I. **Approval of Council Minutes**

The minutes of the January 23, 2003, meeting of the Graduate Council were approved as submitted.

II. **Professional Master’s Degree Program Issues**

On January 9, 2003, the Graduate Council approved a request from academic departments that are preparing to offer professional science master’s degrees. At that meeting, they asked Don Armstrong (Botany & Plant Pathology) to return on February 13, 2003 to provide more detail about the mentoring of students in these new programs. Armstrong distributed copies of a document that responded to the Council’s request for information.

Graduate students enrolled in Professional M.S. Degree Programs will be provided mentoring and advising support at least equivalent to that provided other non-thesis M.S. students. The graduate programs of these students will conform to the Graduate School requirements common to all non-thesis M.S. degree programs with the exception (that has now been granted) that 6-12 credits of internship will substitute for the customary 3-6 credits of research required on a 45-credit non-thesis M.S. program. Within that framework, we envision the supervision of students in these programs will occur as follows:

1. Each Professional M.S. Program will have a Program Director and a Program Advisory Board that will include representatives from industry. Faculty members of this Board will constitute an Academic Advisory Committee for the Program.

2. Initial orientation and advising for incoming students will be performed by the Program Director or a member or members of the Program’s Academic Advisory Committee to whom this responsibility has been assigned. Graduate programs will be developed and filed for each student according to the usual Graduate School procedures.

3. During each term of the academic year, Professional M.S. students will be required to enroll in a 1-credit Seminar or Reading and Conference course. At least one of these courses will be designed specifically for professional M.S. students and will be under the supervision of the Program Director or a member of the Academic Advisory Committee for
the Program. This course may be used as a common forum for additional organized mentoring and advising activities.

4. Successful completion of an internship experience is a requirement of the Professional M.S. Degree Programs. Planning and securing an appropriate internship will require the active participation of the student enrolled in a Professional M.S. Program. However, assistance in these arrangements will be provided by a part-time staff person specifically assigned to arrange and coordinate internships for the Program or, alternatively, with the assistance of the Program Director or a member of the Academic Advisory Committee for the Program. [The manner in which this assistance will be provided depends upon the resources available to the Program. Ideally, a professional staff person (or persons) would coordinate and arrange internships (estimated 0.2 FTE per program).]

5. For internship experiences, liaison will be established with participating private sector companies and other employers as appropriate. An on-site supervisor will be identified for each internship experience. An informal report (email or phone conversation) will be requested from both the intern and the on-site supervisor midway through the internship experience. At the completion of the internship, the on-site supervisor for the internship will be expected to provide the Program Director with a written evaluation of the intern’s performance. A written report evaluating the internship experience will also be required of the intern.

6. Upon completion of the internship experience, each candidate for a Professional M.S. Degree must pass the oral examination required of all non-thesis M.S. students. This examination is conducted by a faculty committee of at least 3 members. In the case of Professional M.S. students, it is anticipated that at least two members of the examining committee will be from the Academic Advisory Committee and represent the disciplinary area of the Program. The examination will cover course work, the internship experience, and any other areas of the student’s program and training that are deemed appropriate.

Doug Markle (Agricultural Sciences) asked for clarification of the term “private sector” in item #5. Armstrong said that, although other employers allow for the inclusion of public sector internships, the private sector is the usual location for internships. John Selker (Engineering) asked how the program would guarantee a graduate level learning experience in a private sector internship. Armstrong answered that there will be continuing discussion with industry on this point, but most of the program’s current industry contacts seem to understand that internships are to provide professional training opportunities, not just free labor. A related concern for the program is that industry wants students to work longer for an internship than is deemed appropriate by the program faculty. Students who develop internship proposals will be involved in identifying internship learning objectives. Selker argued that, unless internships can be guaranteed to provide true graduate level learning, they should be non-credit courses. Armstrong said that, if the program expands as expected, it will not be possible to give as many students access to the program if research/project is expected of every student who goes through the program or if the internship experience is not for credit. David Brauner (Liberal Arts) said that, based on his experience with internships in Anthropology, he had no problem with internships
for credit because of the mentoring that takes place before, during and after the internship. David Gobeli (Business) stated that the College of Business recently adopted the practice of awarding credit for internships so that they could manage the quality of the internships. Lynda Ciufetti (Science) noted that laboratory rotations, with assigned credits, are used in both the Molecular and Cellular Biology program and graduate programs in Botany and Plant Pathology. Barbara Bond (Forestry) thanked Armstrong for his further work and documentation in response to Council’s earlier questions. The internship expectations are now much clearer. The Council approved the document submitted by Armstrong.

