MEMORANDUM

TO: Reed Dasenbrock  
Vice Chancellor for Academic Affairs

FROM: Peter E. Crouch  
Dean

SUBJECT: Graduate Program Review Progress for College of Engineering

September 8, 2014

As requested in your memorandum dated October 8, 2012, attached are the following documents, detailing a three-year report on progress made on issues identified in the College of Engineering’s graduate program review process:

- Graduate Program Interim Report, 9/3/14;
- Faculty Data Ordered by Credit Hours Taught;
- Faculty Performance as Measured by Funds Attracted, Funds Expended, SCHs Taught, Class Credits Taught Over FY ’13 and FY ’14;
- Graduate Programs Brochures; and
- Graduate Student Handbooks.

Our College has made significant strides in the delivery and implementation of graduate programs and continues to engage and support its graduate students.

Attachments
Overall administrative and reporting structure for the College Graduate Program
The College has made substantial progress in redesigning its administrative and reporting structure for
the College’s Graduate programs. A Graduate Program Leadership Team (GPLT) has been
implemented consisting of the Dean, Associate Dean, Chairs and Graduate Chairs that meets regularly
and at least once every semester to discuss progress and issues. The prior sense that the graduate chairs
reported directly to the Graduate Division has disappeared. This report is organized through the
identified action items agreed to by the Dean and the VCAA after the prior College graduate program
review.

Dean (with Others)
0. Increase GA Salaries.
   This was acted upon in a dramatic manner with Chancellor Apple mandating the minimum of
   $17,502 for 9 month and $20,472 for 11 month appointments. The College had no substantial
   challenges in implementing this new minimum with researchers rapidly absorbing this within their
   grants.

1. Continue to encourage enhancing the ratio of Doctoral Students to Masters Students in the program.

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Graduate Program Degrees Awarded

In some senses this issue has been taken up by the UH Board of Regents and the UH System declaring by defining a “small program” and beginning the process of having units justify the existence of small programs. An MS program is a “small program” if there are \( \leq 5 \) degrees awarded/year on average (3yrs) and a PhD program is a “small program” if there are \( \leq 3 \) degrees awarded/year on average (3yrs). Clearly the MS programs are all well outside these parameters while only the EE PhD program is not classified as a “small program”. To graduate more students there needs to be more students enrolled and the data shows that there have not been any significant changes in the enrollment levels, except for a decrease in the number of MS students in EE and a slight increase in PhD students in ME. Both of these are intentional. Greater swings in enrollments will come eventually with greater marketing of the programs and better GA salaries, both of which are happening. Of course, eliminating the PhD programs in CEE and ME would adversely affect the ability of faculty to attract funding to engage in research and ultimately adversely affect the ability to attract research 1 grade research faculty.

In addition EE now has a direct entry program for PhD and ME is close to implementing a direct entry program for PhD Students. Since ME’s undergraduate enrollment has increased dramatically the College is assigning to ME an increased number of TAs. This should help increase the number of PhD students in that program.

All three departments were ranked in 2014 by US News and World report, (Graduate Programs with a PhD) in the third quartile of all reporting programs. Indeed it is the first time that all three programs have been awarded a bona fide ranking. This indicates that the units are beginning to gain some national recognition (relative to the medium and short term past).

2. Develop marketing materials for the graduate programs.
   Graduate brochures were produced for each program as enclosed.

3. Mold the faculty profile to address the College Research clusters through hiring and helping identify opportunities for research.
   The lack of any significant hiring of faculty in the last few years has precluded any ability to significantly alter the makeup of the overall faculty research profile. To continue to build the Engineering College to one worthy of UH Mānoa faculty investments do need to be made. Despite this setback several other tactics have been tried and some deployed. The College held a Retreat in summer of 2013 and on that basis revised the set of Faculty Clusters to better represent faculty research interests. The Dean instigated a College Research Advisory Committee in AY ’14 and met with them on several occasions to discuss and strategize on mechanisms to help research efforts.

