Carolyn,
I asked Dr. Nama Kang to chair a committee to provide feedback on your proposal for the MAT at Cascades. They took a very thorough look at your plans and reflection on the relationship of an MAT and MS degrees. I would be please to answer any questions you have. But I urge you to contact Nama directly related to her committee's thinking.

Larry

Lawrence B. Flick, Professor & Chair
Department of Science and Mathematics Education
College of Science — Oregon State University
253 Weniger Hall, Corvallis, OR 97331
541-737-3664 (voice) 541-737-1817 (FAX)
FlickL@science.oregonstate.edu
http://smed.science.oregonstate.edu/

Begin forwarded message:

From: Namhwa Kang <kangn@imap.science.oregonstate.edu>
Date: June 7, 2011 12:35:08 PM PDT
To: Lawrence Flick <flickl@science.oregonstate.edu>
Cc: SueAnn Bottoms <SueAnn.Bottoms@oregonstate.edu>, higginsk@oregonstate.edu, Ron Gray <ron.gray@science.oregonstate.edu>
Subject: Cascade MAT feedback

Larry,

We had a productive meeting this morning regarding the Cascade MAT program. We came up with the following recommendations:
1. We suggest that the MAT program runs as one program with four tracks including science and math education.
2. As one program, the MAT could use the current courses including pre-requisites that all students in the four tracks can take together.
3. Each track can be differentiated in the following ways: (1) taking two subject-specific pedagogy courses and (2) 9 credit content courses.

The suggestions are based on two main considerations: (a) differentiations between MAT and MS and (b) resources on Cascade campus. We believe that the differentiation between the MAT and MS would also help NCATE and TSPC.

Karen strongly recommended for the Cascade to use Studio classes in Bend.

Hope this helps.

Nama
Extend from OSU-Main to OSU-Cascades

MAT: Integrated Science Education Area of Concentration
MAT: Advanced Mathematics Education Area of Concentration

Oregon State University
College of Education and OSU-Cascades
CPS Tracking #83047
December 2011

1. Program Description
   a. Program title, level:
      • This proposal seeks to extend the Master of Arts in Teaching (MAT) in Integrated Science Education and the MAT in Advanced Mathematics Education from OSU-Main to the OSU-Cascades branch campus. OSU-Cascades has previously been granted approval to offer the MAT in Language Arts Education (that includes the MAT in Social Science Education) for those students seeking licensure to teach at the middle and high school grade levels.
      • CIP #s: 131311 – Teaching: Advanced Mathematics Education
        131316 – Teaching: Integrated Science Education

Table 1: Classification of Instructional Programs (CIP) Numbers:

<table>
<thead>
<tr>
<th>CIP #:</th>
<th>Title:</th>
<th>Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>131311</td>
<td>Mathematics Teacher Education.</td>
<td>A program that prepares individuals to teach mathematics programs at various educational levels.</td>
</tr>
<tr>
<td>131316</td>
<td>Science Teacher Education/General Science Teacher Education.</td>
<td>A program that prepares individuals to teach general science programs, or a combination of the biological and physical science subject matter areas, at various educational levels.</td>
</tr>
</tbody>
</table>

(Source: US Department of Education, National Center for Educational Statistics, CIP 2010 ed.)

b. OSU Main campus department and school/college under which the program is offered:
   • Department of Teacher and Counselor Education, College of Education

c. Who will be the administrators of the OSU-Cascades program?
d. Briefly describe the academic program, and provide a program degree audit sheet that lists all courses (including number of credits) and indicate how each course will be offered at OSU-Cascades [resident course (COCC, OSU) distance education, web, etc.].

Table 2: Proposal Summary: MAT in Integrated Science Education and MAT in Advanced Mathematics Education

NEW

- **Degrees:**  MAT in Integrated Science Education (CIP #: 131316)  
  MAT in Advanced Mathematics Education (CIP #: 131311)
- **Academic Units:**  Department of Teacher and Counselor Education,  
  College of Education and OSU-Cascades
- **Course Designators:**  TCE and SED (existing)
- **Proposed Effective Term:**  Summer Term 2012 (Banner: 201300)

The academic program is the OSU Master of Arts in Teaching offered through the College of Education’s Professional Teacher Education Program. Currently OSU-Cascades, by MOU approval, offers the MAT in Language Arts Education for pre-service teachers who wish to teach at the secondary level (5th-12th grades). This program (which includes course work, clinical experience and national exams) complies with the licensure standards and requirements of the Oregon Teacher Standards and Practices Commission (TSPC) to teach language arts or social studies upon successful completion of the degree program. Students receive an Oregon Initial 1 teaching license in addition to the Masters’ degree.

The intent of this proposal is to extend the current MAT degree in Integrated Science Education and MAT in Advanced Mathematics Education, housed at OSU-main campus, to the OSU-Cascades campus for students who wish to teach middle and high school math or science. The degree name would be Master of Arts in Teaching in either Integrated Science Education or Advanced Mathematics Education, depending on the concentration of courses, the student teaching experience, and the national exams the student completes.

The original OUS approval for OSU to offer an MAT included the science and math tracks. The MAT degree has since extended to the Cascades campus in the form of an
MAT in Language Arts Education and Corvallis now offers a Masters in Science Education (MS) and a Masters in Mathematics Education (MS). Faculty in Corvallis’ Science and Math Education department (SMED) and the College of Education reviewed this MAT MOU in relation to the MS degree awarded on main campus and offered the following recommendations:

1) That the MAT program runs as one program with areas of concentration (endorsements—language arts, social studies, science and math);
2) That all students take several of the current MAT educational theory and pedagogical courses together; and
3) That each area of concentration (endorsement for licensure) be differentiated in the following ways: (1) taking subject specific pedagogy courses (language arts, math or science education) and (2) graduate level content courses (English, math, science) in support of the specific MAT degree program.

The faculty goes on to state, “These suggestions are based on two main considerations: (a) differentiations between MAT and MS; and (b) resources on the OSU-Cascades campus. We believe that the differentiation between the MAT and MS [degrees] would also help NCATE [our national program accreditation body] and TSPC.” (Dr. Namhwa Kang, email correspondence to Dean Flick, June 7, 2011)

The MAT degree is generally considered to be a pre-service degree that requires education classes in order to meet state licensure requirements, and emphasizes advanced course work in a specific academic discipline to enhance one’s knowledge in that subject area. Furthermore, it focuses on educating the candidate in practical teaching skills for use as a teacher, as opposed to focusing on performing research in the educational field, which is traditionally the MS degree. The MAT degree is often advantageous to middle school and secondary school teachers because it allows them to focus on subject area knowledge in their undergraduate program and then acquire pedagogical skills in their graduate studies.

The original MAT approved for OSU in 1991 consisted of a minimum of 48 graduate credits distributed as follows:

- Six hours of graduate professional core courses in Education Foundations,
- Eighteen to twenty one hours of graduate professional course work in the teaching specialty,
- Fifteen to eighteen hours of graduate professional internship, and
- Nine hours of graduate electives in subject matter specialization.

This proposal calls for a minimum of 68 graduate credit hours, which brings the MAT in Integrated Science Education and the MAT in Advanced Mathematics Education in line with the current MAT in Language Arts Education.

The MOU for the MAT to be offered at the OSU-Cascades campus (approved in 2009) changed the required number of graduate elective credits in subject matter specialization from nine to “between 6 and 8 hours”, and the current MAT with the Language Arts area of concentration follows that requirement.
The MAT for the preparation of secondary teachers is designed “considering empirical research on teaching. Students completing the program will have expert knowledge both in their academic fields and in pedagogical knowledge....Acquisition of the pedagogical content knowledge, gained by teaching experience, requires not only the depth and breadth in each of the knowledge bases, but also in a heavily field-based program stressing reflection upon subject matter, instructional decision and their consequences in the classroom.” (Proposal for the Initiation of a Master of Arts in Teaching, Oregon State University College of Education Extended OSSHE Format for Category 1 Proposals, 1990).

