The UNIVERSITY of VERMONT

FACULTY SENATE

Minutes
March 9, 2015

Senators in Attendance: 65

Absent: Adams (Surgery), Burns (RSCA), Hehir (Neuroscience), Naylor (Psychiatry), Rodgers (PSC), Schapiro (Anesthesiology), Wilcox (Pathology), Witkin (Social Work), Wu (Rehabilitation & Movement Science), Yang (Physics)

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1. **Approval of the Minutes.** The minutes of February 9, 2015 were approved.

2. **Senate President's Remarks.** President Roberts, decided to forgo remarks to allow more time for discussion due to the full agenda.

3. **Sustainability Curriculum Review Committee (*vote*).** Professors Hill and Wang presented on behalf of the Sustainability Curriculum Review Committee. Their presentation provided a brief overview of the history of the proposed Sustainability General Education Requirement. There was also emphasis on student support for the requirement. Three students reinforced this by addressing the Senate with their rationale on why the Sustainability General Education requirement would be beneficial to the student body both during their collegiate career, but also as they move into the workforce.

   The presentation also gave a thorough explanation and demonstration of the capacity available to make this requirement successful. Keith Williams presented data on the proposed courses that would meet this requirement (courses that intend on applying for this designation). The process of course identification and data analysis was done much like it was with the Diversity General Education Requirement. The worksheets presented at the meeting with all the up-to-date data can be found on the Faculty Senate Website on the March 9th meeting materials page (http://www.uvm.edu/~facsen/?Page=facsenmarch092015.html).

   There was a request to see the capacity broken down by College, which is represented in the data linked above. The capacity per college breaks down to 923 seats per College. This is a conservative calculation as was confirmed by a faculty member in the School of Business Administration who stated that BSAD had a number of courses that would meet the requirement but were not included in the course list used for the capacity calculations.

   Another question had to do with the data analysis, and whether or not it accounted for "double dipping", or students taking more than one course that would fulfill the requirement. This was not included in the capacity calculations because it is far too complex to do with the current degree audit system.

   It was also questioned what percentage of the course would have to be devoted to sustainability in order to be granted the designation to meet the Sustainability Requirement. Laura Hill, and Deane Wang

informed the Faculty Senators that the SCRC doesn't look for a certain percentage, rather that all four learning outcomes are introduced, and that three of the four are reinforced with either an assignment, video, project, or follow up lecture. The SCRC will continue to offer proposal writing workshops that help walk Faculty through what this will look like in detail.

When put to a vote, the Sustainability General Education Requirement was approved.

4. **Curricular Affairs.** Chair of the Curricular Affairs Committee, Cathy Paris, brought three items of business to the Faculty Senate for their consideration.

    a. **Animal Science Name Change.** The CAC approved a proposal to change the name of the Department of Animal Science to the Department of Animal and Veterinary Sciences. This proposal has good rationale for making the change as it is a more accurate representation of what the department does. The department does research on a variety of animals and works hard to prepare its students for application to veterinary school. The department will keep the ASCI prefix. There was a question asking if this could possibly be misleading for students applying to UVM and if they would be expecting a veterinary program. The proposing department was able to confirm that this would not be confusing and is actually common practice for other similar departments within our region. When put to a vote, the proposal was approved.

    b. **Undergraduate Certificate in Teaching English to Speakers of Other Languages.** This proposal is the first undergraduate certificate proposal since the new curricular entity was created. The target population is matriculated UVM students, and is a package of courses that also includes an experiential component. The experiential learning component for this certificate is unique in that it will provide monitored student teaching time for those enrolled in the certificate where students will design and implement lesson plans and exercises for the international student population on campus. It is important to note that this is not a licensure or endorsement program, and that this is strictly an academic certificate that would provide a specific set of skills and experiences for students to supplement their undergraduate studies. The majority of the courses are housed in Linguistics, and the certificate is compatible with any major/minor combination. The Faculty Senate unanimously approved the TESOL Undergraduate Certificate.