III. Master of Arts in Interdisciplinary Studies Review Report

Vicki Ebbeck (Health and Human Sciences), who chaired the review of the Master of Arts in Interdisciplinary Studies (MAIS) program, presented the final report of the review team. The summary and recommendations are included below:

The Master of Arts in Interdisciplinary Studies (MAIS) degree makes a unique and important contribution to the educational opportunities offered at Oregon State University. It stands to reason that in a complex world with many issues and problems that extend beyond traditional discipline boundaries, an interdisciplinary degree program is a particularly valuable asset to the university and society. Talented students have been attracted to Oregon State University specifically because the MAIS degree has allowed them to examine an area of study from an integrated perspective. The admission requirements are not overly restrictive, which permits promising candidates from diverse backgrounds to apply to the program. Moreover, the program itself is sufficiently flexible that there is plenty of opportunity for truly interdisciplinary exploration and, of course, the faculty representing the different disciplines benefit along with the student when a committee meets to collectively explore a thesis or research project. Clearly there have been some excellent examples of students who have been well advised by supportive faculty and who have thrived on the challenges that the MAIS degree has the potential to provide.

There are, however, several factors associated with the MAIS program that are at odds with the notion that what uniquely defines the MAIS degree is a true interdisciplinary experience. These factors pertain to both the existing degree requirements as well as how the degree is currently being implemented by certain units on campus. For example, at present applicants are not screened for interdisciplinary skills or potential. The MAIS can and certainly has been used as a refuge for weaker students or students who have exhausted all other possibilities at Oregon State University. In addition, there is no mechanism to assure an integrative element in each program of study. Certainly a student must complete credits in three fields of study, but there is no guarantee that the knowledge from the three fields will be integrated. This is especially true when the current requirements for the research paper speak to investigating in depth a subject from possibly one of the three fields of study. In reality, the MAIS often serves as a surrogate discipline-based degree for departments not authorized to offer graduate degrees.
The following recommendations, then, are designed to ensure that the MAIS is a degree program held in high esteem by the university community, interested applicants, and future employers. Some recommendations specifically target issues of quality control. At this time a MAIS student might never take even one graduate-only course. In addition, some students never feel as if they really belong to any one department and the quality of advising they receive can vary dramatically. This finding no doubt is influenced by how central the MAIS program is to any one department in terms of graduate degree offerings and is probably also influenced by the fact that currently departments do not receive any credit for working with MAIS graduates. Other recommendations speak more to a re-constituting of how the MAIS is viewed. It is imagined that only a relatively small number of graduate students across campus would pursue the MAIS degree having determined that they are interested in interdisciplinary work. Technically interdisciplinary work can be accomplished with the integration of only two disciplines or departments and, indeed, most discipline-based degrees require coursework from a second department. What will distinguish the MAIS, however, is that it will require the acquisition of knowledge from three departments and evidence that the information gained can be integrated.

**Primary Recommendations**

- Establish a clear vision of the educational purpose of the MAIS that should be to provide students with a true interdisciplinary experience.

- Require three different fields of study in a MAIS program with no two fields of study from the same department.

- Eliminate the requirement that one of the fields of study be from the College of Liberal Arts.

- Each applicant should identify the intended primary field of study and, if the applicant is accepted, the department representing the primary field should take responsibility for and be credited with the MAIS graduate student.

- Require each applicant when completing his or her letter of intent to describe an issue that lends itself to an interdisciplinary perspective and offer a plausible suggestion of how two or more specifically identified disciplines could be integrated to address the issue.

- Require that at least 50% of the credits (excluding blanket-numbered credits) on any MAIS program of study be graduate-only courses.

- Require that every MAIS thesis or research paper integrate at least two of the three fields of study.
Secondary Recommendations

• Offer a Master of Science in Interdisciplinary Studies (no language requirement) as well as a Master of Arts in Interdisciplinary Studies (language requirement consistent with a Master of Arts degree).

• Form a MAIS Advisory Committee comprised of representatives from the Graduate School and faculty involved with the MAIS degree to be responsible for reviewing and improving degree requirements and implementation.

• Clarify the operational differences between the thesis and research project options.