In addition to the course requirements for MAT degree completion, students must submit a Professional Portfolio and sit for an oral examination in the final term of enrollment. These requirements are coordinated through TCE 524, the capstone course entitled “Teacher as a Reflective Practitioner”. Graduate School approved faculty from TCE sit on the orals and score the portfolios, and the addition of mathematics and science education student orals will not require any further staffing for the oral exams.

The target date for beginning enrollment for this academic program is June 25, 2012. The MAT program at OSU-Cascades is based on a cohort model in which all members begin the program coursework in the summer term together. Approval for the extension of this MAT will need to occur by the end of February 2012 in order to accept applications for admission and obtain student teaching placements, which begin in the late summer.

The existing MAT in Language Arts Education degree at OSU-Cascades operates in full cooperation with the Corvallis faculty and extending the graduate education degree to an MAT in Integrated Science Education and an MAT in Advanced Mathematics Education builds upon an existing focus on Science, Technology, Engineering and Mathematics (STEM) education at OSU. OSU-Cascades has a strong core MAT in place, one that is recognized by school districts throughout Oregon and, increasingly, the nation, as well as by the Teacher Standards and Practices Commission (TSPC)-- the state educators’ licensing board. The Central Oregon school districts have asked us to move forward with the extension of the MAT to science and mathematics as quickly as possible, as they are currently employing temporary teachers with emergency licenses who have no pedagogical training in the teaching of these subjects.

Audit sheets for the MAT in Integrated Science Education and the MAT in Advanced Mathematics Education appear below. Each area of concentration would build upon the approved graduate professional core and professional internship offerings around which the OSU-Cascades MAT in Language Arts Education is centered. Students enrolled in the science or mathematics areas of concentration would add the appropriate math and science methods coursework as well as graduate level content work.

All courses would be offered at OSU-Cascades by Graduate School approved faculty. OSU-Cascades has faculty in place to teach the Professional Core classes, the internship course work, and staff the oral examinations. OSU-Cascades will hire a full-time, tenure track faculty member to teach six of the SED courses, plus adjuncts who are teachers of
science and math in the secondary schools for the additional six courses to be taught in SED. The graduate level subject specific course work in math or science will be taught by the math and science faculty already in place at OSU-Cascades.

**Graduate Professional Core Classes in Education Foundations**

- TCE 512 (3): Psychology of Adolescents
- TCE 520 (3): Classroom Management and Discipline
- TCE 524 (2): Teacher as a Reflective Practitioner (Capstone)
- TCE 528 (3): Using Assessment to Improve Instruction
- TCE 545 (3): Planning Curriculum Aligned to Standards
- TCE 549 (3): Teaching in a Differentiated and Diverse Classroom
- TCE 599 (1): Professional Formation

**CREDITS: 18**

**Math or science endorsements subject specific pedagogy**

- SED 511 (3): Analysis of Classrooms I
- SED 512 (3): Technology Foundations for Teaching Math and Science
- SED 513 or 514 (3): Inquiry in Science and Science Education OR Inquiry in Mathematics and Mathematics Education
- SED 515 (3): Analysis of Classrooms II
- SED 518 (3): Analysis of Classrooms III
- SED 552 or SED 553 (3): Mathematics Methods: Practicum I OR Science Methods: Practicum I
- SED 573 or 574 (4): Science Pedagogy and Technology 1 OR Mathematics Pedagogy and Technology I
- SED 576 or 577 (4): Science OR Mathematics Pedagogy II

**CREDITS: 26**

**Graduate Professional Internship**

- TCE 509 (3): Practicum/First student teaching placement
- TCE 510 (13): Internship/Second student teaching placement
  
  **NOTE:** 509 and 510, spread over 3 terms, gives our students the authorization to teach in Middle and High School levels

**CREDITS: 16**

**Math or Science Graduate Content Coursework**

- Graduate work at the 500 level will support the specific MAT area of concentration and will meet the approval from the corresponding Corvallis faculty.

**CREDITS: 6-8**

e. **Indicate in what ways the proposed program at OSU-Cascades will differ from the OSU main campus program:**

The proposed design of the MAT in Integrated Science Education and in Advanced Mathematics Education follows the approved MAT for OSU and OSU-Cascades. The specific program minimum
requirements listed in 1.d. for the degree audit closely parallel those of the original CAT 1. At the same time, the intended specific course selections to fulfill the graduate professional course work in the teaching specialty closely parallel the course work in the MS on the main campus. OSU main campus has chosen to offer the MS degree in Science or Mathematics Education because of its organizational association with the College of Science. OSU approved the MAT degree being offered at OSU-Cascades seven years ago with the MAT in elementary education and three years ago with the MAT in Language Arts Education (that includes social science) for the secondary level authorization in teaching. The MAT at Cascades is “already crafted as a very high quality program in concert with the Corvallis MS [degree]” (Dean Larry Flick, email correspondence, October 21, 2011 to Dr. Platt) and the addition of the science and mathematics areas of concentration will assure that the nature of the master’s level Professional Teacher Education Licensure and Masters Programs will extend the teaching practices, content and research to OSU-Cascades’ campus.

f. List any special requirements or pre-requisites for admission to the program at OSU-Cascades:

Students must demonstrate the following criteria:

- Completed bachelor’s degree from an accredited higher education institution (prior to enrollment).
- Minimum GPA of 3.0 in the last 90 quarter hours of graded undergraduate work and all work completed thereafter.
- Competence in science or math demonstrated through the completion of appropriate course content work.
- 60 hours of volunteer and observation experience with middle and high school students, with at least 30 hours in the public school classroom.
- Effective oral and written communication.
- Completion of TCE 560 Research in Learning (or equivalent) and TCE 499 Civil Rights in Education.
- Satisfactory answers to “good conduct” questions as required by the Oregon Teacher Standards and Practices Commission (TSPC)
- Sincere and appropriate desire to become a public school teacher and an understanding of the demands placed on a teacher.
- Passing results on: (1) either the EAS, California Basic Education Skills Test (CBEST) or all three subtests of the PRAXIS PPST, (2) the ORELA multiple subjects’ exam, (3) the ORELA Civil Rights exam, and (4) the NES content exams required for licensure in the endorsement area (language arts, social studies, math or sciences).

g. Is there an accrediting agency or professional society that has established standards for this program? If so, is the program currently accredited? If accredited, what steps would be needed to ensure that accreditation is maintained vis-à-vis the OSU-Cascades offering? Does the accrediting body require notification of the program offering at a new location?

The OSU-Cascades MAT programs are nationally accredited through the National Council for Accreditation of Teacher Education (NCATE) as well as regionally accredited through the Northwest Commission on Colleges and Universities (NWCCU). Additionally, OSU-Cascades is approved to offer professional teacher licensure programs by the Oregon Teacher Standards and Practices Commission (TSPC).
2. Demand
a. List any similar programs offered at the proposed or nearby location.

OSU-Cascades currently offers an MAT in Elementary Education as well as an MAT in Language Arts Education. Other universities such as George Fox University and Eastern Oregon University offer the MAT in a hybrid (distance and limited location) model. There is consistent and very strong support for OSU resident graduate programs in education for Central Oregon by regional superintendents, teachers, school boards and community patrons.

b. Provide evidence of need for the program at the new locations.

The extension of the MAT in Integrated Science Education and in Advanced Mathematics Education is central to President Ray’s vision for the OSU-Cascades’ campus and Central Oregon region as a strong presence in STEM (Science, Technology, Engineering, and Math) practice and research. The education of excellent math and science teachers in the middle and high school levels is a well-documented national need. The superintendents of our six Central Oregon school districts have asked OSU-Cascades to extend the MAT to science and math to fulfill the vacancies for teachers in these subject areas. Currently, local school districts have had to hire some math and science teachers without any pedagogical background via provisional/emergency licenses.

c. Estimate enrollment and number of graduates over the next five years. Will any enrollment limitation be imposed? If so, how will prospective students to be enrolled be selected?