4. Seek additional mechanisms to communicate with the faculty.
   The Dean instigated a State of The College address every year and maintains regular communications with the College Senate when it meets. The Dean has also been much more active in emailing faculty on issues and in particular research opportunities. The Dean has sponsored events with external consultants to provide advice to faculty and especially younger faculty in procuring research contracts. Communication with graduate chairs has increased through the regular meetings of the GPLT.
5. Seek additional resources for staff support and technician support for the Graduate Programs from the university administration.

Clearly the continuing budget challenges at UH Mānoa have precluded any additional funding to the College from the UH Mānoa administration and indeed the College has seen additional budget cuts since the graduate program review. To compensate, an ever increasing proportion of the Engineering Student Fees are being dedicated to technician support for undergraduate teaching and all TA funding is now being paid from Engineering Student Fees.

6. Ensure that the renovation occurs in a timely manner, but ultimately depends upon funding from the Legislature.

The Dean, the Dean’s (Advisory) Council, College faculty, staff and students, were able to persuade the 2014 Legislature support $2M for planning for the Holmes Hall renovation. However, the governor has not released the funds to date. Sadly, Holmes Hall does appear in the UH Mānoa CIP request this year because of the lack of a definitive plan, and a long list of other pressing CIP needs on the UH Mānoa campus.

7. Look for additional faculty incentive mechanisms.

Faculty Salaries will probably have increased by 14% across the board by the time of the next graduate program review (6% at the time of writing this report). Clearly the faculty has been rewarded for their efforts, but sadly, the lack of merit funding in these salary increases continues to make it difficult to justly reward productive faculty.

The College in the last two years has had to channel over a third of its RTRF funds to pay lecturers and graders. It is not clear that when the extraordinary one time funding requirements of FY ’15 pass, that this funding can be fully restored. This clearly presents a disincentive for faculty, especially to actively participate in funded research.

The College was and continues to hope for additional funding for its significantly increased enrollment in the past few years, that would have inject additional funds into the departmental programs.

The College introduced three annual graduate student awards, one each for the best MS, PhD and TA and these were awarded for the first time in spring ’14.

The College introduced a summer faculty stipend to pursue research opportunities with large companies on the US mainland. 9 awards were made over a two year period. The College Research Advisory Committee will review these before further awards are made.

The Dean’s Office

1. Work with the Graduate Chairs and the Graduate Division to identify the characteristics of the full time cohort of Master’s students within the total pool of Master’s Students. Once this is accomplished, further mechanisms to differentiate full time and part time Master’s Students will be identified and implemented. This will include consideration of more occasions in which the graduate student bodies are engaged by the Graduate Chairs and mechanisms to record graduate student progress semester to semester in order to promote intervention where necessary.
The GPLT spent much time discussing the issues of differentiating “part time” and “full time” students without too much progress to date. The College units have met with Gary Rodwell and he agreed to work with the Graduate Dean to insert into STAR many of the statistics needed to make this process easier.

The GPLT discussed the Graduate Division’s new requirement that all graduate students’ progress to be reviewed annually. In theory this will enable the units to make better progress on differentiating full time and part time students. However, especially for PhD students the College will still have to identify the appropriate mile posts for the students.

The Dean now holds two different dinners with the dean each semester, one for undergraduate students and one for graduate students. The robust dialog with the graduate students has been encouraging.

2. *Work with the Graduate Division to bring their Faculty Mentoring Program to the College once a semester for some period to give faculty an opportunity to understand best practices.*

The Dean’s Office with the Graduate Division held mentoring seminars twice for engineering faculty and are now regularly holding their own seminars. College faculty member Aaron Ohta in EE was nominated for the Peter Garrod Graduate Mentoring award.

3. *Work to give graduate students a more prominent role in the College Career Fairs that take place each semester and work with the Graduate Division to provide dedicated career guidance opportunities.*

Graduate students are included in the College’s two Career Fairs each academic year. Their cv’s are bundled with the CDs distributed to attending companies. It has been reported that some MS students have found positions through the career fair. The College works with CTAHR and ICS (Natural Sciences) to bring their students to the Fair. Companies and some faculty give career guidance seminars (and advertising for their companies) at events scheduled around the Career Fairs.

