Present: Professor Ross McAree (in the Chair), Ms Krysia Choros, Professor David Cliff, Associate Professor Lydia Kavanagh, Dr Michael Kearney, A/Professor Mehmet Kizil, Associate Professor Paul Meehan, Dr Italo Onederra, Ms Kylie Pettit, Associate Professor Carl Reidsema, Ms Phil Yorke-Barber, Professor Mingxing Zhang, Mrs Kim Lamb, Ms Jessica Shelley.

Apologies: Professor Andrej Atrens, Ms Yonna Cowan, Mr Doug Malcolm, Professor Richard Morgan, Associate Professor Martin Veidt.

Minutes: The minutes of the meeting held on 19 May 2015, having been previously circulated, were taken as read and confirmed.

Welcome: Members welcomed Professor David Cliff to the committee as the academic representative from the SMI. The School administered courses offered by the SMI to postgraduate coursework students.

Business arising out of the minutes

The following items were actioned from the meeting on 19 May 2015 and submitted to the Board of Studies in Engineering

- Changes to courses and programs
  - Change of semester: MECH4460 and MECH3250
  - Change to course list preamble: BE(Hons)/ME in Mechanical Engineering
  - Change to course list preamble: BE(Hons)/ME in Mechanical and Aerospace Engineering
  - Change to course list: Mechanical Engineering Extended Major
  - Changes to contact hours and course description: ENGG7701

- Feedback to the Faculty: entry prerequisites to the BE(Hons)
- Feedback to the Faculty: International student mid-year entry
- Implementation plans for the 2014 and 2017 BE accreditation
- Course overlap and incompatibilities

The following items were actioned from the meeting on 19 May 2015

- Meeting with the SMI regarding Teaching and Learning Objectives
- Dissemination of information on the New Columbo Plan
- Dissemination of information about TEL Grants

1. Changes to courses for Semester 1 2016

Members endorsed the following changes to take effect from Semester 1 2015:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Comments/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>HUFA7500</td>
<td>Human Factors in the Minerals Industry</td>
<td>This course will no longer be offered and should be inactivated.</td>
</tr>
<tr>
<td>HUFA7501</td>
<td>Human Factors Engineering</td>
<td>This course will no longer be offered after 2015 and should be inactivated.</td>
</tr>
<tr>
<td>MINE7053</td>
<td>Sustainable Development in the Minerals Industry Context</td>
<td>Course coordinator should be changed to TBA.</td>
</tr>
<tr>
<td>MINE7055</td>
<td>Regional and Local Economic Development in the Resources Sector</td>
<td>Change of Semester from Semester 2 to Semester 1 2016 (reversal of the request approved at the meeting of 19 May 2015).</td>
</tr>
<tr>
<td>MINE7055</td>
<td>Regional and Local Economic Development in the Resources Sector</td>
<td>Change course coordinator to Paul Rodgers.</td>
</tr>
<tr>
<td>MINE7061</td>
<td>Sustainable Development in the Minerals Industry – Advanced Tools &amp; Integration</td>
<td>Offer in Semester 1 2016 (was not offered in 2015). Remove “next offered in 2016” from the course description. Course coordinator should be changed to TBA.</td>
</tr>
</tbody>
</table>
2. Changes to Courses - Executive Approval

Members noted that executive approval had been granted by the Associate Dean (Academic) for the following changes to take effect from Semester 2 2015.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Comments/Rationale</th>
</tr>
</thead>
</table>
| ENGG7601    | Experimental Design | Change of assessment  
  From quizzes, presentations, project plan and report, peer assessment  
  To examination, presentations, project plan and report, discussions  
  Note that peer assessment is a part of the group project |
| MINE2106    | Resource Geology & Mine Surveying | Change of course coordinator to Basil Beamish and Sue Golding (Earth Sciences) |
| MINE3106    | Minerals Industry Visit | Reduction of quota from 60 to 36. Quota is too high for mine sites to accommodate larger numbers.  
  Other minor amendments to the course description were also approved. |
| MINE4128    | Coal Mine Strata Control | Added to BE (Hons) Advanced Elective List |
| MINE7003    | Special Topics III | Change of Course Coordinator  
  From: Talitha Santini  
  To: Associate Professor Longbin Huang |
| MINE7009    | Project or Thesis IV | Add Jo-Anne Everingham as course coordinator |
| MINE7010    | Project or Thesis V | Add Jo-Anne Everingham as course coordinator |
| MINE7029    | Project or Thesis V | Add Jo-Anne Everingham as course coordinator |
| MINE7052    | Community Aspects in Mineral Resource Development | • Change title to Community Aspects of Resource Development (from 2016)  
  • Remove quota  
  • Remove reference to the intensive workshop from the course description  
  • Change to mode of delivery to “on line” |