OSU-Cascades plans to award between 10 and 20 MAT in Integrated Science Education and MAT Advanced Mathematics Education degrees per year over the next five years:

- Year 2012: 10 degrees
- Year 2013: 15 degrees
- Year 2014: 15 degrees
- Year 2015: 20 degrees
- Year 2016: 20 degrees

OSU-Cascades utilizes a Cohort model, with the students commencing their program in the summer term. Enrollment limitation would be subject to funding, staffing requirements prescribed by NCATE, and student teaching placement opportunities. Prospective students will be selected through the criteria outlined above with particular attention paid to academic ability, depth of knowledge in content area, experience with middle and high school students, and dispositional characteristics that indicate the likelihood of professional success in the classroom.

3. Personnel
a. List the names and qualifications of faculty (regular and adjunct) who will be involved in delivering the program at OSU-Cascades, and their tentative teaching assignments. Will new faculty be needed?

OSU-Cascades will hire one full-time, tenure track, faculty member with STEM Education background who will serve as course instructor, advisor, and act as liaison with STEM research on the main campus. This person will be expected to teach six courses. (This is the teaching load specified for tenure track, full time faculty at OSU-Cascades.) In addition, we will continue our instructor model that works closely with the Central Oregon school districts to identify talented practitioners to teach as adjuncts for the
remaining six methods courses. We will also nominate to the Graduate School current OSU-Cascades science and math faculty to teach the graduate level content courses once these people are determined.

Adjunct instructors at OSU-Cascades are paid per course they teach. In addition to the contracted amount for the course, OSU-Cascades pays into the PERS or other benefit program in which the instructor is invested (a percentage amount based on the number of courses being taught).

Current faculty who will continue to teach core professional courses in the MAT program include:

- **Jay Casbon, Ed.D.:**
  - TCE 499 Civil Rights in Education
  - TCE 560 Research in Learning

- **Dennis Lynn, Ph.D.:**
  - TCE 512 Psychology of the Adolescent

- **Phil Hoffman, Ph.D.:**
  - TCE 520 Classroom Management and Discipline

- **Carolyn Platt, Ph.D.:**
  - TCE 524 Teacher as a Reflective Practitioner
  - TCE 560 Research in Learning
  - TCE 599 Professional Formation

- **Cate Denson Hill, MAT:**
  - TCE 549 Teaching in a Differentiated and Diverse Classroom

- **Laura Sugden, MAT:**
  - TCE 545 Planning Curriculum Aligned to Standards
  - TCE 525 Curriculum Implementation & Instructional Strategies
  - TCE 528 Using Assessment to Improve Instruction

- **Ann Owings Allred, MAT:**
  - TCE 509 Practicum-First Authorization
  - TCE 510 Internship-Second Authorization

**New Hires:** One new, full time, tenure track, SMED faculty member will be hired to teach six of the following courses, as well as adjuncts to teach the remaining six courses, to be approved by the Graduate School:

- **SED 511 (3):** Analysis of Classrooms I
- **SED 512 (3):** Technology Foundations for Teaching Mathematics and Science
- **SED 513 or 514 (3):** Inquiry in Science and Science Education OR Inquiry in Mathematics and Mathematics Education
- **SED 515 (3):** Analysis of Classrooms II
- **SED 518 (3):** Analysis of Classrooms III
- **SED 552 or SED 553 (3):** Mathematics Methods: Practicum 1 OR Science Methods: Practicum I
- **SED 573 or 574 (4):** Science Pedagogy and Technology 1 OR Mathematics Pedagogy and Technology I
- **SED 576 or 577 (4):** Mathematics Pedagogy and Technology II OR Science Pedagogy and Technology

**b. Estimate the number and type of support staff needed to provide the program at the new location.**

OSU-Cascades has in place the support staff needed for this program and they include:
Placement Coordinator: 1 (will move from .49 to .75 FTE) This person secures and coordinates the student teaching placements.

Licensure and Administrative Coordinator: 1 (already 1.0 FTE) This person coordinates all testing and licensing requirements, as well as annual state and national accreditation reports.

Educational Librarian: 1 (already at 1.0 FTE)

We will need to hire two Student Teacher Evaluators, one who is licensed to teach in Oregon and endorsed in mathematics, and one who is licensed to teach in Oregon and endorsed in science, who will work on a part-time basis, with the amount of appointment to be dependent upon the number of enrolled students in student teaching practicums and internships. These field evaluators are paid on a formula based on number of students they oversee, number of visits made to the site, and the distance to the site. There are fees attached to the student teaching internship courses (TCE 509 and 510) to cover these costs.

The new and expanded hires are reflected in the budget submitted with this proposal. Please see the budget notes as well for clarification.

4. Other Resources

a. Describe facilities necessary to offer the program at the new locations.

Classroom and support facilities are in place in the OSU-Cascades building (Cascades Hall) and will be available in the new building for OSU-Cascades into which the graduate programs will move in early June. Laboratory sections of the science courses will meet in middle school and high school labs in the Bend LaPine schools, as well as in the laboratory classroom in Cascades Hall. All classrooms are multi-media equipped. The educational library is incorporated into the Central Oregon Community College/OSU-Cascades Library.

b. Indicate how library needs will be met.

Library Support for the MAT in Advanced Mathematics and MAT in Integrated Science Education Areas of Concentration on OSU-Cascades Campus

OSU-Cascades’ library services offers the collections and services described below in support of the proposed MAT in Advanced Mathematics and MAT in Integrated Science Education Concentrations at the OSU-Cascades Campus. Portions of the curriculum for this program are identical to the existing MAT Secondary education programs and similar to existing programs in Corvallis so OSU Libraries already provides much of the support the program is expected to need.

Periodicals

OSU Libraries provides access to the article databases essential for education research including ERIC, Education Research Complete, and PsycINFO. In addition to the many titles available electronically through these subscriptions, the Libraries also subscribe to core journals publishing research in Education and related fields. Periodicals are purchased electronically whenever possible, providing equal access to students and faculty regardless of campus.

Currently the Valley Library receives print subscriptions to the National Council of Teachers of Mathematics publications. Of particular interest to the secondary program will be The Mathematics Teacher and Mathematics Teaching in the Middle School. Articles from these print journals are available to Cascades students and faculty through the Scan and Deliver program which sends scanned copies of materials held by the Valley Library to requestors’ email, generally within 24 hours. If Cascades decides immediate access to these titles is crucial, the titles are available to institutions for $104 per year (each.) An additional NCTM publication, The Journal of Research in Mathematics Education is also available via Scan and Deliver or Cascades could add a print subscription for $161 annually.
The Libraries also subscribe to the National Science Teacher Association titles *Science Scope* and *The Science Teacher*. These are available electronically back to around 2005 and older volumes are held at the Valley Library and available to OSU-Cascades faculty and students through the Scan and Deliver service.

**Monographs and Media**

OSU-Cascades currently maintains a strong local collection of education materials purchased to complement the collection at Valley Library. We anticipate some additional need for materials that specifically cover mathematics and science education theory and pedagogy at the middle and high school level. An additional $500 per year for at least the first two years would allow the library to purchase, in consultation with the faculty, any needed core materials.

OSU Libraries also participate in Summit, a consortium of academic libraries in Oregon, Washington, and now Idaho. This participation gives OSU-Cascades faculty and students access to the collections (both books and videos) of more than 35 additional libraries, twenty of which also offer masters-level education programs.

c. **Indicate how students at the new location will receive student services (e.g. academic advising):**

OSU-Cascades has a complete student services and academic support system in place to serve its students, including academic advisors, counselors, career services and student activities. The in-program faculty in TCE does the bulk of advising for MAT students. The Licensure Coordinator assists in advising on licensure issues.

5. **Budgetary Impact**

a. **Indicate the estimated cost of the program for the first four years of its operation. Use the Budget Outline and Budget Outline instructions forms on the Forms and Guidelines website.**

OSU-Cascades funds its program costs, as well as all administrative costs, through the tuition revenue generated by FTE enrollment. There is complete separation of funds and budget from OSU main campus. The largest expense to extend the two MAT areas of concentration will center on hiring faculty with science and math education experience.

The library will need to acquire some materials specific to math and science education. There is an annual library budget in place for TCE that will go towards supporting these purchases. See library needs assessment section.

