MEMBERS OF THE FACULTY OF LIFE AND PHYSICAL SCIENCES TEACHING AND LEARNING COMMITTEE

Associate Professor Peter Whipp (Chair)
Dr Jane Hallos (Student Adviser)
Ms Jenny Gamble (Faculty Manager)
Associate Professor Nancy Longnecker (Teaching and Learning Co-ordinator)

Representatives from Schools:
Dr Jan Meyer (Anatomy and Human Biology)
Professor Alice Vrielink (Biomedical, Biomolecular and Chemical Sciences)
Professor Ian McArthur (Physics)
Professor Geoff Hammond (Psychology)
Professor Robert Grove (Sport Science, Exercise and Health)

Other Representatives:
Associate Professor Des Hill (Mathematics and Statistics)
Associate Professor Thomas Martin (Faculty Offshore Programs Director)
Ms Marjan Heibloem (Representative from FNAS)
Ms Merrilee Albatis (Science Library)
Mr David Enright (Program Manager/Offshore Programs)
Mr Tiago Tomaz (Postgraduate Student Representative)
Mr Linden Blair (Undergraduate Student Representative)

The next meeting of the Teaching & Learning Committee will be held in the Faculty Meeting Room 158 on Tuesday 14 June 2011 at 2pm. All members are expected to attend or ensure that a representative from the School will attend on their behalf.

1. MINUTES

Confirmation of the minutes of the meeting of the Teaching and Learning Committee held on Tuesday 10 May 2011.

2. DECLARATIONS OF POTENTIAL FOR CONFLICT OR PERCEIVED CONFLICT OF INTEREST

The Chair invites members to declare interest in relation to any item on the agenda.

3. ITEMS/BUSINESS IN PROGRESS FOR NOTING SINCE PREVIOUS MEETING

<table>
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<tr>
<th>Item/Business in Progress</th>
<th>Progress Update</th>
<th>Status</th>
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<td>Principles of assessment and amendment of Marks</td>
<td>Policies to be created</td>
<td>To be revisited</td>
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Part I – Items for Communication to be dealt with en bloc

There are no items for inclusion Part I

Part II – Items for Decision to be dealt with en bloc

There are no items for inclusion Part II
Part III – Items for Discussion and Decision

4. CHAIRS REPORT
The Chair will report on Teaching and Learning issues of interest to members.

5. DURATION OF EXAMINATIONS
Faculties have been asked to consider moving from 3 hour exams to 2 hours. Student Administration has had a number of comments from unit coordinators requesting that their examinations be scheduled as early as possible because they were either:
- Unable to meet the deadline for submission of results or;
- Wished to attend a conference.

Moving to 2 hour exams would allow 3 examination sessions a day and would reduce the examination period to 10/11 days as opposed to the current 12/13. This in turn would allow more time for the marking of papers. The duration of examinations which have been scheduled for semester 1, 2011 is attached (Attachment A) for reference.

For discussion

6. MATHEMATICS SKILLS
2011 saw the first intake of the WACE cohort entering University and the School of Mathematics and Statistics is in a position to reflect upon the situation regarding the suite of new first year units introduced this year in order to accommodate the very significant changes to the high school Mathematics curriculum. The School of Mathematics and Statistics wishes to recommend that:
- Students entering UWA with WACE Mathematics 3A/3B (but no higher level of WACE mathematics) be allowed to take MATH1050 Introductory Calculus if a solid elementary level of calculus is required for their studies.
- MATH1045 Intermediate Calculus be cancelled after semester 2 2011 and be replaced by MATH1038 Calculus and its applications.

Recommendations and supporting arguments from the School are attached (Attachment B and Attachment C) for reference.

For discussion

7. SCHOOL REPORTS

8. PSB REPORT: INTEGRATION OF ACADEMIC PROCEDURES AND STUDENTS RIGHTS INTO AN ONLINE MODULE
At the April meeting of this committee the Offshore Program Director had advised members that the AUQA review had identified the need for offshore students to be more aware of academic assessment procedures and their rights as a student. The PSB Relationship Committee had suggested that it form part of an existing on-line module. The program Director has prepared a paper on this issue (Attachment D), which will be presented by the Program Manager.