    c. **Art Minor.** This is a proposal from a group (formerly Studio Art) that had self-terminated years ago and has now had the time to regroup. The new minor is comprised of courses in art history (large lectures), and studio art (smaller seminars). The minor will be 6 credits of art history, 6 studio art courses, and 6 electives. The minor is not available to students majoring in art history or studio art due to the number of overlapping courses. There are no additional resources required to run this minor, and the plan is to only admit CAS students for the first year. Depending on capacity and demand, the minor may be opened up to the entire university in the future. The newly reconfigured minor has a new prerequisite checking system which will help the former capacity issue greatly. With the new prerequisite checking system, students will no longer be able to enroll in studio courses and then drop out of the minor. Instead, students participating in the Art Minor will be required to take an Art History course prior to enrolling in 100 level studio courses creating a level of student investment in the minor that wasn't previously reinforced. The Faculty Senate voted to approve the Art Minor proposal.

    d. **M.S. Complex Systems and Data Science.** This degree program would prepare individuals to handle large data sets in multiple disciplines through a 30 credit sequence of courses. This program is expected to appeal to a broad group of individuals because it can be applied to many

disciplines. Despite concerns that the faculty would not be able to handle a major influx of students, the faculty feel that neither the potential increase in class size nor the added advising responsibility would be a problem. Second year undergraduate students could be admitted to this program, take 6 credits of graduate level work, and then apply to for graduate admission. The proposal was approved by the Faculty Senate when put to a vote.

e. **Online Health Sciences Major.** This discussion comes as a continuation from the last meeting. Instead of spending time reviewing the proposal again, this time was spent reviewing the capacity of courses to complete the distribution requirements. Since the last meeting, the faculty proposing this major have done extensive research to prove the availability of courses to complete the degree requirements. Also, the proposing faculty reviewed the requirements and refined them so that qualified applicants will have already completed 30 credits, have at least one lab course in biology, and one lab course in chemistry completed, and must also have a GPA of 3.0 or higher. Also, because there isn't the availability of an online foreign language class, this requirement has been waived.

   There was a question regarding if general education requirements would be necessary for this degree and if it was possible to meet the requirements in an online format. It was answered that yes, it is possible under the current proposal to meet all general education requirements. It was also mentioned that UVM on-campus students would be able to enroll in the individual courses that make up this program, however, would not be able to double major due to current federal regulations. The Faculty Senate approved the new Online Health Sciences Major.

f. **Changes to the Existing Computer Sciences Certificate.** This item of business from the Curricular Affairs Committee took the form of a report out, as it doesn't require Faculty Senate approval. This is one of the longest running academic certificates at UVM having been approved in the mid to late 1990s. It is a popular program and the proposed changes will make it more streamlined. The proposal will take the 5 course sequence in Computer Science, and 3 tracks and give them more formalized names.

   Certificate in Computer Software: Web Development
   Certificate in Computer Software: Software Development
   Certificate in Computer Software: CS Master's Preparation

   Another change will allow students to take all three certificates, essentially stacking them into a complete package, and could lead to students matriculating and completing a Computer Science degree. The third proposed change would be to move the Web Development certificate to a completely online delivery mode as opposed to the hybrid model that is currently in operation (3 online, 2 on campus).

   There was concern expressed that there is too much overlap between the three certificates, and that the stacking of all three was not sufficient masters preparation because of the low number of credit hours. A representative from the Computer Science Department was able to speak to this issue and informed the Faculty Senate that the students enrolled in this program would already have a bachelors degree and this package of courses would only help to bolster their academic core to help increase their competitive edge as an applicant to a masters program.

5. **FY16 Budget Update.** Vice President of Finance and Enterprise Services, Richard Cate presented an update of the FY16 budget. The presentation may be found on the Provost's website here

(http://www.uvm.edu/provost/IBB/UVM%20Finance%20101.pdf). This presentation included a breakdown of the University's income and related expenses for FY15. These figures can inform how the budget could look in the following fiscal year. Highlights from the presentation include the following figures:

- FY15 Total Operating Budget - $625.4 Million
  - Restricted Funds: $161.2
  - General Fund: $ 309.3
  - Income / Expense $155.0

- FY15 General Fund Revenue by Major Category - $309.3 Million
  - Net Undergrad Tuition 56.2%
  - Net Grad & Other Tuition 3.7%
  - Medical Tuition 7.1%
  - Income Expense Return 5.8%
  - F&A/Indirect Recovery 8.1%