Marketing of the science/math areas of concentration, business cards, and office set up for the new faculty hire will be minimal and therefore will impact the OSU-Cascades’ budget only slightly. (See the attached budget pages.) OSU-Cascades markets the graduate programs (MAT in Language Arts Education and Counseling) together through printed materials, media and information sessions. A budget already exists for this effort. The majority of applicants use the OSU-Cascades’ website and this will be updated to reflect the extension of the MAT in Advanced Mathematics Education and the MAT in Integrated Science Education once they are approved. OSU-Cascades will announce the availability of the new programs (once approved) to our school districts through a monthly meeting of Superintendents which Becky Johnson, Vice President for OSU-Cascades, attends.
Please see Budget Attachments for specific anticipated costs for the extension of the MAT to science and mathematics.

b. If the program will be financed from existing resources:

1. Describe what the budgetary unit will be doing that is not currently done in terms of additional activities.

See 5.a. above plus appendices.

2. State what these new activities will cost and whether financed or staffed by shifting of assignments within the budgetary unit or reallocation of resources within the institution. State which resources will be moved and how this will affect those programs losing resources.

See 5.a. above plus appendices.

6. Draft of the MOU—the following template is required.

a. The program title and limitations (if any):

M.A.T. in Integrated Science Education and M.A.T. in Advanced Mathematics Education

b. What are the responsibilities of the OSU-Cascades campus administration, faculty and staff in order for the program to be delivered at OSU-Cascades?

Marla Hacker, Dean of Academic Programs and Dennis Lynn, Director of Graduate Programs, will oversee the administration, faculty and staff involved in this extension. Enrollment Management and Student Affairs already serve OSU-Cascades students. Carolyn Platt, as program lead for the MAT, will provide the program supervision and administration.

c. What are the responsibilities of the OSU-Main campus administration, faculty and staff in order for the program to be delivered at OSU-Cascades?

The College of Education will continue to be the academic home for the Teacher and Counselor Education program at OSU-Cascades. The MAT is tightly connected with the governance structure of OSU’s College of Education and is represented on the Dean’s Council. Programmatic decisions, curriculum, and faculty hiring are coordinated and approved in consultation with the Dean of the College of Education or his designee, along with the Vice President and Academic Dean on the OSU-Cascades campus and the Graduate School on the main campus.

d. Provide documentation of discussion of the proposal for the new program with the faculty of the sponsoring department on the Corvallis campus.

The extension of the MAT to include Integrated Science Education and Advanced Mathematics Education at OSU-Cascades has the full support of the OSU College of Education faculty and
administrators. See attached emails between OSU-Cascades and Corvallis departments and faculty, as well support letters from the Bend LaPine School District, OSU-Cascades largest school district partner.
## Prepared by:

Institution: OSU-Cascades  
Program: Science and Math Education  
Academic Year: 2012-2013

### Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

### Budget Outline Form

**Estimated Costs and Sources of Funds for Proposed Program**

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### Personnel

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### Other Resources

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<th>Column C</th>
<th>Column D</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Library/Printed</td>
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<td>500</td>
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<td></td>
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<tr>
<td>Supplies and Services</td>
<td></td>
<td>9,000</td>
<td></td>
<td></td>
<td></td>
<td>9,000</td>
</tr>
<tr>
<td>Equipment</td>
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<tr>
<td>Other Expenses (Software)</td>
<td></td>
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</tr>
<tr>
<td><strong>Other Resources Subtotal</strong></td>
<td><strong>9,500</strong></td>
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### Physical Facilities

<table>
<thead>
<tr>
<th>Description</th>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
<th>Column D</th>
<th>Column E</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
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<td></td>
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<tr>
<td>Major Renovation</td>
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<tr>
<td><strong>Physical Facilities Subtotal</strong></td>
<td><strong>193,746</strong></td>
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<td><strong>193,746</strong></td>
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</tbody>
</table>

**Grand Total** 193,746

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**Indicate the year:** X First  
Second  
Third  
Fourth

**Prepare one page each of the first four years**
## Budget Outline Form
### Estimated Costs and Sources of Funds for Proposed Program

**Institution:** OSU-Cascades  
**Program:** Science and Math Education  
**Academic Year:** 2013-2014

Prepare one page each of the first four years

<table>
<thead>
<tr>
<th>Column A</th>
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<th>Column D</th>
<th>Column E</th>
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</tr>
</thead>
<tbody>
<tr>
<td>From Current Budgetary Unit</td>
<td>Institutional Reallocations from Other Budgetary Unit</td>
<td>From Special State Appropriation Request</td>
<td>From Federal Funds and Other Grants</td>
<td>From Fees, Sales and Other Income</td>
<td>LINE ITEM TOTAL</td>
</tr>
</tbody>
</table>

### Personnel
- Faculty (Include FTE)(3.5) 107,778 107,778
- Graduate Assistants (Include FTE)
- Support Staff -share existing (.75) 22,370 22,370
- Fellowships/Scholarships
- OPE 58,137 58,137
- Non-recurring: Start-up 0
- **Personnel Subtotal** 188,285 188,285

### Other Resources
- Library/Printed 500 500
- Library/Electronic (Use existing) 0
- Supplies and Services 10,200 10,200
- Equipment 0
- Other Expenses (Software)
- **Other Resources Subtotal** 10,700 10,700

### Physical Facilities
- Construction
- Major Renovation
- Other Expenses
- **Physical Facilities Subtotal**

### Grand Total 198,985 198,985

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.
## Budget Outline Form

**Estimated Costs and Sources of Funds for Proposed Program**

Institution: OSU-Cascades  
Program: Science and Math Education  
Academic Year: 2014-2015

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
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</thead>
<tbody>
<tr>
<td>From Current Budgetary Unit</td>
<td>Institutional Reallocation from Ojher Budgetary Unit</td>
<td>From Special State Appropriation Request</td>
<td>From Federal Funds and Other Grants</td>
<td>From Fees, Sales and Other Income</td>
<td>LINE ITEM TOTAL</td>
</tr>
<tr>
<td><strong>Personnel</strong></td>
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<td>OPE</td>
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<td>Non-recurring: start-up</td>
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<td><strong>Other Resources</strong></td>
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<tr>
<td>Library/Printed</td>
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<tr>
<td>Library/Electronic (use existing)</td>
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<tr>
<td>Supplies and Services</td>
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<tr>
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<td>Other Expenses (Software)</td>
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<tr>
<td><strong>Other Resources Subtotal</strong></td>
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<td><strong>Physical Facilities</strong></td>
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<tr>
<td>Construction</td>
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<tr>
<td>Major Renovation</td>
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<td>Other Expenses</td>
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<td><strong>Physical Facilities Subtotal</strong></td>
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<tr>
<td><strong>Grand Total</strong></td>
<td>210,549</td>
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</tbody>
</table>

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.

*Indicate the year: ________ First  ________ Second  
X Third  ________ Fourth*
## Budget Outline Form

**Estimated Costs and Sources of Funds for Proposed Program**

**Institution:** OSU-Cascades  
**Program:** Science and Math Education  
**Academic Year:** 2015-2016  
**Indicate the year:**  
- First  
- Second  
- Third  
- Fourth

**Prepare one page each of the first four years**

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
<th>Column D</th>
<th>Column E</th>
<th>Column F</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Current Budgetary Unit</td>
<td>Institutional Reallocation from Other Budgetary Unit</td>
<td>From Special State Appropriation Request</td>
<td>From Federal Funds and Other Grants</td>
<td>From Fees, Sales and Other Income</td>
<td>LINE ITEM TOTAL</td>
</tr>
</tbody>
</table>

### Personnel
- Faculty (Include FTE) (3.5)  
  - From Current Budgetary Unit: 110,652  
  - Total: 110,652
- Graduate Assistants (Include FTE)  
  - From Current Budgetary Unit: 32,262  
  - Total: 32,262
- Support Staff: share existing (1.0)  
  - From Current Budgetary Unit: 63,963  
  - Total: 63,963
- Fellowships/Scholarships  
  - From Current Budgetary Unit: 0  
  - Total: 0
- OPE  
  - From Current Budgetary Unit: 0  
  - Total: 0