3. Changes to course lists

a. BE/ME in Mechanical and Aerospace Engineering

A member of academic staff proposed that ENGG7020 - Systems Safety Engineering be added to the elective list for the BE/ME in Mechanical and Aerospace Engineering from Semester 1 2016.

ENGG7020 was a #2 course (2L, 2T) and was currently available to students in the Master of Engineering Science suite or programs as well as postgraduate computer science programs. The course was also available to undergraduate students as ENGG4020. While there were no formal prerequisites, it was assumed that students had completed ENGG4000/7000 – Introduction to Systems Engineering/Systems Engineering or other experience in systems development and system lifecycles. Familiarity with software engineering principles was desirable but not essential (CSSE3002 /7001 – The Software Process.) It was noted that should this change be endorsed, ENGG4000 and CSSE3002 (and its prerequisites) would also need to be added as electives in the BE (Hons) Mechanical and Aerospace course list.

Members discussed the practice of inserting a ‘shadow coded’ course into a program offered by the School and agreed that it should not be supported at this stage.

The Chair and Secretary would provide advice to the staff member.
3. Changes to course lists (cont’d)
   b. Course rationalisation: CHEE4024/MECH4460

   Members considered a proposal to introduce a new course, ENGY4000 – Energy Systems, into the Bachelor of Engineering (Honours) from Semester 1 2016 in the following fields: Mechanical Engineering, Mechanical and Aerospace Engineering and in the BE(Hons)/Master of Engineering in the following fields: Mechanical Engineering, Mechanical and Aerospace Engineering.

   The course would combine two currently offered courses, CHEE4024 – Energy Systems in Sustainable Development and MECH4460 – Energy and the Environment. Both CHEE4024 and MECH4460 would no longer be offered and CHEE4024 and MECH4460 would be listed as incompatible courses with ENGY4000. The School of Chemical Engineering would administer the course and the EFTSL would be evenly split between the two schools.

   It was recommended that -
   - ENGY4000 – Energy Systems be offered from Semester 1 2016;
   - MECH4460 and CHEE4024 be listed as incompatible courses with ENGY4000; and
   - The class timetable be amended accordingly.

   c. New Course Proposal: ENGG4500 and ENGG4510

   Members considered a proposal to offer two new courses, ENGG4500 – Thesis Preparation and ENGG4510 – Engineering Thesis from Semester 1 2016. The new courses were proposed to cater to a growing number of international students undertaking a 3+1+1 program. These students were usually from Chinese universities and they came to UQ after completing 3 years of engineering at their home university. They undertook a one year study abroad at UQ (their 4th year) and were awarded a degree from their home university. Those who completed the study abroad year, which must include a #8 thesis component, were eligible to apply for admission into a postgraduate coursework award or a RHD at UQ. Currently these students enrolled in MECH4950 – Special Topics C (#2) and ENGG4011 – Professional Engineering Project. Both of these courses were also taken by other cohorts of students and it has become increasingly difficult to manage the separate cohorts. There would not be any additional workload beyond the administration required to manage two additional courses and the change would benefit students.

   It was recommended that -

4. SECaT Results – Semester 1 2015

   Members reviewed SECaT course outcomes from courses offered in Semester 1 2015. Members noted that, on balance, the outcomes were very good. It was agreed to congratulate staff who got a score of 4.2 and above on Q8.

   It was noted that ENGG7280 - Engineering Project 8A had a particularly low score and it was also noted the course was effectively offered for the first time in Semester 1, 2015 as part of a semester long thesis for BE/ME students. Many of the enrolled students undertook the course as an overseas placement. Feedback indicated they were not as well prepared for this as they might have been and they indicated that they needed more regular contact with the Course Coordinator. The course ran from 15 January - 30 June and meeting with them as a cohort prior to departure was difficult. It was planned to investigate these issues further with the view to helping students be better prepared and to increase communication.