- FY15 General Fund by Major Expense Category - $309.3 M.
  - Colleges & Schools 45.5%
  - Extension & Ag 2.7%
  - Academic Support 11.6%
  - Student Services 7.6%
  - Institutional Support 17.6%
  - Operations & Maintenance 9.0%
  - Debt Service 6.0%

- FY15 General Fund Expenses by Primary Function- $309.3M
  - Wages & Salaries 49.0%
  - Benefits 19.3%
  - Facilities Related Operating & Debt Svc. 14.2%
  - Academic Operating 10.8%
  - Student Services Operating 1.3%
  - Foundation Support 2.7%
  - Institutional Operating 2.6%

- FY15 General Fund Personnel Cost Distribution - $211.2 M
  - Academic 62.6%
  - Academic Support 9.1%
  - Student Services 9.2%
  - Operations & Plant 3.8%
  - Executive Mgmt. 1.5%
  - Institutional Support 13.8%

- FY15 Debt Service Shares - $30.5 M
  - Academic 40.5%
  - Non-Academic GF 20.9%
  - Residential Life 28.8%
  - Athletics 0.5%
  - Davis Center 9.3%

- FY15 Utilities Costs - $15.5 M
  - Electricity 54.4%
  - Natural Gas 25.2%
  - No. 2 Fuel 1.1%
  - Propane 0.4%
  - Water & Sewer 11.3%
  - No. 6 Fuel 7.4%
  - BioDiesel Fuel 0.1%

Discussion covered how debt refinancing was handled, and the difference of restricted and unrestricted funding that comes from the Foundation. Other topics addressed include capital campaign and its focus on scholarship funds and faculty support, with the balance of the campaign funds being allocated to facilities management. President Tom Sullivan also clarified that the state appropriation is roughly 3% of the total budget, nearly half of which goes to student scholarships. The balance is broken down with 10 million designated to Extension, and the remaining 10 million designated to the medical school. Main cost drivers in the budget at UVM are largely salary and benefits, or a combination of the two. There is an important investment to be made in human capital which translates to a productive future. Financial Aid is the other major cost driver, with the three totaling to about 77% of the total budget.

6. **New Business.** There was no new business at this time.

The meeting was adjourned at 5:35 pm.

Report to the Faculty Senate

9 March 2015

Submitted by the Sustainability Curriculum Review Committee (SCRC)
A sub-committee of the Curricular Affairs Committee of the Faculty Senate

Co-chairs
Laura Hill, Deane Wang

Committee
Brian Lee (CEMS), Marilyn Lucas (BSAD), Eyal Amiel (CNHS), Lisa Watts Natkin (UVM Office of Sustainability and Committee staff), Deane Wang (RSENR, non-voting), Alan Tinkler (CESS), Beverly Wemple (CAS), Rory Waterman (CAS), Christine Vatovec (RSENR/COM), Laura Hill (CALS), Ann Hazelrigg (CAC, ex-officio), and Brian Reed (Associate Provost for Teaching and Learning, ex-officio non-voting)

Executive Summary
The report includes an implementation plan to adopt a university-wide General Education requirement in Sustainability for all UVM undergraduate students entering in Fall 2015. The Faculty Senate voted in favor of adopting the 4 sustainability learning outcomes and the formation of the Sustainability Curriculum Review Committee (SCRC) on 7 April 2014. This report supplements the information presented in the *Proposal for Sustainability Learning Outcomes for UVM With Recommendations for Implementation and On-going Review and Assessment* report submitted by the Ad-hoc Senate Committee for Sustainability Learning Outcomes on 7 April 2014, and includes important updates to the following: 1) the structure and function of the SCRC, 2) guidelines for university-wide implementation in Fall 2015, and 3) the process of assessment of General Education outcomes with the support of The Office of the Provost, the Faculty Senate, and the Office of Institutional Research.

