualtrics.

Employer PEO-based Survey
The employers range from public to private sectors and from small to large firms and include, among others, STC, Saudi Airline, National Commercial Bank, and ARAMCO. The Employer survey/form is another measure of how well the program is meeting program educational objectives needed by the program’s constituencies. This survey is delivered to in two forms: paper based (i.e. forms) and online survey using Qualtrics. Paper based employer survey forms are distributed to students registered in training course session to submit to their respective employers to fill out and submit accordingly to course’s coordinator. While online employer survey is saved in the FCIT Qualtrics account and is sent to an updated employer list each year. Currently the online survey account is operated and maintained by the Academic Assessment Unit.

An e-mail list of employers must be assembled each year. FCIT currently uses list of employers offering training to our students; however, new employer lists will be adopted from Jeddah Chamber of Commerce's employer databases as well as processes and procedures suggested increasing response rate.

Annual Industrial Advisory Board (IAB) Meeting
This group plays a major role in program evaluation, improvement, and development. Because of the closeness of the three FCIT programs, namely the Computer Science, the Information System and Information Technology, a common IAB to the whole faculty was established with prominent managerial as well as technical members of the computational communities. This decision was partially motivated by the fact that the largest employer in KSA, namely the government does not formally recognize the difference. Additionally, private sector stakeholders also seem to have widely varying opinions of what exactly is the difference between these fields. We have selected a large enough group to be able to form in the future internal discipline-specific workgroups. Interestingly, when asked during meetings, via a hand-passed questionnaire, most were not comfortable to choose, further supporting our decision to keep a college-wide board for the time being.
The role of the annual IAB includes guidance for future of the program, strengthen partnership between department and community via collaborative projects, contribute towards the development of the program and curriculum in accordance with the requirements of the labor market, and propose ways to gain funding resources for department development projects. Thus this board plays major role in the definition and evaluation of the PEO.

It is important that by the date of the annual IAB meeting, all annual assessment activities have been carried out and the results are summarized. The Academic Assessment Unit is responsible for summarizing the annual assessment results for each of FCIT program educational outcomes. The annual meeting is also an opportunity to review the current undergraduate mission statement as well as the FCIT Program Educational Outcomes. It is expected that as the state of the art changes so will the goals of the department to best meet the needs of its constituents and the industrial advisory board meeting is the annual opportunity to discuss the changes that are necessary to keep FCIT programs at the forefront of the field.

Annual Student Focus Group

There are several purposes to the student focus group. The first is to maintain excellent contact between the three departments at FCIT and their students, communicate program objectives to students and provide face-to-face discussion to evaluate existing program educational objectives, which should be of prime interest to them.

Particularly, resorting to focus group format was motivated by a known phenomenon related to surveys in our region. People tend to give an overly optimistic view when surveyed that is typically not consistent with what they say face to face. We decided to augment student surveys with the focus group format to uncover any such inconsistencies since student feedback is so crucial to meaningful development.

The meeting agenda is established by all teaching faculty associated with the focus group. A facilitator often leads meetings. There is room for creativity especially if the departments have specific items they wish to address in the focus group.

To get direct feedback and enhance discussion on the FCIT Program Educational Outcomes, the Focus Group Survey Form should be distributed, completed, collected and analyzed early in the meeting. The Program Outcome Focus Group Survey Form can be found on College Catalog under Program Assessment.

Assessment of Student Outcomes (SO)

Exit SO-based Survey

The Academic Assessment Unit has its own exit survey that is administered to graduating students. Questions in the survey are grouped into categories that represent different SOs A-K criteria. This survey also has a series of short-answer questions that allow students to provide constructive criticism. Capstone department coordinators generally ascertain the number of expected graduates, and administer online survey in labs.

Annual Industrial Advisory Board (IAB) Meeting

IAB plays a major role in the evaluation and validation of the PEO. They also provide valuable insights in how the SO apply to the local job market. They also provide valuable feedback on specific issues, and sometimes volunteer their resources to help as we discovered in our
last meeting. We collect their opinion in annual meetings. In 2012 we had to meet a second time due to changes in Deanship just before scheduled ABET evaluation.

Annual Student Focus Group
Student focus groups are used to evaluate existing PEO as well as SO. Details are available upon request in the focus group file in the Academic Assessment Unit.