**Personnel Subtotal:** 206,877

### Other Resources
- Library/Printed  
  - From Current Budgetary Unit: 0  
  - Total: 0
- Library/Electronic (use existing)  
  - From Current Budgetary Unit: 0  
  - Total: 0
- Supplies and Services  
  - From Current Budgetary Unit: 10,600  
  - Total: 10,600
- Equipment  
  - From Current Budgetary Unit: 0  
  - Total: 0
- Other Expenses (Software)  
  - From Current Budgetary Unit: 0  
  - Total: 0

**Other Resources Subtotal:** 10,600

### Physical Facilities
- Construction  
  - From Current Budgetary Unit: 0  
  - Total: 0
- Major Renovation  
  - From Current Budgetary Unit: 0  
  - Total: 0
- Other Expenses  
  - From Current Budgetary Unit: 0  
  - Total: 0

**Physical Facilities Subtotal:** 0

**Grand Total:** 217,477

Total new resources required to handle the increased workload, if any. If no new resources are required, the budgetary impact should be reported as zero.
Budget Outline Form
Estimated Costs and Sources of Funds for Proposed Program

Notes

1.0 Assist Prof - 12 mo + 6 part-time @ 3,500 ea + 2 field supervisors @3900

Increase to .75

For employees listed above

Recruitment and Moving Exp

Supplies, Professional Dev, Travel, including Field Supervisors/Placement Coordinator
TT + 4% + 6 PT + 4 FS
N/A

For employees listed above

Supplies, Professional Dev, Travel, including Field Supervisors/Placement Coordinator+2% inflation
TT +4%, 6PT + 4FS

For employees listed above

Supplies, Professional Dev, Travel, including Field Supervisors/Placement Coordinator+2% inflation
Budget Outline Form
Estimated Costs and Sources of Funds for Proposed Program

TT +4%, 6PT + 4FS

For employees listed above

Supplies, Professional Dev, Travel, including Field Supervisors/Placement Coordinator +2% inflation
Executive Summary for the MOU Proposal to extend from OSU-main campus to OSU-Cascades campus:

MAT in Integrated Science Education (CIP: 131316)
MAT in Advanced Mathematics Education (CIP: 131311)

This MOU seeks to extend the Master of Arts in Teaching (MAT) in Integrated Science Education and Master of Arts in Teaching (MAT) in Advanced Mathematics Education, housed at OSU-main campus, to the OSU-Cascades campus for students who wish to teach middle and high school mathematics or science. Oregon State University extended the MAT in Language Arts Education to OSU-Cascades three years ago. This move will build upon the MAT areas of concentration to be offered at OSU-Cascades.
MOU Proposal Transmittal Sheet
Submit proposals to: Office of Academic Planning and Assessment
110 Kerr Admin – Oregon State University

For instructions, see http://oregonstate.edu/ap/curriculum/catl.html. Please attach Proposal, Library Evaluation (performed by the library), Liaison Correspondence, Faculty Curriculum Vitae, and Budget Sheets, as appropriate.

Check one: MOU to extend program from OSU to OSU-CASCADES

Full Proposal
☑ New degree program
☑ New certificate program or administrative unit
☑ Major change in existing program
☑ Establishment of a new College or Department

Abbreviated Proposal
☑ Rename of an academic program or unit
☑ Reorganization – moving responsibility for an academic program from one unit to another
☑ Merging or splitting an academic unit
☑ Termination of an academic program or unit
☑ Suspension or reactivation an academic program or unit

For proposals to establish a new center or institute, contact the Research Office (737-3437).

For requests to offer existing certificate and degree programs at new locations, use the New Location Request Form available on the Web: http://www.ous.edu/aca/aca-forms.html

Title of Proposal:
MAT in Integrated Science Education
MAT in Advanced Mathematics Education

Effective Date: 2012

Department/Program:
Teacher and Counselor Education

College:
College of Education

I certify that the above proposal has been reviewed and approved by the appropriate Department and College committees:

Sign (Dept Chair/Head; Director)  12/9/11
Sign (Dean of College)  12/12/11

Rebecca Johnson  Print (Department Chair/Head; Director)
Mali S. Shih  Print (Dean of College)
The BFP group approved proposal 83047 today. It notes a minor error in the budget. The faculty salaries for years 2 and 3 are 107778 and 107796, which does not reflect an appropriate inflation factor.

W. Loveland
Dear Carolyn:

Just wanted to let you know that the Grad Council has voted to approve your MOU, contingent upon your requiring 9 content credits. Congratulations!

Carolyn Aldwin, Chair
Graduate Council

President, APA Division 20
Editor, Research in Human Development
Director, Gerontology Program
Professor, Human Development & Family Sciences
School of Social & Behavioral Health Sciences
424 Waldo
Oregon State University
Corvallis, OR 97331
541 737-2024; 737-1076 (fax)
Aging is Everybody's Business!

Carolyn, an issue has come up concerning the number of math or science graduate content credits. Your proposal states that the number of credits will range between 6 and 8 (page 5). However, the graduate catalog states that the number of content credits must be at least 9. This matches language in the original Category I proposal that states "The MAT will include a requirement that students in secondary education program areas earn at least nine hours of graduate credit in an academic area outside the field of education that relates directly to their teaching certification area." For the language in the catalog, please see http://catalog.oregonstate.edu/ChapterDetail.aspx?key=39#Section2273.

If the Graduate Council decides that this requirement for 9 credits must be incorporated into your proposal, would you agree to this change or do you have other comments about this issue?
I am copying members of the Graduate Council who will be leading discussion on this topic. I am also including Gary Beach who will be providing liaison to the Curriculum Council. I recommend that you “reply to all” so that they will all know your stance on that issue.

R. Bruce Rettig  
Associate Dean, Graduate School  
300 Kerr Administration Building  
Oregon State University  
(541) 737-1478
1. Program Description
   a. Program title, level:
      • This proposal seeks to extend the Master of Arts in Teaching (MAT) in Integrated Science Education and the MAT in Advanced Mathematics Education from OSU-Main to the OSU-Cascades branch campus. OSU-Cascades has previously been granted approval to offer the MAT in Language Arts Education (that includes the MAT in Social Science Education) for those students seeking licensure to teach at the middle and high school grade levels.
      • CIP #s: 131311 – Teaching: Advanced Mathematics Education
         131316 – Teaching: Integrated Science Education

Table 1: Classification of Instructional Programs (CIP) Numbers:

<table>
<thead>
<tr>
<th>CIP #: 131311</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong> Mathematics Teacher Education.</td>
</tr>
<tr>
<td><strong>Definition:</strong> A program that prepares individuals to teach mathematics programs at various educational levels.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CIP #: 131316</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Title:</strong> Science Teacher Education/General Science Teacher Education.</td>
</tr>
<tr>
<td><strong>Definition:</strong> A program that prepares individuals to teach general science programs, or a combination of the biological and physical science subject matter areas, at various educational levels.</td>
</tr>
</tbody>
</table>

(Source: US Department of Education, National Center for Educational Statistics, CIP 2010 ed.)

b. OSU Main campus department and school/college under which the program is offered:
   • Department of Teacher and Counselor Education, College of Education

c. Who will be the administrators of the OSU-Cascades program?
d. Briefly describe the academic program, and provide a program degree audit sheet that lists all courses (including number of credits) and indicate how each course will be offered at OSU-Cascades [resident course (COCC, OSU) distance education, web, etc.].