I. Sustainability Curriculum Review Committee (SCRC) Structure and Function

The Sustainability Curriculum Review Committee (SCRC), has the role of maintaining and monitoring the portfolio of academic courses and experiences needed to achieve the Sustainability Learning Outcomes as approved by the UVM Faculty Senate (7 April 2014). Serving as a sub-committee of the Curricular Affairs Committee of the Faculty Senate, the committee has a representative of the Curricular Affairs Committee as an ex-officio member. For AY 2014-15, the Office of Sustainability is providing staff support to the committee.

1. Purpose

- Develop and oversee an implementation plan for the sustainability general education requirement.
- Propose changes to the sustainability requirement, as necessary, to the Faculty Senate.
- Solicit, review, and approve proposals for three pathways to fulfill the sustainability requirement:
    - Courses that qualify for designation as a "Sustainability Course."

    - Curricula* that qualify for designation as a "Sustainability Curriculum."
    - Co-curricular activities that qualify for designation as a "Sustainability Co-Curriculum."
- Develop and implement a policy for periodic review of approved sustainability courses, curricula, and co-curriculum stipulating revisions as necessary.
- Develop and implement a policy for review and approval of substitutions and alternatives for meeting the sustainability requirement on a case-by-case basis.

2. Membership

- The composition of the SCRC will consist of at least one faculty member from each of the seven undergraduate degree-granting schools and colleges (CALS, CAS, CESS, CEMS, CNHS, RSENR, BSAD), and the Associate Provost for Teaching and Learning (ex officio, voting).
- A representative of the CAC shall be a voting ex officio member.
- The Chairperson(s) of the SCRC shall be designated by the committee.
- Members of the first committee will serve staggered terms with a third serving two years, a third serving three years, and a third serving four years. Thereafter all members will serve three-year terms.
- Staff support for the SCRC will be provided by the Provost's Office.

3. Meetings

- There will be at least two meetings a semester to address the functions of the SCRC.
- The presence of a majority of the voting members at any meeting shall constitute a quorum.

II. Guidelines for university-wide implementation in Fall 2015

The University of Vermont has a foundation of sustainability offerings and has the capacity to implement and maintain the sustainability general education requirement in Fall 2015.

a) The SCRC has been reviewing curricular, course proposals, and developing a co-curricular framework since Fall 2014
b) the Sustainability Faculty Fellows program is targeting the sustainability learning outcomes for faculty participating in this Professional Development program
c) the Office of Sustainability is continuing to support administrative needs of the sustainability curriculum

Two strategies to increase existing capacity of sustainability offerings for Fall 2015:

1) SCRC review and approve majority of "intend to submit" courses and curricula that have been submitted to the Registrar for capacity analyses presented in February and March 2015
2) To augment a successful rollout in Fall 2015, the SCRC will grandfather in STARS sustainability-focused courses for a 1 year provisional period

Co-curricular and experiential learning series are being developed in collaboration with diversity to implement a common co-curricular designation framework. This initiative will proceed in a way that ensures academic rigor and quality and learning by students.

*Note: Curricula are defined as majors, minors, programs, themes, concentrations, foci, etc. Curricula would generally be a sequence (must be more than one course), structured through an academic unit, and the sustainability learning outcomes must be imbedded in required components of the curricula.

The Sustainability Faculty Fellows program is currently in its sixth year of providing faculty professional development in sustainability. The SFF Program has modified its programming to include working with curricular teams from departments across campus to integrate Sustainability Learning Outcomes into majors. Approximately 100 faculty members from each of the 7 undergraduate degree-granting schools and colleges plus the College of Medicine and Student Services have completed this professional development program. Therefore, sustainability course and curricula development is well-supported at UVM.

Proposal submission and review

Sustainability proposal-writing workshops sponsored by the Office of Sustainability, Center for Teaching and Learning, and SCRC have and will continue to be held for interested faculty. The first workshop offerings began in Fall 2014 and workshops will continue to be offered given needs of the University. These workshops guide faculty through the process of developing a sustainability proposal (i.e., identifying where in their courses, core curriculum, or co-curriculum sustainability learning outcomes will be addressed, developing a common rubric (or rubric elements) for assessing these outcomes, etc.) In addition, the SCRC will continue to collaborate with the Gen Ed Diversity Outcome Committee to determine the structure of co-curricular general education offerings and how assessment will proceed accordingly.