**Graduate Chairs**

1. *Work on updating the Graduate Handbook for their students.*

Revised Graduate Student Handbooks are now available to all students as enclosed.

2. *Work with the Graduate Division to formulate a publicity strategy with coupled recruitment efforts.*

Brochures for the Graduate Programs were produced and the previous Graduate Dean took these materials on several international recruiting trips. It is not clear if this will be repeated under the new Graduate Division formulation. Further exploration of international recruiting strategies will be undertaken once the Graduate Division again gears up for this interaction.
3. Graduate Chairs will be active proponents for mentoring of graduate students in their respective departments as well as leading the mentoring process, and helping create a graduate student culture in the College as part of their duties.

Graduate Chairs are more active in their support of graduate students, attending and promoting activities such as Seminars, Career Fairs, Graduate College Mentoring Seminars, and the Dean’s Dinner with Graduate Students. The attendance of graduate students at the College Pizza lunch seminars has markedly improved. In general the much tighter graduate program leadership team (GPLT) in the College has helped motivate the Graduate Chairs to be more pro-active in this regard.

4. Graduate Chairs will lead a review and appropriate modifications of the Master’s curriculum for their respective departments to ensure that they can be completed by full-time students in 2 years.

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The Dean and some faculty come from a background where the MS program takes only one year to complete. However as the time to degree data indicates the norm in the College is much more like 2.5 years. There was agreement by the GPLT that full time Master’s students can indeed accomplish their degree in 2 years. Thus the issue of significantly reducing the time to degree for College MS students reverted to two main points:

- Identifying the full time Master’s students early enough to ensure timely intervention and,
- Ensuring that the courses are offered for them to complete in 2 years.

See The Deans’ Office (1) for discussion on identifying “part time” and “full time” students.

EE was able to post a (rolling) schedule of courses for the MS degree lasting 3 semesters (assuming that the thesis where applicable was completed over the summer). ME and CEE have been encouraged to at least formulate a similar schedule of courses for the MS degree over 2 years. Of course increased undergraduate enrolment in the College is making it harder to offer all the graduate courses required to ensure that these schedules, once posted, can be approximately maintained.

Agreement was reached that a source of increased time to degree for MS plan B students was a tendency for an overly long “project” component. Agreement was reached that the criteria for the required “project” in the plan B MS degree would be tightened up. CEE is working on this and will pass to the other units. This would have an effect of decreasing the time to degree for some students.
It was agreed in principle that a new program “Masters of Engineering”, with a prescribed time span for completion (1.5 – 2 years) and without thesis or project would be a useful addition to the College’s suite of programs, but there has been little enthusiasm for pursuing this option to date.

Chairs
1. The Chairs will report in the Spring of 2013 the quantitative results of their revised workload documents and in particular the resulting differentiation of teaching load amongst differing faculty profiles.

Workload assessments were received in the dean’s office in the summer 2013. However these were inconclusive. The Dean’s office will continue to work with the chairs to ensure adequate teaching loads and differentiation of teaching loads amongst active and non-active researchers. The Dean distributed in fall 2014 his analysis of faculty whose work load is less than the average, and hence the faculty whose workload is greater than the average, based upon the data available in the dean’s office. It is trusted that the Chairs will appropriately interpret this data to adjust teaching loads accordingly. Additional budget cuts and increasing enrollments (in ME dramatically increased enrollments), have generally increased teaching loads for the faculty so a general increasing teaching load has been occurring organically. The issue remains of protecting the productive researchers from relatively excessive teaching loads.

2. Employ student fees to offset reasonable technician time directed at undergraduate education.

Most technician time devoted to undergraduates is now being paid by the Student Fees. Paying all the TAs with Student Fees however has meant that the funds from Student Fees left for equipment purchases is drastically reduced. Growing student numbers has implied increased laboratory sections which has increased the need for laboratory monitors, again increasing the need to employ Student Fees funds for personnel expenses instead of laboratory equipment renewal and purchase.