For discussion

9. STUDENT REPRESENTATIVE REPORT

10. OTHER ITEMS OF BUSINESS
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CRICOS Provider Code No. 00126G
25 May 2011

To: Teaching and Learning Committee

Faculty of Engineering, Computing and Mathematics
Faculty of Life and Physical Sciences
Faculty of Natural and Agricultural Sciences
Faculty of Arts, Humanities and Social Sciences
School of Business

Re: Basic Mathematical Skills

Now that first semester has almost ended the School of Mathematics and Statistics is in a position to reflect upon the situation regarding the suite of new first year units introduced this year in order to accommodate the very significant changes to the high school Mathematics curriculum.

The minimum entry level for students intending to major in Science or Business courses is WACE Mathematics 2C/2D. It should be recalled that this unit is essentially Year 10 level Mathematics. Students needing more mathematics than this basic level enrol in the unit MATH1050 Introductory Calculus (or ECON1111 Quantitative Methods for Business and Economics).

The lecturer reports that the current crop of MATH1050 students is struggling quite a lot more than in the recent past. It appears that a large proportion of them should instead be doing the unit MATH0060 Pre-Calculus Mathematics. This is something that should be investigated.

The next lowest UWA entry level is WACE Mathematics 3A/3B. This unit is predominantly (very introductory) statistics and probability. Essentially, the Calculus part is equivalent to about one-quarter of the way through the old TEE Year 11 Introductory Calculus. Students who enter with this level of high school mathematics do MATH1045 Intermediate Calculus and/or STAT1400 Statistics for Science.

Unfortunately, it has become clear that the basic mathematical skills of a vast number of the students in MATH1045 Intermediate Calculus who took only WACE Mathematics 3A/3B (and a significant number of those who took WACE Mathematics 3C/3D or WACE Mathematics: Specialist 3A/3B for that matter) are very poor indeed.

There is also the problem of lack of mathematical maturity. Pre-2011 students entered with a genuine Year 12 unit (TEE Discrete Mathematics or better) but WACE Mathematics 3A/3B is essentially a Year 11 unit.

It was obvious within a couple of weeks that a significant proportion of students had no chance of passing MATH1045 because they had picked up very little from high school. A number of them realised this themselves and asked whether they could drop down to MATH1050, but this is not possible currently. The lecturer of MATH1045 instigated the introduction of a special unit, MATH1049 Mathematics Special Unit (roughly equivalent to MATH1050) to give such students the opportunity to pass.
One of our best and most trusted tutors was engaged to run the tutorial sessions. The tutor reported that the gaps in the students’ basic algebra is just too great to bridge in a couple of weeks. For example, providing a few extra tutorials in the early weeks of semester would not be sufficient to fix the problem, nor would a series of un-mentored online modules.

Many students (particularly international students) have no trouble with MATH1045 (or a similar unit called MATH1038). It seems reasonable to allow students to choose, based on the requirements of their major.

As such, the School of Mathematics and Statistics wishes to recommend that:

Students entering UWA with WACE Mathematics 3A/3B (but no higher level of WACE mathematics) be allowed to take MATH1050 Introductory Calculus if a solid elementary level of Calculus is required for their Studies.

Yours sincerely

Professor Andrew Bassom
Head of School
25 May 2011

To:  Teaching and Learning Committee

Faculty of Engineering, Computing and Mathematics
Faculty of Life and Physical Sciences
Faculty of Natural and Agricultural Sciences
Faculty of Arts, Humanities and Social Sciences
School of Business

Re:  MATH1045 Intermediate Calculus and MATH1038 Calculus and Its Applications

Now that first semester has almost ended the School of Mathematics and Statistics is in a position to reflect upon the situation regarding the suite of new first year units introduced this year in order to accommodate the very significant changes to the high school Mathematics curriculum.