Sustainability requirement proposals (course, curriculum or co-curriculum) submitted by faculty, academic units, and other responsible leaders will introduce all 4 sustainability learning outcomes and reinforce 3 of the 4 outcomes. All proposals must include: 1) an overview statement, 2) a SLO matrix, 3) supporting documentation (i.e. syllabi), which together indicate and justify how the four learning outcomes are being met through varied mechanisms. Proposals need not meet the four SLOs equally, but all SLOs must be introduced and 3 of the 4 learning outcomes must be reinforced. Submission guidelines are posted on the Sustainability General Education website.

The SCRC will approve or reject all proposals in a timely manner, providing explanation for all rejections and guidance for proposal improvement. In addition, the SCRC provides example proposals on the above website and offers sustainability proposal workshops in collaboration with the Center for Teaching and Learning, and a list of all approved courses, curricula, and co-curriculum are made publicly available.

Periodic Review

Courses, curricula, and co-curriculum that have been approved must go through a 5-year review process. In addition to a complete updated proposal with current syllabi (when applicable), evidence of learning outcome assessment should also be included. A staggered process of review for the large pool of course proposals submitted in the first year (additional years only if needed) may need to be established through random assignment at the end of year one. If the staggered review process is needed, a third of the first-year proposals will be required to submit for re-review at two years, a third at three years, and a third at four years. Thereafter all course proposals will go up for re-review at the regular 5-year interval.

Specific Proposal Considerations

1) **Courses:**

- There should be the option for diversity courses to also be designated as sustainability courses (overlap of D1/D2 and SU courses).
- A Course Action Form is required for all course proposals in order for the registrar to administer a course change and provide a sustainability designation.
- Course designations are tied to the course and periodic review will maintain rigor through instructor changes.

2) **Curriculum:**
   - Each of the 4 learning outcomes may be met by one or more courses.
   - Syllabi for all courses in the proposal must be submitted.
3) **Co-Curriculum:**
   - Given the proposed adoption of structured experiential learning activities, these co-curricular activities will fall into the framework of courses that have identified learning objectives. Therefore, the unit's curriculum committee will ensure quality control of these experiential learning series.
   - The co-curriculum proposal will be reviewed by the SCRC to ensure that it meets the criteria for SU designation.
   - A description of assessment is required in the proposal.

Sustainability Requirement and Transfer Credit:

- A student requesting approval of a transferred course to satisfy the sustainability requirement must submit a petition to the Office of Transfer Affairs.
- If the petition is complete with sufficient justification the petition will be forwarded to the SCRC for review and determination.
- To be considered for sustainability credit, a transferred course must carry at least three credits (or the equivalent).
- A detailed syllabus of the transferred course, along with the statement and SLO matrix must be provided.

Policies for considering petitions for a non-course alternative experience will follow the existing policy established for accepting credit to meet the diversity requirement. An essay is part of this process and will serve as the assessment for this option.

III. Assessment Processes

A university-wide assessment protocol supported through various academic offices at the University of Vermont is needed to support General Education. The Office of the Provost (in collaboration with the Faculty Senate and the Office of Institutional Research) is currently developing a system to support the assessment of the General Education Learning Outcomes, including the Sustainability outcomes, in a manner that informs curricular revision. An Academic Planning Council has been working since November 2014 and will present a proposal for a system of assessment by the end of the academic year. That said, the overall sustainability assessment framework aligns with the proposal submission and review process. For example, the sustainability proposal matrix submitted includes descriptions of the assessment strategies for each sustainability learning outcome.

The Office of Sustainability staff support on the SCRC will administratively support a pilot research project. Data gathered will inform the development of the assessment framework, which will establish an ongoing assessment review process for designated courses, curriculum and co-curricular programs.

Whereas the University of Vermont has made numerous curricular and operational commitments to sustainability and the environment,

Whereas the Student Government Association (SGA) has an ongoing commitment to a sustainability general education requirement as signified by their 2010 and 2014 resolutions for "the creation of a university-wide sustainability curricular requirement,"

Whereas the Faculty Senate approved the recommended Sustainability Learning Outcomes (SLO) in April 2014,

Whereas the Faculty Senate approved the formation of the Sustainability Curriculum Review Committee (SCRC) in April 2014 to develop course capacity to meet the SLO,

Be it resolved, that beginning with entering fall 2015 undergraduates, the Sustainability Learning Outcomes be made a general education requirement.