Direct Course Performance Data
This is the most important assessment which provides the foundation on which we build our assessment system and use to build our outcome achievement case. This assessment is built into AIMS, our electronic management system (see FAQ for details). It relies on student performance data reported by course instructors as reflected in their unadjusted marks as they appear on their graded work. The direct course performance reports generated by AIMS are published and immediately available to instructors in their course files. Moreover, the system transforms course-level performance data into program level data that report overall student outcome performance. These program-level performance are available (again in real time) to program administrators. Details of the calculations performed by AIMS are available, in PowerPoint presentation form, with the Academic Assessment Unit and are available upon request.

Student’s CLO surveys
This survey is administered to students to assess their perception of the extent of attainment of CLO’s covered in a course, as well as inferentially assess SO based on CLO-SO mappings. The survey is generated dynamically by AIMS since CLO vary by course. Students normally complete these online surveys during a lab period. Details of the calculations performed by AIMS are available, in PowerPoint presentation form, with the Academic Assessment Unit and are available upon request.

Instructor’s Course Evaluation
The Instructor’s Course Evaluation Form is a central component of the FCIT assessment process. This form requires an instructor to assess his/her course immediately following the conclusion of the course and return of the Student’s Course and Instructor Evaluations for the course. The instructor draws from both his/her own experience as well as the feedback he/she receives from the students to assess the course against the desired outcomes as identified in the ABET course syllabi.

On this form the instructor will comment on the effect of changes made since the last time the course was taught, and document any changes he or she plans to make to the course syllabus and lessons plans for the next teaching of the course. Format of forms can be found in AIMS.

Typical Annual Assessment Activities
The following section covers typical assessment activities for the academic year. Some of these activities must be conducted more than once per year. Data gathered from these annual activities are to be stored on the College Catalog under Program Assessment for regular review. This timeline resulted from experience gained in our first formal assessment year of 2011-2012.
Typical Timeline

September
- Course's direct assessment, Course evaluation survey & student's CLO survey results returned to Instructors from previous Spring Courses.
- Instructors must complete Instructor's Course Evaluation Form (continuous improvement) for previous Spring courses before Fall courses begin to heads of departments.
- Instructor's course evaluation forms and other survey results administered in previous term discussed in departmental council meetings.
- Tweak and fine tune survey questions (i.e. reduce their numbers, translate) to reflect feedback from previous cycle and upload surveys in Qualtrics.

October
- Order up-to-date contact details (i.e. e-mail, postal address & phone/mobile numbers) of registered students, faculty members, and courses.

November
- Upload up-to-date contact details (i.e. e-mail, postal address & phone/mobile numbers) of registered students, faculty members, and courses in Qualtrics.

December
- Student's course evaluation survey is administered online in labs (mid-month).
- Student's CLO survey is administered online in labs (mid-month).
- Student's engagement survey administered online in labs (mid-month).
- Faculty engagement survey sent via e-mail (mid-month).

January
- Final exams
- Course scores/marks entered in AIMS (end of term).
- Various survey results submitted to heads of departments (end of term).

February
- Course's direct assessment, Course evaluation survey & student’s CLO survey results returned to Instructors from previous Fall Courses.
- Instructors must complete Instructor's Course Evaluation Form (continuous improvement) for previous Fall courses before Spring courses begin to heads of departments.
- Instructor’s course evaluation forms and other survey results administered in previous term discussed in departmental council meetings.
- Tweak and fine tune survey questions (i.e. reduce their numbers, translate) to reflect feedback from previous cycle and upload surveys in Qualtrics.

March
- Order up-to-date contact details (i.e. e-mail, postal address & phone/mobile numbers) of registered students, faculty members, courses, graduating students, Alumni, advisory board committee members and employers.
- Upload up-to-date contact details (i.e. e-mail, postal address & phone/mobile numbers) of registered students, faculty members, courses, graduating students, Alumni, advisory board committee members and employers in Qualtrics.

April
- Planning begins for Industry advisory board committee meeting, focus group – option-specific faculty.
- Alumni surveys sent via e-mails.
- Distribute Employer Survey Forms to students registered in training sessions to
give to training employers.

- Send Employer Survey to employers via e-mail.

**May**

- Collect Employer Survey Form from students registered in training sessions.
- Exit surveys administered to graduating students registered in capstone course (499) online in labs.
- Student’s course evaluation survey is administered online in labs.
- Student’s CLO survey is administered online in labs.
- Student’s satisfaction survey administered online in labs.
- Faculty satisfaction survey sent via e-mail.