   The score for MINE2123 – Structural Mechanics for Mining also received a low score. MINE2123 delivered along with MECH2300 - Structures & Materials. SECaT results for both courses were lower than they had been in the past few years. It was agreed that the course coordinators needed to investigate this and report back on changes that might be needed to address student concerns.
4. **SECaT Results – Semester 1 2015 (cont’d)**

Members also discussed the response rate to the SECaT instrument which were a bit lower than the University's average response rate. Mechanisms to increase response rates were needed. One method which was trialled included setting aside lecture time and ask students to complete the survey in class using their laptop or other device. However, this did not necessarily result in a higher response rate. Another strategy suggested was to inform students how feedback from other students was introduced into the course to improve this. An understanding of how students rated courses was also needed as was determining what value a student found in completing the surveys. The student representative suggested that providing students with direct evidence of how the course was improved and also suggested that students who feel neutral about a course may not respond. A report on changes to courses should also be done.

A school-wide approach to increasing response rates was suggested. The SECaT results would also be discussed at the next Student/Staff Liaison Committee in Mechanical Engineering with a view to obtaining the student’s perspectives on why they choose to respond or not to respond to the SECaT surveys.

Staff valued the written feedback from students; however, some staff reported they had not received individual student comments and this needed to be followed up with ITaLI.

It was also noted the SECaT survey was under review at the University level and feedback had been sought from staff.

It was resolved that –

- Staff with a SECaT score (Q8) of above 4.2 be congratulated;
- The course coordinators in MINE2123 - *Structural Mechanics for Mining* and MECH2300 – *Structures & Materials* work together to identify issues that may have caused the lower scores in both courses.
- Feedback from students on SECaT outcomes be sought from each Student/Staff Liaison Committee.

5. **Review of MCQ Content in End of Semester Examinations**

Members reviewed courses offered by the School which included multiple choice questions (MCQ) in an end of semester examination. Courses assessment was reviewed in response to Engineers Australia’s recommendation that the schools “Work toward eliminating all multiple choice questions from senior year examinations as soon as possible”. The interpretation was that senior year examinations included year three, four and higher level courses.

One of the reasons students did not like MCQ was that partial credit could not be gained when significant work or calculations were needed to arrive at an answer.

It was agreed that an analysis of current literature provided on the use of MCQ as a method of assessment was needed. Professor David Mee and Associate Professor Carl Reidsema would investigate in what circumstances MCQ could be used effectively in advanced engineering courses. One course coordinator had provided anecdotal evidence that the student results in the MCQ part of the examination correlated well with results on other parts of the examination. Course coordinators would then be asked to ensure assessment was consistent with the literature.

It was recommended that –

- A review of current literature on the use of MCQ as a method of assessment in engineering courses be undertaken; and
- A report on the outcome of the review including recommendations on how the School assessment could be compliant with the literature be prepared and presented to the Teaching and Learning Committee for consideration at its next meeting.
6. Teaching and Learning Committee objectives 2015-2017

a. Delivering on the Iconic Experience

Members noted the Chair appointed a subcommittee to review and report on current or possible “iconic” experiences in each plan offered by the School. The subcommittee would be comprised of Michael Kearney (Chair), Chris Leonardi, Anand Veeraragavan, Michael Heitzmann, Vince Wheatley, Ingo Jahn and student representatives. Kim Lamb would provide secretarial services. The report was due by mid-September for inclusion in the 2016 Teaching and Learning budget.

b. Learning Objectives – Review

It was necessary to undertake a thorough and systemic review of the School’s courses and ensure that learning objectives and assessment items were appropriately mapped to learning outcomes. The Chair reported that learning objectives in a few Semester 2 2015 courses were reviewed and updated utilising the JourneyMaker lexicon. The Chair reported that in practice the lexicon had resulted in many learning objectives based on the requirement that they be testable. The goal was to include measurable objectives that were assessable and also included in assessment. Reviews of other courses needed to be completed before the commencement of Semester 2 2016.

c. School Operational Plan – Learning

Members noted the School’s Operational Plan (2015-2017) is under review. A draft Plan would be discussed at the next meeting of the Committee.

7. Australian Graduate Survey

Members review the outcome of the 2014 Australian Graduate Survey and the 5 year trends for the period 2010-2014 (where available).