Table 2: Proposal Summary: MAT in Integrated Science Education and MAT in Advanced Mathematics Education

<table>
<thead>
<tr>
<th>NEW</th>
</tr>
</thead>
</table>
| • **Degrees:** MAT in Integrated Science Education (CIP #: 131316)  
MAT in Advanced Mathematics Education (CIP #: 131311) |
| • **Academic Units:** Department of Teacher and Counselor Education, College of Education and OSU-Cascades |
| • **Course Designators:** TCE and SED (existing) |
| • **Proposed Effective Term:** Summer Term 2012 (Banner: 201300) |

The academic program is the OSU Master of Arts in Teaching offered through the College of Education’s Professional Teacher Education Program. Currently OSU-Cascades, by MOU approval, offers the MAT in Language Arts Education for pre-service teachers who wish to teach at the secondary level (5th-12th grades). This program (which includes course work, clinical experience and national exams) complies with the licensure standards and requirements of the Oregon Teacher Standards and Practices Commission (TSPC) to teach language arts or social studies upon successful completion of the degree program. Students receive an Oregon Initial 1 teaching license in addition to the Masters’ degree.

The intent of this proposal is to extend the current MAT degree in Integrated Science Education and MAT in Advanced Mathematics Education, housed at OSU-main campus, to the OSU-Cascades campus for students who wish to teach middle and high school math or science. The degree name would be Master of Arts in Teaching in either Integrated Science Education or Advanced Mathematics Education, depending on the concentration of courses, the student teaching experience, and the national exams the student completes.

The original OUS approval for OSU to offer an MAT included the science and math tracks. The MAT degree has since extended to the Cascades campus in the form of an
MAT in Language Arts Education and Corvallis now offers a Masters in Science Education (MS) and a Masters in Mathematics Education (MS). Faculty in Corvallis’ Science and Math Education department (SMED) and the College of Education reviewed this MAT MOU in relation to the MS degree awarded on main campus and offered the following recommendations:

1) *That the MAT program runs as one program with areas of concentration (endorsements -- language arts, social studies, science and math)*;

2) *That all students take several of the current MAT educational theory and pedagogical courses together*; and

3) *That each area of concentration (endorsement for licensure) be differentiated in the following ways: (1) taking subject specific pedagogy courses (language arts, math or science education) and (2) graduate level content courses (English, math, science) in support of the specific MAT degree program.*

The faculty goes on to state, “These suggestions are based on two main considerations: (a) differentiations between MAT and MS; and (b) resources on the OSU-Cascades campus. We believe that the differentiation between the MAT and MS [degrees] would also help NCATE [our national program accreditation body] and TSPC.” (Dr. Namhwa Kang, email correspondence to Dean Flick, June 7, 2011)

The MAT degree is generally considered to be a pre-service degree that requires education classes in order to meet state licensure requirements, and emphasizes advanced course work in a specific academic discipline to enhance one’s knowledge in that subject area. Furthermore, it focuses on educating the candidate in practical teaching skills for use as a teacher, as opposed to focusing on performing research in the educational field, which is traditionally the MS degree. The MAT degree is often advantageous to middle school and secondary school teachers because it allows them to focus on subject area knowledge in their undergraduate program and then acquire pedagogical skills in their graduate studies.

The original MAT approved for OSU in 1991 consisted of a minimum of 48 graduate credits distributed as follows:

- Six hours of graduate professional core courses in Education Foundations,
- Eighteen to twenty one hours of graduate professional course work in the teaching specialty,
- Fifteen to eighteen hours of graduate professional internship, and
- Nine hours of graduate electives in subject matter specialization.

This proposal calls for a minimum of 68 graduate credit hours, which brings the MAT in Integrated Science Education and the MAT in Advanced Mathematics Education in line with the current MAT in Language Arts Education.

The MOU for the MAT to be offered at the OSU-Cascades campus (approved in 2009) changed the required number of graduate elective credits in subject matter specialization from nine to “between 6 and 8 hours”, and the current MAT with the Language Arts area of concentration follows that requirement.
The MAT for the preparation of secondary teachers is designed “considering empirical research on teaching. Students completing the program will have expert knowledge both in their academic fields and in pedagogical knowledge. Acquisition of the pedagogical content knowledge, gained by teaching experience, requires not only the depth and breadth in each of the knowledge bases, but also in a heavily field-based program stressing reflection upon subject matter, instructional decision and their consequences in the classroom.” (Proposal for the Initiation of a Master of Arts in Teaching, Oregon State University College of Education Extended OSSHE Format for Category 1 Proposals, 1990).

In addition to the course requirements for MAT degree completion, students must submit a Professional Portfolio and sit for an oral examination in the final term of enrollment. These requirements are coordinated through TCE 524, the capstone course entitled “Teacher as a Reflective Practitioner”. Graduate School approved faculty from TCE sit on the orals and score the portfolios, and the addition of mathematics and science education student orals will not require any further staffing for the oral exams.

The target date for beginning enrollment for this academic program is June 25, 2012. The MAT program at OSU-Cascades is based on a cohort model in which all members begin the program coursework in the summer term together. Approval for the extension of this MAT will need to occur by the end of February 2012 in order to accept applications for admission and obtain student teaching placements, which begin in the late summer.

The existing MAT in Language Arts Education degree at OSU-Cascades operates in full cooperation with the Corvallis faculty and extending the graduate education degree to an MAT in Integrated Science Education and an MAT in Advanced Mathematics Education builds upon an existing focus on Science, Technology, Engineering and Mathematics (STEM) education at OSU. OSU-Cascades has a strong core MAT in place, one that is recognized by school districts throughout Oregon and, increasingly, the nation, as well as by the Teacher Standards and Practices Commission (TSPC)-- the state educators’ licensing board. The Central Oregon school districts have asked us to move forward with the extension of the MAT to science and mathematics as quickly as possible, as they are currently employing temporary teachers with emergency licenses who have no pedagogical training in the teaching of these subjects.

Audit sheets for the MAT in Integrated Science Education and the MAT in Advanced Mathematics Education appear below. Each area of concentration would build upon the approved graduate professional core and professional internship offerings around which the OSU-Cascades MAT in Language Arts Education is centered. Students enrolled in the science or mathematics areas of concentration would add the appropriate math and science methods coursework as well as graduate level content work.

All courses would be offered at OSU-Cascades by Graduate School approved faculty. OSU-Cascades has faculty in place to teach the Professional Core classes, the internship course work, and staff the oral examinations. OSU-Cascades will hire a full-time, tenure track faculty member to teach six of the SED courses, plus adjuncts who are teachers of
science and math in the secondary schools for the additional six courses to be taught in SED. The graduate level subject specific course work in math or science will be taught by the math and science faculty already in place at OSU-Cascades.

**Graduate Professional Core Classes in Education Foundations**

TCE 512 (3): Psychology of Adolescents  
TCE 520 (3): Classroom Management and Discipline  
TCE 524 (2): Teacher as a Reflective Practitioner (Capstone)  
TCE 528 (3): Using Assessment to Improve Instruction  
TCE 545 (3): Planning Curriculum Aligned to Standards  
TCE 549 (3): Teaching in a Differentiated and Diverse Classroom  
TCE 599 (1): Professional Formation

**CREDITS: 18**

**Math or science endorsements subject specific pedagogy**

SED 511 (3): Analysis of Classrooms I  
SED 512 (3): Technology Foundations for Teaching Math and Science  
SED 513 or 514 (3): Inquiry in Science and Science Education OR Inquiry in Mathematics and Mathematics Education  
SED 515 (3): Analysis of Classrooms II  
SED 518 (3): Analysis of Classrooms III  
SED 552 or SED 553 (3): Mathematics Methods: Practicum I OR Science Methods: Practicum I  
SED 573 or 574 (4): Science Pedagogy and Technology 1 OR Mathematics Pedagogy and Technology I  
SED 576 or 577 (4): Science OR Mathematics Pedagogy II

**CREDITS: 26**

**Graduate Professional Internship**

TCE 509 (3): Practicum/First student teaching placement  
TCE 510 (13): Internship/Second student teaching placement  
**NOTE:** 509 and 510, spread over 3 terms, gives our students the authorization to teach in Middle and High School levels

**CREDITS: 16**

**Math or Science Graduate Content Coursework**

Graduate work at the 500 level will support the specific MAT area of concentration and will meet the approval from the corresponding Corvallis faculty.