**June**

- Final exams
- Course scores/marks entered in AIMS (end of term).
- Various survey results submitted to heads of departments (end of term).
Frequently Asked Questions
Introduction
Frequently-asked questions (FAQ) format is utilized as a familiar and efficient way to communicate detailed information about bachelor program assessment in FCIT. Most of these questions were actually raised by faculty members and administrators. At this point the FAQ is used as a laundry list of questions addressing various issues. Eventually we hope to organize the questions in more useful way.

General Questions

What is AIMS?
AIMS stands for Accreditation Integration and Management System. It is an in-house electronic system that manages academic information of interest to accreditation. It was developed to relieve the faculty from the burden of dealing with seemingly endless paperwork and allow them to concentrate their efforts instead on teaching/learning and on academic development activities. The system was designed to separate academic data from process thereby allowing the implementation of multiple accreditation-specific logics as separate reporting modules. Currently AIMS supports both ABET and the national accrediting body in Saudi Arabia (National Commission for Academic Accreditation and Assessment, NCAAA). AIMS was developed using Oracle technology and is accessible from anywhere through a standard Web browser.

AIMS is available through the persistent link: http://fcit.kau.edu.sa/aims

What benefits should we expect from AIMS?
In summary, AIMS mainly provides the following services:

- Provides a basis for sustainable assessment process of course and program data.
- Provides a common place to store authoritative versions of documents and information related to courses and degree programs.
- Automatically generates documents of interest such as course syllabi and faculty resumes in a consistent format.
- Automatically generates accurate, up-to-date course catalogs.
- Generates comprehensive course documentation that automatically integrates syllabus, teaching documentation, course assessment components, improvements, and example student work.
- Generates dynamically various operational reports such as textbook lists, faculty summary tables, and outcome coverage tables.
- Provides an electronic display room for material of interest to ABET evaluators.
- Generates reports in NCAAA automatically from its accreditation data.

What are Program Education Objectives (PEO)?
According to ABET glossary (http://www.abet.org/glossary):

“Broad statements that describe what graduates are expected to attain within a few years of graduation. Program educational objectives are based on the needs of the program's constituencies.”
What are Student Outcomes (SO)?

According to ABET glossary (http://www.abet.org/glossary):

“Statements that describe what students are expected to know and be able to do by the time of graduation. These relate to skills, knowledge, and behaviors that students acquire as they progress through the program”.

What are CLO?

CLO stand for Course Learning Outcomes. Some experts call them Instructional Objectives. One expert, Robert F. Mager, defined them as:

“...is a collection of words and/or picture and diagrams intended to let others know what you intend for your students to achieve.

- It is related to intended outcomes, rather than the process for achieving those outcomes.
- It is specific and measureable, rather than broad and intangible.
- It is concerned with students, not teachers.”

Why specify CLO?

Simply, those who have a clear understanding of what is it that they are asked to do are more likely to do it successfully. There are many benefits to communicating attainable, clearly articulated, and measurable outcomes to learners. The most important are increasing education quality and being able to measure (demonstrate) your success.

How should I write my CLO?

We insist on writing measurable CLO. Check the CLO presentation of 2010-2011 available from Academic Assessment Unit upon request. A number of useful references can be found in bookstores and around the World-wide Web. Here are a couple of classics:


How many CLO should my course have?

We recommend 1-3 CLO per instruction week. In FGIT, we have 14 instruction weeks. So 14, 28, or 42 (give or take) are appropriate. We do not recommend exceeding 3 outcomes per week as this can overwhelm students and significantly increases the burden of assessing their attainment. Moreover, while more CLO will appeal to precision-minded faculty, it does have its downside as far as CLO student surveys are concerned. From that viewpoint 1-2 per week seems more reasonable.

Is it better to have few or lots of CLO?

Experts seem to have different opinions. Education-centric experts tend to favor more CLO as they tend to focus on improving student learning as reflected by their accomplishments,
whereas assessment-centric experts favor reducing them as they tend to make outcome assessment more difficult (generate more data points). In FCIT, we tried to strike a balance by allowing instructors to pick how detailed they want to be. We asked for 1-3 per week, which works out to 14-42. We also ask to report summary numbers for those CLO that map to 3 key SO. In other words, no matter how many CLO you choose to articulate, you always report 3 numbers. This way we expose our students to better education with motivated faculty without placing a burden on everybody.