The Australian Graduate Survey was an annual survey of university graduates. It was comprised of two parts: the Graduate Destination Survey (GDS), and either the Course Experience Questionnaire (CEQ) or the Postgraduate Research Experience Questionnaire (PREQ). The University’s Management Information Section (MIS) prepared reports that provided comparisons on key student satisfaction and graduate outcome measures between universities and within UQ. The reports, which were found on UQ’s Reportal, are as follows:

CEQ Comparison with other universities, 5 Year Trend

In 2014, UQ’s overall satisfaction ranking was 18 out of 39 Australian universities and UQ was ranked number 4 in the Go8 behind Monash University, the Australian National University, and the University of Melbourne. UQ was number 5 of 8 in Queensland universities.

CEQ UQ Faculty and School, 5 Year Trend

The Faculty and School was determined where the majority of EFTSL for a student’s nominated major was located. The data showed student satisfaction within the Faculty was ranked number 4 of 6 across UQ. Within the Faculty, the School’s satisfaction index has been consistently above 85% and was ranked number 1 of 5 in three of the five years of the survey (2010, 2013 and 2014).

CEQ UQ Program and Level, 5 Year Trend

Members noted that within the CEQ, respondents were asked to provide feedback on their nominated major/s. If a student has nominated two majors and has indicated that they were enrolled in a dual degree then both sets of responses would be attributed to the program. Student satisfaction with the Bachelor of Engineering has been above 80% for the entire reference period (2010-2014). While response numbers were lower, there appeared to be a lesser satisfaction in the dual program with Commerce and a higher satisfaction in the dual program with Science.
7. **Australian Graduate Survey** (cont’d)

*GDS Comparison with other universities, 5 Year Trend*

Data from 2014 showed that 70.73% of UQ graduates were in full time employment, with 16.52% employed less than full time but seeking full time employment. There was a further 12.74% not employed. Those doing further full time study were excluded from the final two categories. Approximately 21-23% of graduates were undertaking further full time study (ranked UQ 15 out of 39). UQ was ranked 9 out of 38 for graduates available for and in full time employment in 2014. The median graduate salary was between $50k and $57k during the period 2010-2014.

*GDS UQ Faculty and Program, 5 Year Trend*

Salaries for Faculty graduates were between $55.5k and $65k during the reference period. Salaries for Bachelor of Engineering graduates were between $59k and $65k. Members noted that for all salaries, 2013 salaries were slightly higher than 2014 salaries.

8. **University Experience Survey Report**

The University Experience Survey was an annual national survey commissioned by the Federal Government and was designed to give domestic and international undergraduate students an opportunity to provide feedback on their University experiences.

Members reviewed the results of the 2014 University Experience Survey (UES). It was noted that the University of Melbourne was the highest in the Group of Eight and QUT’s results were higher than UQ’s.

9. **Bachelor of Engineering - Common Architecture**

Members reviewed the request from the Faculty to provide feedback on the proposed common program architecture for the Bachelor of Engineering (Honours) and Bachelor of Engineering (Honours)/Master of Engineering programs.

Key features in the proposal included -

- At least two elective courses needed to be available in Years 1 and 2 to enable students to take MATH1050, CHEM1090 or PHYS1171 (high school “equivalents” of Mathematics C, Chemistry, and Physics).
- No student would be locked into or locked out of a major before Year 2.
- Year 2 courses would include discipline based foundation courses that are offered in the single major.
- Year 3 would include courses for extended and dual majors (i.e. dual majors ‘commence’ in Year 3).
- A #52 major would be needed to allow the inclusion of ENGG4900 – Professional Practice and the Business Environment in all Engineering majors through a reduction in ‘free electives’.  

The intent of the common architecture was to provide the following:

- A common structure to the Bachelor of Engineering (Honours).
- A vision of a structure for the four years of the program - what the degree is about so students are better able to understand the program (e.g. what is engineering at UQ?).
- Alignment of program level scaffolds that align with Engineers Australia Stage 1 Competencies across all years.
- A shared vision for the ME component of the BE(Honours)/ME.
- Two ‘types’ of the BE(Honours)/ME.
- Direct entry into the ME.
- A better way to show staff the balance in the programs we offer between engineering science and engineering practice.
9. Bachelor of Engineering - Common Architecture (cont’d)

The Chair had undertaken a preliminary analysis of compliance with the proposed model for all fields of engineering offered in the School.

