

## Accreditation Evaluation of the BS-CSE Program

CSE Department  
Ohio State University

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## Background

- Undergrad programs in CoE: accredited by the Engineering Accreditation Comm. (EAC);
- BS-CSE: also accredited by the Computing Accreditation Comm. (CAC);
- EAC & CAC: part of the Accreditation Board of Engineering Tech. (ABET). <sub>2</sub>

## Background (contd.)

- Standard term of accreditation: 6 yrs
- Last evaluation: Au 1999
- Hence: Now due for re-evaluation.
- Rest of college also up for re-evaluation.

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## To Be Accredited a BS-CSE Program Must:

- Meet a set of criteria specified by EAC;
- Meet a set of criteria specified by CAC;
- Prepare (& submit to ABET) a detailed self-study that demonstrates this;
- Host the evaluation team for a three-day site visit;
- Enable team to evaluate various aspects of the program/ dept./ college/ university.

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## Current Status

- Self-study: Submitted (late June).
- ABET has appointed the following team:
  - Dr. Tuel (IBM): CAC team chair;
  - Dr. Aylor (Univ. of Virginia): CAC prog. eval.
  - Dr. Tuan (US military?): EAC prog. eval.
- Site visit: Oct. 30, Oct. 31, Nov. 1  
(Main day of visit: Monday, Oct. 31)

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## Main Components of Site Visit:

- Talk to individual faculty: get feel for faculty morale, departmental atmosphere, support for research, ...
- Talk to students: get their views on curriculum, faculty, facilities, ...
- Talk to undergrad (staff) advisors, computing facilities staff, ...

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## Main Components (contd.)

- Talk to university officials: dept. chair, dean, provost, univ. registrar, ...
- Evaluate course materials: mainly CSE courses, others to a limited extent;
- Evaluate various facilities: classrooms, libraries, computing facilities, ...

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## More Details of Site Visit:

- Oct. 30 (Sunday):
  - evaluate course materials;
  - team meetings, etc.
- Oct. 31 (Monday):
  - Dean presentation;
  - meetings with dean, chair;
  - meetings with faculty, advising staff, computing staff, tour of facilities,...
  - lunch (hosted by college);
  - meeting with students;
  - visits to library, ...; etc.

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## More Details (contd.)

- Nov. 1 (Tuesday):
  - follow-up meetings (as needed);
  - debriefing of chair;
  - debriefing of dean;
  - team lunch;
  - Exit interview (provost, dean, ...?)
- Nov. 2 -- ??:
  - Wait to hear from EAC & CAC.

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## Results

- For each criterion, the team may conclude that the criterion is:
  - Satisfied; or
  - Satisfied but with some “concern”; or
  - Satisfied but with some “weakness”; or
  - Not satisfied
- “Weakness” means: Criterion is satisfied but not to a sufficient degree;
- “Concern” means: Criterion satisfied but team not sure it will remain satisfied.

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## Possible Final Results

- All criteria satisfied:
  - NGR (Next General Review)
- All criteria satisfied but some concerns:
  - NGR (next team will check the concerns)
- All criteria satisfied but some weaknesses:
  - IR (Interim Report in two years); or
  - IV (Interim Visit: limited visit in two years).
- One or more criteria not satisfied:
  - SC (Show Cause; accr. will be revoked unless cause can be shown why it should not be).

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## The Result We Want

- NGR!
- Or maybe NGR with concern(s)!
- Timeline:
  - Final result: July/Aug. '06;
  - We will get a feel for it in the Exit Interview;
  - Better feel from “preliminary statement” (late January/early February 2006).

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## Important Points:

- Accreditation evaluators are *volunteers*; Interact with them in the same way you interact with paper referees, NSF panelists, etc.
- Evaluators only *evaluate* against the criteria specified by CAC & EAC; they do not make up the criteria. Do NOT debate the criteria with them!
- Guiding principle: Make the team's job as easy as possible!

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## Accr. Criteria (EAC + CAC)

Requirements in eight categories:

- Students
- Program Objectives
- Program Outcomes, Assessments
- Curriculum (Professional Component)
- Faculty
- Labs and computing facilities
- Institutional facilities (libraries etc.)
- Institutional support & resources

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## Web Pages

- <http://www.cse.ohio-state.edu/~neelam/abet>
- <http://www.cse.ohio-state.edu/~neelam/abet/SITEVISIT>
- <http://www.cse.ohio-state.edu/~neelam/abet/SITEVISIT/materials.html>

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## Students

The program must:

- Advise students in curricular/career matters;
- Evaluate student performance/ monitor student progress;
- Must ensure all students meet all program requirements;
- Must have & enforce policies for acceptance of transfer students & transfer credits;

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## Students (contd.)