Can I change my course CLO?
In principle yes but there is a process and an exception. Here is an outline of the process, ideally:

- Proposed changes are agreed by coordinator and others involved in the course
- Changes are communicated to ABET committee representative to be aware
- Changes are only applied at the beginning of semester so that they are communicated to students and addressed properly
- For academic year 2011-2012 we asked that CLO are only revised once in the academic year so that they could be assessed for 2 cycles

The change process is not needed for wording adjustments that do not change the underlying observable action to be assessed. These changes are encouraged to make CLO more accessible to students.

How should I communicate CLO to my students?
At the very least students should be urged to check the CLO within the official course syllabus. The syllabus is available in a variety of ways including the college website. In most cases introducing CLO in one go is not useful. We recommend that CLO addressed in a week are explained to students at the beginning of that week. Gradual introduction of relevant CLO has many benefits:

- Students can relate outcomes to course material
- Students better understand (perhaps even appreciate) and utilize the CLO
- Students are able to give meaningful feedback when surveyed about CLO

What are Key Student Outcomes (KSO)
Each course, depending on its contents, will map, via CLO, to different student outcomes. Its CLO will not map to SO uniformly. In fact, it is not reasonable to expect any one course to address all SO much less address them equally. To facilitate course assessment we ask instructors to focus on those SO that CLO hit on more frequently. We consider those SO key. Focusing assessment on a fixed set of key SO (KSO) allows each course to report performance uniformly regardless of how many CLO were specified for the course.

Why 3 KSO for each course?
Three is a reasonable arbitrary number. It could just as well be 4. It is a reasonable starting point for the first course assessment cycles.

How did we select KSO?
For the first course assessment cycles in academic year 2011-2012:
1. Map curriculum to 1-3 measurable CLO per instruction week
2. Map CLO to SO and document in course binder.
3. Pick top 3 most-mapped SO as KSO*
4. Communicate CLO to students and use to design course activities and assessments
5. Report student marks corresponding to KSO

*KSO selection may be adjusted for key courses to ensure coverage of professional SO and/or to optimize number of key courses.

What are key courses?
A subset of required courses that guarantees credible coverage of SO. The program guarantees the outcomes of these courses, and uses them to show that its own outcomes are attained. Key courses provide departments and program administrators a powerful tool to prioritize and phase improvements at their faculty's pace while being able to quickly assess and achieve program outcomes. They can afford to move at a slower pace with reluctant faculty members as long as they are not involved in key courses. In FCIT, all faculty members are expected to participate in the system but key course instructors are expected to do more.

How does FCIT sample course performance?
For the academic year 2011-2012 we sampled as follows. We assess course performance every major semester (summer not included). We report performance for key courses. We ask that the final exam is used, at a minimum, if it is comprehensive (covers all course topics), and adequately addresses all KSO. “Adequately” is defined by the applicable Direct Course Assessment Instructor Guide. In cases where the final exam only covers part of the course topics, or it cannot adequately address all KSO, we ask that one or more additional course assessments (such as a mid-term, lab work, or project) are included.

What are “course assessments” in AIMS?
Course assessments are the various familiar tools that instructors use to assess student learning such as quizzes, exams, and projects. These tools yield numbers that we interpret to evaluate student learning. These tools are traditionally used to distribute course grades. For example, the final exam in KAU is intended to be a comprehensive course exit exam and as such is assigned 40% of course grades.

Do I have to use all my course assessments to report outcome performance?
No. As part of our sampling strategy for the first assessment cycles we only require the final exam, if it is comprehensive and reasonably covers all KSO. Reasonably is defined in the latest Direct Course Assessment Instructor Guide. If the final exam is not comprehensive or cannot adequately address all KSO, then one or more assessments must be used to augment the final exam. This is a minimum target for academic year 2011-2012. It likely change in the future as our systems and processes mature, and our faculty grows more comfortable with them.
Do I have to address (cover) all KSO in each course assessment?
Generally, no. Sometimes it is not possible depending on the material, outcomes, and the assessment. For example, an exam may not be the best place to address an outcome related to teamwork. Similarly, a midterm may not cover enough material to address CLO related to a particular KSO.

Is it OK to map my test questions and assignments directly to KSO?
No. We assess 14-42 (give or take) CLO but report (summary) performance numbers for corresponding KSO. We rely on the well documented CLO-SO mapping. It is available through the course binder.

In academic year 2011-2012, along with graded student work, we asked instructors to submit a blank copy of the exam sheet or rubric that shows how each question/criteria is mapped to KSO (V1.01 of Direct Course Assessment Instructor Guide). We realized later that some information useful to quality assurance may not be captured. In the latest guide for the current academic year we ask instructors to show addressed CLO as well. This allows future quality assurance processes to review mapping to questions/criteria, thereby assuring consistency and validity of assessment numbers.