• Require that an MAIS program committee chair from the intended primary field be identified before an applicant is accepted to the MAIS program to facilitate the advising process.

• Require at least one integrative course in every MAIS program of study (e.g., Systems Thinking and Practice that is cross-listed as BA 565, ENGR 565, H 590, and HORT 590).

Sally Francis (Graduate School) thanked the review team and said that the Graduate School has begun considering the review. Robert Frank (Associate Dean of the College of Liberal Arts [CLA] and chair of the committee that created the self-study) thanked the review team and asked about the recommendation that no two fields of study be from the same department. He explained that CLA has many departments that are umbrella departments. An example would be the Department of Foreign Languages, which includes areas in three different languages plus a more general area allowing study of linguistics; at other universities each area (i.e., language) could be a separate department. Current MAIS rules allow a student to include two languages on an MAIS program of study; the proposed change would limit such studies. He noted that future merging of departments or programs to create units with multiple disciplines may pose a barrier for students who might be able to put together a particular interdisciplinary degree elsewhere but could not do so at OSU. Brauner said that the current use of the MAIS to allow inclusion of both archeology and anthropology in his department would also suffer from this change. Except for that concern, Frank supported the report. Brauner agreed that the recommendations are excellent, but he was concerned about the recommendation that MAIS programs require a foreign language. It was explained that the committee suggests adding a new Master of Science in Interdisciplinary Studies that would not include a language requirement.

Selker asked how many departments in the College of Liberal Arts do not have master’s degrees and how well the MAIS serves the students from the departments for which it is the only graduate degree. Frank said that English, Anthropology, History, and Economics are the only departments in CLA that have disciplinary work at the graduate level. Other departments in CLA have access only to interdisciplinary degrees including the MAIS. Three-fourths of the departments in CLA have access only to interdisciplinary graduate degrees. In response to a question from Gobeli concerning the lack of master’s degrees within CLA departments, Frank repeated his concern about limiting the MAIS by requiring three different departments.
In response to concern about the recommendation to “Require three different fields of study in a MAIS program with no two fields of study from the same department,” Gobeli asked for clarification of the terms discipline, field of study, and department. Selker suggested that using degree program might be clearer. Based on experience in Anthropology, Brauner agreed with Gobeli’s suggestion that discipline be substituted for department in the recommendation. Gobeli pointed out the use of the term department at the top of page two in the report. As written it would have some real meat but changing the intent by again saying that only two departments need to be represented in the degree takes it away. Ebbeck said that the review team intended to use the term department to stop inappropriate use of MAIS degrees as disciplinary degrees that had not been approved through established procedures. Bond pointed out that many departments include work in more than one discipline. She concluded that departments and disciplines are only loosely related. For example, the College of Forestry has a Wood Science and Engineering Department that hires all chemists, but that department is completely separate from the Chemistry Department.

The topic shifted to requiring integration regardless of the number of departments. Ebbeck said that requiring some true integration between at least two fields in the thesis or research-in-lieu-of-thesis was a step toward real interdisciplinarity. The review team hoped that this first step would lead to a true integration of all three fields because of the added rigor needed to integrate those fields. Ebbeck pointed out that, because there are many degrees that are typical discipline-based degrees, creating a truly unique interdisciplinary integration within a MAIS degree would require at least two, and preferably three different areas. Brauner reported that Anthropology has found it extremely difficult to integrate three different areas within a thesis. Brauner and Selker argued that blending three areas tends to create a multidisciplinary rather than an interdisciplinary program.

Bond asked whether MAIS students have problems being placed in careers after receiving their degrees and Gobeli asked how MAIS students market their degrees. Brauner said that those who emphasize the fact that they have multiple skills are more successful than those with a disciplinary master’s degree who are perceived as being one-dimensional.

Elaine Pedersen (Health and Human Sciences) expressed her enthusiasm for the recommendation to eliminate the requirement that one field must be from CLA and said that this will provide potential for new and creative programs of study. Selker, noting the lack of a recommendation for a director of the MAIS program, said that the Council supports the identification of a person or persons to direct the program. Francis said that the Graduate School is directed to oversee many of the interdisciplinary programs. In some instances, this generates resources for the program from the different departments represented in the interdisciplinary program. It was suggested that the Provost’s Fund for Excellence could be used to sustain the coordination of the MAIS degree program. Selker said that the lack of “someone” to send the report to points out the true lack of direction of the program. Ciufetti supported the creation of a continuing advisory committee.