To summarise the current situation three new units were introduced:

MATH1035 Calculus and Matrices
MATH1038 Calculus and Its Applications
MATH1045 Intermediate Calculus

MATH1035 is roughly equivalent to the old MATH1040 Calculus B (with slightly less Calculus but with Matrices included). It is for students who have done all of the WACE mathematics units except WACE Mathematics: Specialist 3C/3D.

MATH1038 was introduced very late on in proceedings as a consequence of legal requirements to do with information that went out to the High Schools a year or two earlier (but was only picked up on at a late stage). The unit covers all of the Calculus components of both WACE Mathematics: Specialist 3A/3B and WACE Mathematics: Specialist 3C/3D, so that students reach the same level of Calculus as those in MATH1035 and are able to proceed to MATH1010 and MATH1020. It was primarily aimed at Engineering students, although there are a number of Physics students also enrolled, along with a smattering of other students.

Currently, there is so much material in MATH1038 that only a rudimentary coverage of the ideas and techniques is possible. Please note however that these ideas and techniques are covered again in MATH1010 and MATH1020 but at a much faster rate and in much greater depth.

The existing unit MATH1050 Introductory Calculus continues to cater for minimum entry students (those with WACE Mathematics 2C/2D).

MATH1045 Intermediate Calculus was designed to cover material in the gap between MATH1050 and MATH1035 and has an eclectic catchment pool. The student backgrounds are very diverse. It transpires that this unit has not turned out to be as suited to the students' needs and backgrounds as anticipated.
There is significant overlap between MATH1038 and MATH1045 in that they both cover the Calculus component of WACE Mathematics: Specialist 3A/3B. We believe that it will produce much better outcomes for all students concerned if we reduce the amount of material in MATH1038 and also put it in place of MATH1045. It would become a pre-requisite of MATH1035. Note that Vectors would still be covered in MATH1038.

As such, the School of Mathematics and Statistics wishes to recommend:

- the cancellation of MATH1045 Intermediate Calculus (after second semester 2011).
- the replacement of MATH1045 Intermediate Calculus by MATH1038 Calculus and Its Applications in all new UWA publications

This would result in the following streamlined progression (note that Mathematical Methods 1&2 are the New Courses 2012 replacement units for MATH1010/MATH1020):

- WACE Mathematics: Specialist 3C/3D ---> Mathematical Methods 1&2
- WACE Mathematics: Specialist 3A/3B ---> MATH1035 Calculus and Matrices
- WACE Mathematics: 3C/3D ---> MATH1038 Calculus and Its Applications

Yours sincerely

Professor Andrew Bassom
Head of School
Informing PSB students of their rights and responsibilities as UWA students and provision of academic advice

One of the outcomes of the AQUA review 2009 with regards to the Faculty’s offshore teaching program at PSB Academy Singapore was recommendation 4 which stated: ‘AUQA recommends that UWA inform their students at PSB Academy more explicitly and effectively of their rights as UWA students.’ (AQUA report 2009, page 32)

Some of the key points made under this recommendation were (for details see page 32 of the AQUA report):

A. Reference to the UWA website or brief mention at orientation or in the documentation that goes to students is insufficient to advise students in a meaningful way of their rights as UWA students.

B. Considerable emphasis was placed on the role of the local program executives in advising students on a wide range of issues and concerns, but this seems to place a very high demand on a few individuals, particularly when large numbers of students are involved.

C. Areas of particular concern to students include access to marked assignments and examination papers and review of grades. Students are not familiar with the rules and regulations and in particular their rights of review and remarking. BSc students will have to be more explicitly and effectively made aware of their rights as students as regards grievances, appeals and complaints.

D. The Panel did not gain a clear understanding as to how academic advice is provided to students. Although there was extensive mention of the wide range of duties that a program executive at PSB performs in support of the BSc and the MBA programs, there seems to be a need for identifying clearly how students obtain academic advice.

In order to respond to the recommendations and points A to D, the Faculty and the Schools of BBCS, SSEH and Psychology reacted in several ways:

1) **Addressing points A and C:**
The Faculty’s director for the offshore program included an extensive session on student rights and responsibilities as UWA students in welcoming sessions for new students from 2010 onwards. These sessions include information on grievances, appeals and complaints policies of UWA. This is now an established component of the welcoming session.