How does AIMS calculate direct course and program outcome performance numbers?
Check the direct assessment calculation presentation. It should in the Academic Assessment Unit file and available upon request.

How does AIMS calculate indirect course and program outcome performance numbers?
Check the indirect assessment calculation presentation. It should in the Academic Assessment Unit file and available upon request.

What is the meaning of “assessment cycle”?
Every time an assessment is repeated we go through a cycle. For example we assess courses every major semester, so we go through 2 course assessment cycles every academic year. The cycle length need not depend on operational considerations. We can choose a cycle length based on how often we wish to sample data or how often we are ready to make changes. An example is the program education objectives (PEO) assessment cycle. It really depends on how often we are willing to significantly revise our curricula, which is ultimately needed if PEO are changed significantly. Typically, a 3-5 year cycle is recommended to keep up with the job market. We chose 3 years in order to cope with the rapidly changing computing needs of KSA. Current assessments frequencies and completed cycles are shown in the assessment plan.
What about “performance indicators”?
We did not develop formal performance indicators. We decided not to do that in our first assessment cycles since they are neither required by ABET nor critical for assessment of performance. It is an advanced concept that we hope to grow into as we build expertise and experience in assessment.

Where can I get my course assessment results?
The results are published automatically in your FCIT Course Binder in the “Course Assessment” section. Course Binders are available through AIMS.

Where/when can I get the program assessment results?
The results are published automatically in the Program SO Performance report available from AIMS.

What kinds of assessments are performed by the Academic Assessment Unit?
The following program components are assessed: course outcomes, student outcomes, and program education objectives. For more details check the latest assessment plan. We also in some cases assess experiences where we ask questions about services and staff members.

How do you ensure that surveys are outcome-based?
Sometimes we ask that the outcomes themselves are rated either for value or for attainment, as needed. Other times we simply map our questions to the outcomes that we want to assess, allowing us to draw conclusions based on responses to corresponding questions. An example for the former case is the CLO student survey. An example for the latter is program educational objectives surveys.

What is the course binder?
The course binder is an important part of the FCIT assessment system, intended to enable course stakeholders to track learning and to identify relevant issues. It collects 3 main pieces of documentation:

- Official course syllabus published by the department
- Course file produced and maintained by course instructors
- Example of student work based on graded assignments and exams

The course file part is a comprehensive record of how the specifications outlined in the syllabus are realized. While the syllabus states the purpose, contents, outcomes, and relation to other courses, the course binder clarifies instruction design, methods, student learning, as reflected by extent of outcome achievement, and improvements.

What are the contents of the course binder?
The following table clarifies contents and sources.

<table>
<thead>
<tr>
<th>Component</th>
<th>Contents</th>
<th>Source</th>
</tr>
</thead>
</table>

Frequently Asked Questions
<table>
<thead>
<tr>
<th>Component</th>
<th>Contents</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syllabus</td>
<td>• Catalog description</td>
<td>Agreement between department and course coordinator</td>
</tr>
<tr>
<td></td>
<td>• Textbook</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Course learning outcomes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Topics and durations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Class schedule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Relationship to KSO</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Author and coordinator names</td>
<td></td>
</tr>
<tr>
<td>Teaching portfolio</td>
<td>• Course design and mapping to outcomes (including activities)</td>
<td>Agreement between course coordinator and instructors</td>
</tr>
<tr>
<td></td>
<td>• Assessments and grade distribution</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Weekly teaching schedule</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Instructional and assessment methods (ideally how they address outcomes)</td>
<td></td>
</tr>
<tr>
<td>Course assessment</td>
<td>• Course-level direct and direct outcome performance</td>
<td>Student marks obtained in course assessments analyzed and reported by AIMS</td>
</tr>
<tr>
<td></td>
<td>• Section summary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Per section performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Per student performance</td>
<td></td>
</tr>
<tr>
<td>Continuous</td>
<td>End of semester report</td>
<td>Agreement between course coordinator and instructors</td>
</tr>
<tr>
<td>improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student work</td>
<td>• Graded samples reflecting top, middle, and bottom performance</td>
<td>Course instructors, or optionally auto sampling</td>
</tr>
<tr>
<td>example</td>
<td>• Blank test or rubric showing mapping to outcomes</td>
<td></td>
</tr>
</tbody>
</table>