It was noted that the model included streams of "discipline specific engineering practice courses", engineering science and mathematics courses, discipline based technical knowledge and skills courses, an advanced electives. The first two years of the program would be identical in the main discipline and the corresponding dual majors and all plans would include ENGG4900 or equivalent. The compulsory core for a major would be #52 to allow inclusion of ENGG4900.

While it was likely that compliance would ultimately be mandated, most fields offered through the School were reasonably compliant and only a few adjustments would be needed. It was noted that the materials content in Mechanical and Materials Engineering and possibly the aerospace content in the Mechanical and Aerospace Engineering might be a bit thin under the proposed architecture and further analysis was needed.

Members agreed that the new structure would also help show future students that UQ students do 'real world practice' each semester. The structure might also lead to a better cohort experience and provide a more systematic framework for demonstrating how the Engineers Australia Stage 1 competencies would be met. It was suggested that consideration to any possible impact the structure might have on students who failed was needed as was an analysis of the impact on dual degree students. Overall, members endorsed the common architecture. It was suggested that should the new structure be implemented, there would be a need to ensure that all programs maintained compliance for a significant period of time.

It was recommended that the Chair provide feedback to the Board of Studies in Engineering.

10. Identify Verified Assessment

Members noted progress toward the implementation of Identify Verified Assessment within the School. Of all courses with a final examination, only one course had not implemented the 40% pass hurdle set by the Faculty.

Changes to the Semester 2 2015 Electronic Course Profiles were made as part of the ECP review and publication process.

11. Assessment Rules and Policies

Members noted University Rules associated scheduling of assessment due dates in the final two weeks of semester and the Revision Period.

At the Examiners’ meeting on 3 July, it was noted that at least one examination may have been held during the last week of semester. It was noted that the General Award Rules (GARs) listed the following restrictions on the scheduling of school based examinations and deadlines for other assessment submissions.

- School based examinations (include ‘quizzes’, etc) cannot be held during classes in the final two weeks of semester unless: (a) the examination forms part of practical classes in a series conducted regularly during the semester or (b) it is approved by the President of the Academic Board.
- No assessment may be held or due during a revision period.

However, permission to schedule an examination, quiz, etc during the final two weeks of semester could be done provided the President of the Academic Board approved.

This information was emailed to academic staff following the Semester 1 2015 Examiners’ meeting and Semester 2 2015 Electronic Course Profiles were checked for compliance.
12. Examination Errors – Semester 1 2015

Members noted issues with the School’s Semester 1 2015 examination period. Errors were low and explainable with one exception which was being investigated.

13. Informative resources

Members noted the following information.

a. The Conversation 19 November 2014

The article “Students don’t know what’s best for their own learning may be of interest to teaching staff.

http://theconversation.com/students-dont-know-whats-best-for-their-own-learning-33835

b. Guides to Writing Learning Objectives

The material below was based on the paper ‘Objectively Speaking’ published in Chemical Engineering Education, 31(3), 178-179 (1997) and was available at –

http://www4.ncsu.edu/unity/lockers/users/f/felder/public/

Also available under the learning objective/instructional objectives heading was another paper ‘Designing and Teaching Courses to Satisfy the ABET Engineering Criteria’ published in JEE 92(1), 7 – 25 (2003) that those interested in looking at program level objectives might also find useful.

c. MEA Report Writing Guide

The MEA Report Writing Guide is found at Attachment 14.

d. Professional Performance, Innovation and Risk (PPIR): Improving Engineering Performance

At the recent Go8 Engineering Dean’s meeting, a briefing was provided from Directors at the Warren Centre on the Professional Performance, Innovation and Risk (PPIR) framework. The PPIR framework could apply well for the academic community and was identified as useful to make explicit the experiences build into courses, in particular design and project courses, and for articulating program pathways.

e. Evidence based teaching


14. Faculty Teaching and Learning Committee Minutes

Members noted the Faculty Teaching and Learning Committee minutes from the meeting on 20 May 2015.

15. Faculty Board of Studies in Engineering Minutes

Members noted the Board of Studies in Engineering minutes from the meeting on 17 June 2015.

16. Library

Ms Yorke-Barber asked members to review the collection cancellation email sent to the Head of School.
17. Changes to entry prerequisites to the BE (Honours)

Members considered a request from a member of academic staff to include Mathematics C as a compulsory prerequisite to the Bachelor of Engineering (Honours). This was not supported as not all schools offered Mathematics C and a number of good students might not be able to gain entry.

A request to return to a completely common first year was also not supported.

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