2) **Addressing points B and D:**
BBCS, SSEH and Psychology introduced weekly, one hour lasting consultancy sessions in 2010. These sessions gave students the opportunity to have a face-to-face meeting with senior UWA teaching staff on a one-to-one basis to discuss and obtain advice on a wide range of issues and concerns, e.g. problems associated with their course progress, discuss study and career pathways (e.g. honours), enquire about student rights and responsibilities as a student of UWA and to seek advice on rules and regulations including their rights of review and remarking of exam, other assessments and unit marks.
The sessions were held on a regular basis, Tuesdays 5:30pm to 6:30pm (BBCS) and Thursday 5:30pm to 6:30pm (SSEH/Psychology). Sessions were advertised by PSB Academy well in advance and as regular features. During a three month period, only a very small number of students attended a session, the total number of students during that period was between 10 and 15 from a possible total number of approximately 800. Due to the low uptake, these sessions were subsequently cancelled. Instead it was decided to have advice sessions as an on demand basis. Students can now make an appointment with a senior UWA staff member teaching in Singapore via PSB Academy.
3) **Addressing points B and D:**

The Faculty’s director for offshore teaching offered three seminars in 2010 on ‘Rights and responsibilities of UWA students’. These seminars consisted of a 90 minute session in which the director informed students in a presentation of their rights and responsibilities as UWA students with emphasis on all assessment and exam related questions, questions related to re-enrolments and grievance, as well as appeals and complaints policies. Students were given ample opportunity to ask questions during the presentation and were encouraged to interrupt the presentation at any time to seek clarification and to ask questions related to the topics presented or to other topics which may not have been covered such as specific problems and to make suggestions. The opportunity to ask questions was well received by students and many topics were discussed in great detail. The seminars were held on weekday evenings between 6:00pm and 8:00pm. Each of the seminars was advertised by PSB Academy well in advance and all students were invited to attend. The number of students present during each of the seminars varied between five and ten.

**In addition to the above, a student committee will be introduced with representatives of each of the BSc courses taught at PSB Academy.**

- The representatives will be nominated/elected by Singapore students at PSB Academy and will serve for six months (three terms or one semester).
- The representatives will act on behalf of the student cohort of their enrolment period as contact points for students concerns, questions and suggestions.
- The representatives will meet with senior UWA representatives, once during the presentation ceremony held in Singapore (usually in September) and at second, not yet defined time point ca. six month after the ceremony (ca. March). During such meetings, the representatives will report on concerns, questions and suggestions from their student cohort and will receive feedback and clarification. The representatives will also be informed on the outcomes of previous student feedback.
- The representatives will be asked to report to their cohort.
- The number of representatives is yet to be determined.
- The first set of representatives will be elected one term after the next student intake, i.e. in November 2011.

**Recommendations:**

As advice sessions and seminars were not well attended, they seem inadequate to inform students of their rights and responsibilities as UWA students. Hence, a new set of measures is required that will reach as many as possible of UWA’s students studying at PSB Academy. To ensure that students are well informed, multiple steps are recommended here. **In detail, the following suggestions are made:**

**Addressing points A and C:**

I) **A module on student rights and responsibilities should be included in the Introductory Research and Information Skills for Science unit (IRIS).** Development and financing of such a module needs to be determined.

II) **Each unit outline or WebCT unit page should include a standardised section on student rights and responsibilities as UWA students.** The director for offshore teaching offers to write such a section in consultancy with the manager of the offshore
program. The section will be distributed to unit coordinators for inclusion in unit outlines and to be used on WebCT (and its future replacement).

III) **The first lecture of each unit should have a section on student rights and responsibilities.** This section should be standardised to ensure that all students are informed about the same topics and obtain the same information. The director for offshore teaching offers to design a set of power point slides in consultancy with the manager of the offshore program. These slides will be distributed to unit coordinators to be used in the first unit lecture.