Be it also resolved, that the following language be used in the course catalog:

"Sustainability Learning Outcome (SLO) Requirement: Beginning with the entering first-year class in fall 2015, all undergraduates must meet the Sustainability General Education Requirement for the University of Vermont. To meet this requirement, students must complete a course, curriculum, or co-curriculum prior to graduation that has been approved by the Faculty Senate's Sustainability Curriculum Review Committee.

*Footnote: "Approved courses are listed in the University of Vermont Catalogue with the letters SU in the title."

Curricular Affairs Committee of the Faculty Senate

Memo To: The Faculty Senate

From: The Curricular Affairs Committee of the Faculty Senate, Cathy Paris, Chair

Date: February 22, 2015

Subject: Approval of a proposal to change the name of the Department of Animal Science, College of Agriculture and Life Sciences, to the Department of Animal and Veterinary Sciences.

The Curricular Affairs Committee at its meeting of February 12, 2015 unanimously approved the action recommended in the following memo.

The faculty of the Department of Animal Science proposes to change its name to the Department of Animal and Veterinary Sciences. They believe that the department needs a name that better describes the scholarly activities of the faculty, and one that presents a more appealing image to prospective students.

Animal Science faculty members are highly productive, engaged in basic science research, from array microbiology of animal diseases to animal genomics. The old "Aggie" department focused on animal husbandry and meat production is a thing of the past. Further, the current UVM Animal Science Department has an active pre-veterinary program, including linkages with the Tufts University School of Veterinary Medicine, the Ontario Veterinary College at the University of Guelph, and the University of Edinburgh Royal Veterinary School. An impressive number of its graduate are accepted to veterinary school. Veterinary science is a part of the department's academic mission.

Not only does the proposed new name more accurately reflect scholarly activities of the unit, it would likely be more attractive to prospective students and new faculty members than the current name. The name Animal and Veterinary Sciences is used by comparable programs including those at the University of Massachusetts, the University of Maine, and Clemson University.

Curricular Affairs Committee of the Faculty Senate

Memo To: The Faculty Senate

From: The Curricular Affairs Committee of the Faculty Senate, Cathy Paris, Chair

Date: February 22, 2015

Subject: Approved changes to the academic certificate in Computer Science, CEMS and CDE

The Curricular Affairs Committee at its meeting of February 12, 2015 unanimously approved the action recommended in the following memo.

The Department of Computer Science, College of Engineering and Mathematical Sciences, in conjunction with Continuing and Distance Education, offers a long-standing five-course academic Certificate in Computer Software. The certificate, designed for those who are not matriculated students at the University of Vermont, does not appear on the student's transcript. The constituent courses are regular credit-bearing UVM courses, however. The Certificate in Computer Software requires completion of at least 15 credits (5 courses) in advisor-approved Computer Software courses, with a grade C (2.0) or better in each course. This Certificate is flexible, enabling students to select from one of the three pre-approved tracks described below or to put together another five-course sequence that meets their needs.

The Computer Science Department proposes three changes to the existing Computer Software Certificate. First, they would like to name the three existing tracks as separate individual certificates, as follows:

- Certificate in Computer Software: Web Development
- Certificate in Computer Software: Software Development
- Certificate in Computer Software: CS Master's Preparation

Second, they would like to make it possible for students to complete all three certificates if they so chose. The tracks overlap somewhat, so that after one certificate was completed, additional certificates could be earned with fewer than five additional CS courses. They argue that this is intentional and may lead to the student's matriculating into UVM as a degree-seeking student in Computer Science. This option may be especially attractive to returning veterans, college-educated adults who are considering a career switch into computer science, or high-school graduates who may lack the confidence or financial resources to matriculate directly into a degree program and wish to 'test the waters' in Computer Science.

