CHARGE TO EXTERNAL REVIEWERS
FOR DEPARTMENTAL & DEGREE PROGRAM REVIEW

I. STRUCTURE OF JOINT PROGRAM REVIEW AND SCHOOL REVIEW
This external review committee is made up of 13 reviewers. Each of the five departments in the School of Engineering have been assigned two external reviewers. Additionally there are two external reviewers who have been assigned as School reviewers. The Chair of the External Review Committee (hereto referred as the ERC) and the two external reviewers for the School will attend meetings that cover issues which affect the School in its entirety, such as strategic planning, undergraduate advising, and programs not housed in departments.

External reviewers assigned to a specific department will use this charge as a guide for reviewing that specific department. We encourage the external reviewers to ask questions beyond what this document suggests based on their read of the Self-Study report(s) and their interactions with the faculty, staff and students on campus.

All external reviewers are urged to communicate with the Review Chair, Adrienne Lavine, before, during and after the campus visit to ensure that she is aware of your findings, and make sure that any issues which arise in your review are brought to her attention. All external reviewers are asked to read the following material assigned to them. If there is additional information you would like to receive based on your readings of these Self-Study reports please let the Senate Office know as soon as possible by contacting APRB Analyst, Adriana Collins at 949-824-5205 or ajcollin@uci.edu.

Reading assignments for external reviewers:
- School Self-Study report
  - All external reviewers
- Biomedical Engineering Self-Study Report
  - Yu-Li Wang
  - Jie Liang
- Chemical Engineering and Materials Science
  - Harold Monbouquette
  - Ramamoorthy Ramesh
- Civil and Environmental Engineering
  - Nikolaos Katopodes
  - Chris Hendrickson
- Electrical Engineering and Computer Science
  - Behnaam Aazhang
  - Alex Orailoglu
- Mechanical and Aerospace Engineering
  - Vigor Yang
  - Ganesh Raman
II. AREAS FOR REVIEW

We are interested in your overall assessment of the academic programs, graduate and faculty research, and teaching accomplishments and potential of the unit you are reviewing. **Please make an explicit comparison of the UCI program with comparable programs in other major universities noted for their excellence in research and teaching.** Your assessments of the quality of the undergraduate instructional programs will be used by the Council on Educational Policy. Those of the graduate programs will go to the Graduate Council. Both the Council on Educational Policy and Graduate Council are Academic Senate Councils that meet once a month and are charged with overseeing the academic programs and courses on campus. We also welcome your opinion on issues that may fall between or beyond these areas, such as the quality of post-docs in the department, placement of graduate students, class size for undergraduates, or non-degree programs (if applicable).

While reviewers may recommend increased resources for the unit under review, recommendations for additional hires, for example, as well as for specific changes to course work, mentoring, etc., will often have a greater impact than a general blanket statement. Please make specific recommendations and identify the 2-3 most important priorities. The clearer your justifications for these priorities the more likely your recommendations will influence the planning process.

III. SPECIFIC AREAS OF INQUIRY

We ask that you incorporate the following specifics into your review while addressing graduate, undergraduate, and research programs in your report. Our primary concern is the quality of the faculty, students, and the department’s potential for distinction.

1. **Graduate Program** (Graduate degrees, emphases and concentrations relevant to the department)

   A. **Program Quality:** How would you judge the overall quality of the graduate program? In general, are the graduates well-trained to begin careers related to their degree? What is the Ph.D. rate of graduation in the School, how it compares to the campus and how it compares to the top research institutions in the country? What are the steps is the department going to take to improve the graduation rate?

   B. **Program Design:** Does the program reflect the strength of the faculty? Is the size of the graduate program commensurate with the number of active faculty? How well does the graduate program reflect current thinking about the discipline, and how can the department address any significant gaps or omissions in the program? Does the unit provide training for its graduate students in state-of-the-art techniques and paradigms, and provide a general overview in the field? How is the size of the department’s Ph.D. program(s) relative to peer schools?
C. **Long-Range Planning**: In many fields, long-range planning and strategic choices about areas of teaching and research are necessary. Do you believe that this unit has an imaginative, workable long-range plan that will allow it to make major contributions to the discipline and to pursue appropriate specializations with distinction?

D. **Recruitment and Support**: Does the program draw from the pool of the best available potential graduate students? Have you suggested or would/will you suggest that your own undergraduates apply for graduate study in this program? Is there adequate graduate student support, and how does it compare with similar institutions? From the department’s perspective, is there sufficient Teaching Assistant support from the School? Is the funding model for doctoral students appropriate for attracting and supporting high quality students? How do the doctoral student’s financial packages compare to the rest of the campus as well as other Engineering programs nationwide? Is this campus competitively recruiting the top doctoral candidates with strong financial support packages? If not, how are the doctoral students being funded?