**CREDITS: 9**

e. **Indicate in what ways the proposed program at OSU-Cascades will differ from the OSU main campus program:**

The proposed design of the MAT in Integrated Science Education and in Advanced Mathematics Education follows the approved MAT for OSU and OSU-Cascades. The specific program minimum
requirements listed in 1.d. for the degree audit closely parallel those of the original CAT 1. At the same
time, the intended specific course selections to fulfill the graduate professional course work in the
teaching specialty closely parallel the course work in the MS on the main campus. OSU main campus
has chosen to offer the MS degree in Science or Mathematics Education because of its organizational
association with the College of Science. OSU approved the MAT degree being offered at OSU-Cascades
seven years ago with the MAT in elementary education and three years ago with the MAT in Language
Arts Education (that includes social science) for the secondary level authorization in teaching. The MAT
at Cascades is “already crafted as a very high quality program in concert with the Corvallis MS [degree]”
(Dean Larry Flick, email correspondence, October 21, 2011 to Dr. Platt) and the addition of the science
and mathematics areas of concentration will assure that the nature of the master’s level Professional
Teacher Education Licensure and Masters Programs will extend the teaching practices, content and
research to OSU-Cascades’ campus.

f. List any special requirements or pre-requisites for admission to the program at OSU-Cascades:

Students must demonstrate the following criteria:

• Completed bachelor’s degree from an accredited higher education institution (prior to
  enrollment).
• Minimum GPA of 3.0 in the last 90 quarter hours of graded undergraduate work and all
  work completed thereafter.
• Competence in science or math demonstrated through the completion of appropriate
  course content work.
• 60 hours of volunteer and observation experience with middle and high school students,
  with at least 30 hours in the public school classroom.
• Effective oral and written communication.
• Completion of TCE 560 Research in Learning (or equivalent) and TCE 499 Civil Rights in
  Education.
• Satisfactory answers to “good conduct” questions as required by the Oregon Teacher
  Standards and Practices Commission (TSPC)
• Sincere and appropriate desire to become a public school teacher and an understanding
  of the demands placed on a teacher.
• Passing results on: (1) either the EAS, California Basic Education Skills Test (CBEST) or all
  three subtests of the PRAXIS PPST, (2) the ORELA multiple subjects’ exam, (3) the ORELA
  Civil Rights exam, and (4) the NES content exams required for licensure in the
  endorsement area (language arts, social studies, math or sciences).

g. Is there an accrediting agency or professional society that has established standards for this
program? If so, is the program currently accredited? If accredited, what steps would be needed to
ensure that accreditation is maintained vis-à-vis the OSU-Cascades offering? Does the accrediting
body require notification of the program offering at a new location?

The OSU-Cascades MAT programs are nationally accredited through the National Council for
Accreditation of Teacher Education (NCATE) as well as regionally accredited through the Northwest
Commission on Colleges and Universities (NWCCU). Additionally, OSU-Cascades is approved to offer
professional teacher licensure programs by the Oregon Teacher Standards and Practices Commission
(TSPC).
2. Demand
   a. List any similar programs offered at the proposed or nearby location.

   OSU-Cascades currently offers an MAT in Elementary Education as well as an MAT in Language Arts Education. Other universities such as George Fox University and Eastern Oregon University offer the MAT in a hybrid (distance and limited location) model. There is consistent and very strong support for OSU resident graduate programs in education for Central Oregon by regional superintendents, teachers, school boards and community patrons.

   b. Provide evidence of need for the program at the new locations.

   The extension of the MAT in Integrated Science Education and in Advanced Mathematics Education is central to President Ray’s vision for the OSU-Cascades’ campus and Central Oregon region as a strong presence in STEM (Science, Technology, Engineering, and Math) practice and research. The education of excellent math and science teachers in the middle and high school levels is a well-documented national need. The superintendents of our six Central Oregon school districts have asked OSU-Cascades to extend the MAT to science and math to fulfill the vacancies for teachers in these subject areas. Currently, local school districts have had to hire some math and science teachers without any pedagogical background via provisional/emergency licenses.

   c. Estimate enrollment and number of graduates over the next five years. Will any enrollment limitation be imposed? If so, how will prospective students to be enrolled be selected?

   OSU-Cascades plans to award between 10 and 20 MAT in Integrated Science Education and MAT Advanced Mathematics Education degrees per year over the next five years:
   - Year 2012: 10 degrees
   - Year 2013: 15 degrees
   - Year 2014: 15 degrees
   - Year 2015: 20 degrees
   - Year 2016: 20 degrees

   OSU-Cascades utilizes a Cohort model, with the students commencing their program in the summer term. Enrollment limitation would be subject to funding, staffing requirements prescribed by NCATE, and student teaching placement opportunities. Prospective students will be selected through the criteria outlined above with particular attention paid to academic ability, depth of knowledge in content area, experience with middle and high school students, and dispositional characteristics that indicate the likelihood of professional success in the classroom.

3. Personnel
   a. List the names and qualifications of faculty (regular and adjunct) who will be involved in delivering the program at OSU-Cascades, and their tentative teaching assignments. Will new faculty be needed?

   OSU-Cascades will hire one full-time, tenure track, faculty member with STEM Education background who will serve as course instructor, advisor, and act as liaison with STEM research on the main campus. This person will be expected to teach six courses. (This is the teaching load specified for tenure track, full time faculty at OSU-Cascades.) In addition, we will continue our instructor model that works closely with the Central Oregon school districts to identify talented practitioners to teach as adjuncts for the
remaining six methods courses. We will also nominate to the Graduate School current OSU-Cascades science and math faculty to teach the graduate level content courses once these people are determined.

Adjunct instructors at OSU-Cascades are paid per course they teach. In addition to the contracted amount for the course, OSU-Cascades pays into the PERS or other benefit program in which the instructor is invested (a percentage amount based on the number of courses being taught).

Current faculty who will continue to teach core professional courses in the MAT program include:

- Jay Casbon, Ed.D.: TCE 499 Civil Rights in Education
  TCE 560 Research in Learning

- Dennis Lynn, Ph.D.: TCE 512 Psychology of the Adolescent

- Phil Hoffman, Ph.D.: TCE 520 Classroom Management and Discipline

- Carolyn Platt, Ph.D.: TCE 524 Teacher as a Reflective Practitioner
  TCE 560 Research in Learning
  TCE 599 Professional Formation

- Cate Denson Hill, MAT: TCE 549 Teaching in a Differentiated and Diverse Classroom

- Laura Sugden, MAT: TCE 545 Planning Curriculum Aligned to Standards
  TCE 525 Curriculum Implementation & Instructional Strategies
  TCE 528 Using Assessment to Improve Instruction

- Ann Owings Allred, MAT: TCE 509 Practicum-First Authorization
  TCE 510 Internship-Second Authorization

New Hires: One new, full time, tenure track, SMED faculty member will be hired to teach six of the following courses, as well as adjuncts to teach the remaining six courses, to be approved by the Graduate School:

- SED 511 (3): Analysis of Classrooms I
- SED 512 (3): Technology Foundations for Teaching Mathematics and Science
- SED 513 or 514 (3): Inquiry in Science and Science Education OR Inquiry in Mathematics and Mathematics Education
- SED 515 (3): Analysis of Classrooms II
- SED 518 (3): Analysis of Classrooms III
- SED 552 or SED 553 (3): Mathematics Methods: Practicum 1 OR Science Methods: Practicum I
- SED 573 or 574 (4): Science Pedagogy and Technology 1 OR Mathematics Pedagogy and Technology I
- SED 576 or 577 (4): Mathematics Pedagogy and Technology II OR Science Pedagogy and Technology

b. Estimate the number and type of support staff needed to provide the program at the new location.

OSU-Cascades has in place the support staff needed for this program and they include:
Placement Coordinator: 1 (will move from .49 to .75 FTE) This person secures and coordinates the student teaching placements.

Licensure and Administrative Coordinator: 1 (already 1.0 FTE) This person coordinates all testing and licensing requirements, as well as annual state and national accreditation reports.