Although the lack of a language requirement could be useful to engineers, Selker wondered whether a true “art” person should receive a Master of Science degree. Ebbeck responded that
the review team was trying to build consistency into the nature of the program; because a language requirement is not a part of the MAIS the name should be changed to the Master of Science in Interdisciplinary Studies. Bond asked whether computer languages fulfill the language requirement for a Master of Arts degree and was told that they do not. Tony Collins (Pharmacy) suggested that the name be Master of Interdisciplinary Studies, but Francis pointed out that this would require the creation of a different degree and would not be just a renaming of an existing degree. In response to Ciuffetti’s observation that every Master of Arts degree requires a foreign language, Selker said that he was comfortable with allowing an exception to the rule that foreign language requirements are necessary for all Master of Arts degrees.

The Council accepted the report as presented. The Council also strongly recommended the hiring of a director for the MAIS degree program and endorsed the recommendation to create an advisory committee for the program.

IV. Criteria for Graduate Level Coursework

Bond introduced a document prepared by the Council’s subcommittee that reviews new graduate course proposals (see Expectations for Graduate-Level Teaching, and Differentiation between Undergraduate and Graduate Components of “Slash” Courses below). She also noted that, even in high school, some of the higher levels of learning are expected. The appendix to the document includes some verbs that could be used in course syllabi for graduate students; these would clarify course expectations and might improve the likelihood that the 500 component of slash courses would provide truly graduate level learning. Brauner said that these guidelines have already been useful for his own writing of a proposal for a new course. Markle said that he shared the report with several colleagues who did not respond well to it. However, he expressed support for using these as new guidelines. Collins asked what steps would be taken if the new guidelines were adopted and students continued to complain about the absence of graduate level learning in slash courses. Francis challenged the Council to look at the question, “If I was looking for genuine graduate level learning, what would it look like that is separate and distinct from undergraduate level learning?” Does the language of the report guide us in making the distinction? Bond pointed out that the word “differentiation” comes from the language used in the Graduate Council policy of 1992 that created “slash” courses and that the policy perhaps needs to be changed.
Expectations for Graduate-Level Teaching, and Differentiation between Undergraduate and Graduate Components of “Slash” Courses

**Background:** The OSU Graduate Council policy (1992) on differentiation of graduate and undergraduate components of dual-listed courses (400/500 combination) states:

In dual listed 400/500 level courses, a distinction should be made between those students taking the course for undergraduate credit (400 level) and those taking the course for graduate credit (500 level). This distinction could be in the form of additional work required and/or a higher grading standard for the 500-level credit, or some other appropriate means identified by the instructor.

The policy is not clear about the nature of the “additional work” and “higher grading standards” that should be required for graduate students. This had led to a great deal of confusion about how to differentiate between the graduate and undergraduate components of dual listed courses. The Task Force on Graduate-Level Learning reported in 2001 that nearly half of the instructors of dual-listed courses who responded to a survey reported that they were “not at all” or “only minimally” familiar with requirements for additional expectations of the graduate component for dual listed courses. In classes where there is a clear differentiation, by far the most common approach is to require “an additional, or longer, term paper or lab report.” However, half of the graduate students enrolled in courses with such policies felt the courses did not provide a high-quality graduate-level experience. The Task Force concluded that there is a need for Graduate Faculty to be trained concerning University expectations for Graduate teaching.

**The problem:** In light of the 1992 policy for differentiation in “slash” courses, the Graduate Council committee that is responsible for reviewing Category II proposals (the “cat II review committee” – Fisk, Sanchez, Bond) must determine whether proposals for new “slash courses” include appropriate differentiation between the graduate and undergraduate components. As far as we know, there is no standard or policy at OSU concerning expectations for Graduate teaching, so committee members must use their own best judgments. All three current members of the committee feel that this distinction is inadequate in many, and probably most, course proposals. Not surprisingly, the faculty members who submit the proposals are often frustrated when they are asked to enhance the differentiation between the 400 and 500 components of their proposed courses. The cat II review committee concludes that there is a need to define University expectations for Graduate teaching.

**A proposal:** To this end, a change is proposed in the wording of the Graduate Council policy on differentiation of graduate and undergraduate components of dual-listed courses. This new policy, with the three additional paragraphs of explanation and accompanying appendix, should be distributed to all members of the Graduate Faculty and to all units that offer graduate-level courses.