E. **Time-to-Degree and Mentoring**: What is the time-to-degree expectation, and is it comparable to other institutions of this size and scope? Is there active mentoring of graduate students? Do advisors meet with advanced students at appropriate intervals? Are students assisted with job placement in related careers? Are degree completion rates consistent with national standards? What strategies are in place for retaining doctoral students beyond completion of the master’s degree?

F. **Career services and Placement**: What career services are provided to students? Evaluate placement outcomes; in particular Masters vs. Ph.D. placement. What kind of career services are provided to Master’s students? What kind of career services are provided to Ph.D. students? What tracking systems are in place for keeping record of graduate student placements?

G. **Diversity**: Does the graduate program’s diversity, both in terms of research and the diversity of students, meet national standards? Is progress being made in this area, especially given the level of diversity in undergraduate engineering programs?

H. **Learning Outcomes**: Are the Program Learning Outcomes (PLOs) identified by each program appropriate? Is each program making adequate progress in identifying areas of their program they’d like to strengthen, developing an action plan for doing so, and assessing progress?

I. **Materials and Manufacturing Technology**: Some faculty have indicated an interest in growing the Materials and Manufacturing Technology program. Does this seem appropriate?
2. Undergraduate Program (B.S. programs and minors relevant to the department under review)

A. Teaching: How would you describe the overall quality of instruction provided in the department by faculty, lecturers, and teaching assistants? Is the percentage of courses taught by regular-ranks faculty (vs. lecturers, visitors, etc.) appropriate for this discipline and similar to what other good departments in the field do at comparable universities? How appropriate are the pedagogical approaches used in the classroom? What suggestions do you have for enhancing the quality of instruction in the department? How is the student evaluation of the course taken into account in changing the course offering or who teaches the course? Do you suggest any modification to the course evaluation form that the students fill out?

C. Curriculum: How would you assess the overall design, breadth, and rigor of the undergraduate curriculum? How well does it reflect current thinking about the discipline? How are special types of courses functioning, such as foundation courses, core courses, electives, and undergraduate research courses? Can students expect to complete the proposed course of study in four years? What suggestions do you have regarding strengthening study in the major(s)? How well does the department serve non-majors? Are the courses offered for non-majors well-conceived and well-taught? Are the restrictions placed on non-majors with respect to taking Departmental courses appropriate? How is the department finding ways to implement the 3 year degree plan proposed by UC President Napolitano and Governor Brown?

D. Advising and Mentoring: To what extent does the department provide adequate advising and counseling for its majors? What is the level of faculty advising and mentoring of undergraduates? What opportunities do students have to interact with faculty outside the classroom? What suggestions do you have for strengthening advising and mentoring?

E. Student Learning Outcomes: What are students expected to know or be able to do as a result of completing the major? How satisfied are students with the quality of undergraduate education provided by the department? To what extent are students retained in the major and graduated in a timely fashion? Where do students go after graduation and how satisfied are they with the preparation provided by their undergraduate education?

F. Career services and Placement: What career services are provided to students? Evaluate placement outcomes.

F. Composition of the Department: Is the undergraduate student/graduate student/faculty ratio healthy? How does it compare to departments in the top public institutions in the country?
3. Department

A. Do the current structures make sense for fostering the research and teaching in the field that you are reviewing? Are there closely related units at UCI or other University of California campuses where more collaboration should be undertaken? Are there appropriate support facilities such as libraries, research and teaching space, and computer labs and training?

B. What is the Department’s distinction or potential for distinction?

C. What specific changes would you suggest to move this department to the next level, with or without additional resources?

D. Describe your impression of the relationship of the department you reviewed with other departments in the School of Engineering.

Lastly, we welcome your comments on the review process itself. How useful were the materials provided and information gained during your campus visit? Were these enough to make an adequate assessment of the program you reviewed? If not, what would have been helpful to have?

IV. SUBMISSION AND REVIEW OF FINAL REPORT

Department external reviewers are asked to work together to write and submit a final report on the specific department assigned to them by April 20, 2016. Upon completion, we ask that you send the final report to the ERC Chair, Adrienne Lavine who will then transmit a complete document to the Academic Senate.

The Chair of the External Review Committee is asked to submit the completed, final report to the Senate no later than May 2, 2016.

The final report will then be submitted to the Dean of the School, the Provost and by the appropriate Senate Councils (the Graduate Council for graduate programs and the Council on Educational Policy for undergraduate programs).

The final portion of the review process is ongoing. Between 1-7 years later progress on specific action items noted in the review is discussed between the appropriate Senate Council and the program in question.

We thank you very much for your efforts on our behalf.