Educational Librarian: 1 (already at 1.0 FTE)

We will need to hire two Student Teacher Evaluators, one who is licensed to teach in Oregon and endorsed in mathematics, and one who is licensed to teach in Oregon and endorsed in science, who will work on a part-time basis, with the amount of appointment to be dependent upon the number of enrolled students in student teaching practicums and internships. These field evaluators are paid on a formula based on number of students they oversee, number of visits made to the site, and the distance to the site. There are fees attached to the student teaching internship courses (TCE 509 and 510) to cover these costs.

The new and expanded hires are reflected in the budget submitted with this proposal. Please see the budget notes as well for clarification.

4. Other Resources

a. Describe facilities necessary to offer the program at the new locations.

Classroom and support facilities are in place in the OSU-Cascades building (Cascades Hall) and will be available in the new building for OSU-Cascades into which the graduate programs will move in early June. Laboratory sections of the science courses will meet in middle school and high school labs in the Bend LaPine schools, as well as in the laboratory classroom in Cascades Hall. All classrooms are multi-media equipped. The educational library is incorporated into the Central Oregon Community College/OSU-Cascades Library.

b. Indicate how library needs will be met.

Library Support for the MAT in Advanced Mathematics and MAT in Integrated Science Education Areas of Concentration on OSU-Cascades Campus

OSU-Cascades’ library services offers the collections and services described below in support of the proposed MAT in Advanced Mathematics and MAT in Integrated Science Education Concentrations at the OSU-Cascades Campus. Portions of the curriculum for this program are identical to the existing MAT Secondary education programs and similar to existing programs in Corvallis so OSU Libraries already provides much of the support the program is expected to need.

Periodicals
OSU Libraries provides access to the article databases essential for education research including ERIC, Education Research Complete, and PsycINFO. In addition to the many titles available electronically through these subscriptions, the Libraries also subscribe to core journals publishing research in Education and related fields. Periodicals are purchased electronically whenever possible, providing equal access to students and faculty regardless of campus.

Currently the Valley Library recieves print subscriptions to the National Council of Teachers of Mathematics publications. Of particular interest to the secondary program will be The Mathematics Teacher and Mathematics Teaching in the Middle School. Articles from these print journals are available to Cascades students and faculty through the Scan and Deliver program which sends scanned copies of materials held by the Valley Library to requestors’ email, generally within 24 hours. If Cascades decides immediate access to these titles is crucial, the titles are available to institutions for $104 per year (each.) An additional NCTM publication, The Journal of Research in Mathematics Education is also available via Scan and Deliver or Cascades could add a print subscription for $161 annually.
The Libraries also subscribe to the National Science Teacher Association titles *Science Scope* and *The Science Teacher*. These are available electronically back to around 2005 and older volumes are held at the Valley Library and available to OSU-Cascades faculty and students through the Scan and Deliver service.

**Monographs and Media**
OSU-Cascades currently maintains a strong local collection of education materials purchased to complement the collection at Valley Library. We anticipate some additional need for materials that specifically cover mathematics and science education theory and pedagogy at the middle and high school level. An additional $500 per year for at least the first two years would allow the library to purchase, in consultation with the faculty, any needed core materials.

OSU Libraries also participate in Summit, a consortium of academic libraries in Oregon, Washington, and now Idaho. This participation gives OSU-Cascades faculty and students access to the collections (both books and videos) of more than 35 additional libraries, twenty of which also offer masters-level education programs.

c. **Indicate how students at the new location will receive student services (e.g. academic advising):**

OSU-Cascades has a complete student services and academic support system in place to serve its students, including academic advisors, counselors, career services and student activities. The in-program faculty in TCE does the bulk of advising for MAT students. The Licensure Coordinator assists in advising on licensure issues.

5. **Budgetary Impact**

a. **Indicate the estimated cost of the program for the first four years of its operation. Use the Budget Outline and Budget Outline instructions forms on the Forms and Guidelines website.**

OSU-Cascades funds its program costs, as well as all administrative costs, through the tuition revenue generated by FTE enrollment. There is complete separation of funds and budget from OSU main campus. The largest expense to extend the two MAT areas of concentration will center on hiring faculty with science and math education experience.

The library will need to acquire some materials specific to math and science education. There is an annual library budget in place for TCE that will go towards supporting these purchases. See library needs assessment section.

Marketing of the science/math areas of concentration, business cards, and office set up for the new faculty hire will be minimal and therefore will impact the OSU-Cascades’ budget only slightly. (See the attached budget pages.) OSU-Cascades markets the graduate programs (MAT in Language Arts Education and Counseling) together through printed materials, media and information sessions. A budget already exists for this effort. The majority of applicants use the OSU-Cascades’ website and this will be updated to reflect the extension of the MAT in Advanced Mathematics Education and the MAT in Integrated Science Education once they are approved. OSU-Cascades will announce the availability of the new programs (once approved) to our school districts through a monthly meeting of Superintendents which Becky Johnson, Vice President for OSU-Cascades, attends.
Please see Budget Attachments for specific anticipated costs for the extension of the MAT to science and mathematics.

b. If the program will be financed from existing resources:

1. Describe what the budgetary unit will be doing that is not currently done in terms of additional activities.

   See 5.a. above plus appendices.

2. State what these new activities will cost and whether financed or staffed by shifting of assignments within the budgetary unit or reallocation of resources within the institution. State which resources will be moved and how this will affect those programs losing resources.

   See 5.a. above plus appendices.

6. Draft of the MOU—the following template is required.

   a. The program title and limitations (if any):

      M.A.T. in Integrated Science Education and M.A.T. in Advanced Mathematics Education

   b. What are the responsibilities of the OSU-Cascades campus administration, faculty and staff in order for the program to be delivered at OSU-Cascades?

      Marla Hacker, Dean of Academic Programs and Dennis Lynn, Director of Graduate Programs, will oversee the administration, faculty and staff involved in this extension. Enrollment Management and Student Affairs already serve OSU-Cascades students. Carolyn Platt, as program lead for the MAT, will provide the program supervision and administration.

   c. What are the responsibilities of the OSU-Main campus administration, faculty and staff in order for the program to be delivered at OSU-Cascades?

      The College of Education will continue to be the academic home for the Teacher and Counselor Education program at OSU-Cascades. The MAT is tightly connected with the governance structure of OSU’s College of Education and is represented on the Dean’s Council. Programmatic decisions, curriculum, and faculty hiring are coordinated and approved in consultation with the Dean of the College of Education or his designee, along with the Vice President and Academic Dean on the OSU-Cascades campus and the Graduate School on the main campus.

   d. Provide documentation of discussion of the proposal for the new program with the faculty of the sponsoring department on the Corvallis campus.

      The extension of the MAT to include Integrated Science Education and Advanced Mathematics Education at OSU-Cascades has the full support of the OSU College of Education faculty and
administrators. See attached emails between OSU-Cascades and Corvallis departments and faculty, as well support letters from the Bend LaPine School District, OSU-Cascades largest school district partner.
I have worked closely with the Cascades faculty and administration in the preparation of this MOU. The SMED faculty have reviewed drafts and provided feedback. We are in complete agreement that establishing this MAT is a valuable tool for OSU (Cascades and Corvallis) to further the STEM mission of the College of Education. We are prepared to work with the Cascades faculty in offering the appropriate courses. We look forward to this new opportunity to expand the reach of STEM teacher education and to develop innovative approaches to delivery key graduate experiences in STEM teacher education.

Gary Beach (Curriculum Coordinator) February 28, 2012 2:41pm
This MOU proposal was approved by the Budgets and Fiscal Planning Committee on January 26, 2012 and was subsequently forward to the Graduate Council chair on January 27, 2012:

"Carolyn,

The MAT in Mathematics Education / MAT in Science Education MOU proposal to extend these two endorsements from OSU-Main to OSU-Cascades is now ready for the Graduate Council’s review. The proposal (CPS # 83047) has been approved by the Budgets and Fiscal Planning Committee—see the approval notification from Walt Loveland below."

--Gary

Sarah Williams (Curriculum Council Chair) March 16, 2012 10:09am
Returning to Originator for revision at the request of the Graduate Council. SW.

Sarah Williams March 16, 2012 3:17pm
OSU-Cascades has complied with the request from the Graduate Council.