Proposed 2003 Graduate Council policy on differentiation of graduate and undergraduate components of dual-listed courses (400/500 combination) “In dual listed 400/500 level courses, a distinction should be made between learning outcomes for students taking the course for
undergraduate credit (400 level) and those taking the course for graduate credit (500 level). *This
distinction should include emphasis on developing skills in analysis, synthesis, and/or
evaluation for the 500-level credit, as opposed to, or in addition to, acquisition of knowledge,
comprehension and application of information, which are more characteristic of
undergraduate curricula. The different student learning outcomes should be accompanied by
appropriate differences in instructional opportunities and evaluation procedures.*

It is expected that all courses at OSU, both at the graduate and undergraduate level, will be
designed around well-defined student learning outcomes. Student learning outcomes encompass
the range of student attributes and abilities, both cognitive and affective, that students should
acquire after successful completion of the course. Cognitive outcomes include demonstrable
acquisition of specific knowledge and skills: what do students know that they didn't know
before, and what can they do that they couldn't do before? Affective outcomes include change in
students' values, goals, attitudes, self-concepts, world views, and behaviors.

The primary distinction between undergraduate and graduate courses should be in the quality of
learning outcomes as opposed to the quantity of work. Bloom’s taxonomy (Bloom, 1956; also
see appendix 1) provides a possible basis for ranking the quality of cognitive learning outcomes.
These are (from lowest to highest-order), 1. knowledge, 2. comprehension, 3. application, 4.
analysis, 5. synthesis, 6. evaluation.

Whereas learning outcomes in undergraduate courses are likely to focus primarily (although not
exclusively!) on *knowledge, comprehension and application*, learning outcomes in most graduate
courses, including the graduate component of 400/500 dual listed courses should include,
*analysis, synthesis and evaluation.*
## Appendix 1. Explanation of the 6 levels of cognitive competency in Bloom’s Taxonomy

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<th>Competence</th>
<th>Skills Demonstrated</th>
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<td><strong>Knowledge</strong> of terminology; specific facts; ways and means of dealing with specifics (conventions, trends and sequences, classifications and categories, criteria, methodology); universals and abstractions in a field (principles and generalizations, theories and structures): Knowledge is (here) defined as the remembering (recalling) of appropriate, previously learned information.</td>
<td>• observation and recall of information&lt;br&gt;• knowledge of dates, events, places&lt;br&gt;• knowledge of major ideas&lt;br&gt;• mastery of subject matter&lt;br&gt;• <strong>Question Cues:</strong> list, define, tell, describe, identify, show, label, collect, examine, tabulate, quote, name, who, when, where, etc.</td>
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<td><strong>Comprehension</strong>: grasping (understanding) the meaning of informational materials.</td>
<td>• understanding information&lt;br&gt;• grasp meaning&lt;br&gt;• translate knowledge into new context&lt;br&gt;• interpret facts, compare, contrast&lt;br&gt;• order, group, infer causes&lt;br&gt;• predict consequences&lt;br&gt;• <strong>Question Cues:</strong> summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend</td>
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<td><strong>Application</strong>: the use of previously learned information in new and concrete situations to <em>solve problems that have single or best answers.</em></td>
<td>• use information&lt;br&gt;• use methods, concepts, theories in new situations&lt;br&gt;• solve problems using required skills or knowledge&lt;br&gt;• <strong>Questions Cues:</strong> apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover</td>
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<td><strong>Analysis</strong>: the breaking down of informational materials into their component parts, examining (and trying to understand the organizational structure</td>
<td>• seeing patterns&lt;br&gt;• organization of parts&lt;br&gt;• recognition of hidden</td>
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of) such information to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations.

**Synthesis:** creatively or divergently applying prior knowledge and skills to produce a new or original whole.

**Evaluation:** judging the value of material based on personal values/opinions, resulting in an end product, with a given purpose, without real right or wrong answers.

- means
  - identification of components
  - *Question Cues:* analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer
  - use old ideas to create new ones
  - generalize from given facts
  - relate knowledge from several areas
  - predict, draw conclusions
  - *Question Cues:* combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite
  - compare and discriminate between ideas
  - assess value of theories, presentations
  - make choices based on reasoned argument
  - verify value of evidence
  - recognize subjectivity
  - *Question Cues*
    - assess, decide, rank, grade, test, measure, recommend, convince, select, judge, explain, discriminate, support, conclude, compare, summarize