- Courses must be offered with sufficient frequency (to allow students to complete program in reasonable time).
- CS courses must ensure effective interaction between faculty & students; (or TAs & students in lower-lvl. courses)

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## EAC Terminology

- **Program Objectives:**  
are statements that describe career and professional accomplishments that the program is preparing graduates to achieve.
- **Program Outcomes:**  
are statements that describe what students should know/be able to do by the time of graduation.

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## Program Objectives

Program must have:

- Documented, measurable objectives;
- A process involving various constituents in which the objectives are determined & periodically evaluated.
- A process of ongoing eval. of the extent of achievement of the objectives & use the results to improve the program.

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## Pgm. Outcomes, Assessments

Outcomes: describe what students know and are able to do by the time of graduation.

Must have:

- Outcomes that foster attainment of the program objectives;
- An assessment process with documented results to measure the degree to which the outcomes are being achieved.
- Evidence that the assessment results are used to further develop the program.

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## EC Criterion 3 Outcomes

Must demonstrate that students attain ability to:

- Apply knowledge of math/science/eng.
- Design/conduct expts; analyze/interpret data;
- Design a system/component/process to meet desired needs within realistic constraints;
- Function on multi-disciplinary teams;
- Identify/formulate/solve engineering problems;
- Communicate effectively;

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## Criterion 3 Outcomes (contd.)

Must demonstrate that students attain an:

- Understanding of professional & ethical issues;
- Broad education necessary to understand impact of eng. solutions in societal context;
- Recognition of the need for/ability to engage in life-long learning;
- Knowledge of contemporary issues;
- Ability to use techniques, skills, and eng. tools necessary for engineering practice.

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## Summary of criterion

- Must have outcomes that will ensure achievement of objectives;
- Must include specified Cr. 3 outcomes;
- Must have assessment process to measure degree of achievement of outcomes;
- Must use the assessment results to develop and improve the program.

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## Curriculum (prof. component)

Must include:

- 60 hrs of computing:
  - 24 hrs of core (algorithms, data str., software des., langs., arch.)
  - 24 hrs of adv.; courses;
  - Theoretical foundations, problem analysis/design must be stressed.
- 45 hrs of Math/Science;
  - Min: 22.5 Math, 18 Science;
  - Science must include 2-sem lab seq.

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## Curriculum (contd.)

- 45 hrs of general education courses;
- 67.5 hrs of engineering sc. and design;
- Oral skills must be dev./applied in pgm;
- Written skills must be dev./applied in pgm;
- Must include social/ethical issues in computing;
- Culminating major design experience incorporating eng. stds./realistic constraints;
- Students must be prepared for eng. practice.

## Faculty

- Must be sufficient in no. (for the pgm. size)
- Must oversee all coursework;
- Must cover most of classroom instruction;
- Must remain current;
- Must have technical breadth & depth to support program;
- Must have competence equivalent to grad work in CS;
- Must have time for scholarly activities/professional development.

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## Labs/Computing Facilities

- Adequate computing facilities for students & faculty;
- Instructional assistance for the labs/computing facilities;
- Readily available documentation for software & hardware;
- Adequate support personnel to install & maintain facilities.

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## Institutional Facilities

- Library must be adequately staffed;
- Library's collection must include:
  - up-to-date textbooks;
  - reference works;
  - publications of ACM, IEEE, etc.
- Systems for locating/obtaining electronic information must be available;
- Classrooms must be adequately equipped;
- Fac. offices must be adequately equipped.

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## Institutional Support/Resources

- Support for faculty must be sufficient to attract/retain high quality fac;
- Support for fac. to attend conferences;
- Support/recognition of scholarly activities;
- Adequate office support;
- Adequate time for admin. of the pgm;
- Resources to maintain/update labs;
- Support for library/inf. retrieval facilities;

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## Main Points

- Accreditation evaluators are volunteers; make their job as simple as possible; do not argue with them; do not try to debate the criteria.
- The main criteria requirements are about:
  - Students;
  - Program objectives, outcomes, & processes;
  - Assessment process, use results to improve pgm;
  - Curriculum (including: capstone design course; oral/written skills; social/ethical issues).

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## Main Points (contd.)

- Be flexible & avail. for meeting with team;
- Look through the web pages:
  - ~neelam/abet
  - ~neelam/abet/SITEVISIT
- Send questions/comments/suggestions to Neelam.

Thanks for Coming!

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