And third, they want to market the Web Development Certificate as an online program. Three of the five courses required for the Web Development Certificate are already offered online. With the

addition of the remaining two in an online format, the Certificate could be completed entirely online..

Web Development Track

· CS 008 Introduction: WWW Design
· CS 021 Computer Programming I
· CS 110 Computer Programming II
· CS 142 Advanced Web Design
· CS 148 Database Design for the Web

Software Development Track

· Prereq: CS 064 Discrete Structures or MATH 52 Fundamentals of Mathematics
(Please note that MATH 52 has a co-requisite of MATH 021)
(Please note that CS 064 has a co-requisite of MATH 020 or MATH 022)
· CS 021 Computer Programming I
· CS 110 Computer Programming II
· CS 124 Data Structures
· CS 205 Software Engineering
· CS 275 Mobile Apps & Embedded Devices

CS Master's Preparation Track

· Prereq: CS 064 Discrete Structures or MATH 52 Fundamentals of Mathematics
(Please note that MATH 52 has a co-requisite of MATH 021)
(Please note that CS 064 has a co-requisite of MATH 020 or MATH 022)
· CS 021 Computer Programming I
· CS 110 Computer Programming II
· CS 121 Computer Organization
· CS 124 Data Structures
· CS 125 Computability and Complexity

Curricular Affairs Committee of the Faculty Senate

Memo To: The Faculty Senate

From: The Curricular Affairs Committee of the Faculty Senate, Cathy Paris, Chair

Date: February 22, 2015

Subject: Approval of a new undergraduate certificate in Teaching English to Speakers of Other Languages (TESOL)

The Curricular Affairs Committee at its meeting of February 12, 2015 unanimously approved the action recommended in the following memo.

In May of 2015, the Faculty Senate approved the creation of a new curricular entity for UVM, the undergraduate certificate. The undergraduate certificate, like a minor, comprises an integrated set of courses, however it differs from a minor in the requirement for an experiential learning component. The first such certificate to be proposed is presented here, a certificate in Teaching English to Speakers of Other Languages (TESOL).

Program Description: The TESOL Certificate will provide undergraduate students with a foundation in the approaches, methods, and techniques in teaching English to speakers of other languages, paired with a solid understanding of the theories of second language acquisition that underlie and motivate classroom practices. The program will prepare future ESL teachers and others working with second-language learners for classroom experiences with students in a variety of teaching contexts, with a specific focus on adult learners in the U.S. The specific focus on adult learners and ESL in higher education settings is a current curricular gap that this certificate will fill.

Rationale and Evidence of Demand: As the demands for English language teaching grow both in the U.S. and abroad, there is a concomitant increase in the need for trained teachers of English. The Certificate in TESOL provides students with theoretical background and practical training in this teaching field. The Certificate additionally helps make UVM alumni marketable and competitive as they search for jobs upon graduation. It also supports current UVM internationalization efforts. Students majoring and minoring in Linguistics and foreign languages in particular are seeking ways to apply their undergraduate education upon graduation; these students are currently populating courses now being offered that are included in the Certificate program. Additionally, students in the Colleges of Education and Social Services and in Nursing and Health Sciences have shown interest in curricular programming that enhances their knowledge in working with English language learners.

Co-Directors and Participating Faculty: Guillermo Rodríguez, Associate Professor, Romance Languages & Linguistics, and Maeve Eberhardt, Assistant Professor, Romance Languages & Linguistics, will serve as co-directors of the certificate program. Other participating faculty are Julie Roberts,

Professor, Linguistics (CAS), Cynthia Reyes, Associate Professor, Secondary Education (CESS); Barri Tinkler, Assistant Professor, Secondary Education (CESS), and Karen Vatz, Lecturer, Linguistics. (CAS).

Program of Study: The TESOL Certificate Program comprises the following five courses, the first four of which offer theoretical background in linguistics and second language acquisition, cross-cultural understanding, and approaches and methods in teaching English as a second language.

- LING 80 (Introduction to Linguistics)
- LING 177 (Second Language Acquisition)
- LING 195/196 (TESOL and Applied Linguistics)
- EDSC 055 (Citizenship and Education in the US)
- LING 270 (Techniques and Procedures for the ESL Classroom)

No more than 6 credits may overlap between the TESOL certificate and the ELL Endorsement (CESS).

The final course in the program allows Certificate students to be fully engaged in student teaching, as they are assigned to a class of English language learners for the semester. Throughout this semester, certificate students will be responsible for planning and implementing lessons and activities for the English language learners in their classes, applying the knowledge gained throughout the courses taken. They will be supervised by the professor of the course, and observed periodically during the term. Thus, the certificate program offers a substantial experiential component, providing students with intensive classroom experience in teaching English as a second language.

Schedule: The proposed starting date is Fall 2015.

Curricular Affairs Committee of the Faculty Senate

Memo To: The Faculty Senate

From: The Curricular Affairs Committee of the Faculty Senate, Cathy Paris, Chair

Date: February 22, 2015

Subject: Approval of a proposal for a new minor in Art, Department Art and Art History, College of Arts and Sciences

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The Curricular Affairs Committee at its meeting of February 12, 2015 unanimously approved the action recommended in the following memo.

The Department of Art and Art History, College of Arts and Sciences (CAS), has submitted a proposal for a new minor in Art.

Overview: Faculty in the Department of Art and Art History believe that a discussion concerning the creation and sharing of knowledge must acknowledge the significance throughout human history of visual means for communicating that knowledge. All students at UVM should have the opportunity to experience critical analysis of foundational masterpieces through art history as well as knowledgeable use of visual art forms through studio art. Likewise, any consideration of problem-solving and communication skills must include the importance of opportunities for meaningful use of materials and concepts to convey experience. This proposed minor in Art will include courses in both Art and Art History, giving students across the University a foundation in both subject areas.

Responsible Academic Unit: Department of Art and Art History, CAS.

Program Structure: The proposed new Art minor will require eighteen credits from the disciplines of studio art and art history, including:

- Three credits from the following studio art core courses:
  ARTS 001 *Drawing*
  ARTS 012 *Perspectives on Art Making*
- Three credits from the following art history core courses:
  ARTH 005 *Western Art: Ancient-Medieval*
  ARTH 006 *Western Art: Renaissance-Modern*
  ARTH 008 *D2: Asian Art*
- Of the twelve additional credits, at least nine credits must be at the 100-level or above.
- At least three credits in studio art and at least three credits in art history must be at the 100-level or above.
- A minimum of 6 credits in each discipline is required, with a resulting maximum of 12 credits in

either studio art or art history used to meet requirements for the minor.

Ineligible Majors: Studio Art and Art History majors are not eligible for the minor in Art.

Ineligible Minors: Art History minors are ineligible for the minor in Art.

Resource Requirements: There are no expected increases to the operating budget as a result of the Art minor. Students in studio art courses pay for supplies and materials through a course lab fee, therefore an increase in the number of students will not result in an increase in the departmental operating budget.

Additional Notes on the New Art Minor: About five or six years ago, the Faculty Senate voted, at the request of the CAS, to approve the elimination of the existing minor in Studio Art because the demand was too great. The configuration of the proposed new Art Minor will better balance the demand on the department's studio art courses. In the time since the Studio Art minor was terminated, a new pre-requisites, for a course in Art History, has been implemented. As prerequisites are now checked before students register for Art courses, the program can insure that only students with the necessary prerequisites can enroll. These changes are expected to take some of the pressure off of Studio Art courses.

In the first year that the new Art minor is offered, it will be open only to CAS students, in order to give the program a chance to assess demand. Once they are convinced that they can accommodate the demand, most likely in year two, they will open the minor to students in other units.

Another important change to note is that now, with prerequisite checking in place, enrollment in studio art courses will be open to all students with the appropriate perquisites, not just to students in CAS.

The changes outlined above will serve to make individual studio art courses accessible to appropriately prepared students across the University, and, in time, the new Art minor will also become widely available.

Program Assessment: The new minor in Art will be reviewed on the standard eight-year Academic Program Review cycle.

Curricular Affairs Committee of the Faculty Senate

Memo To: The Faculty Senate

From: The Curricular Affairs Committee of the Faculty Senate, Cathy Paris, Chair

Date: February 22, 2015

Subject: Approval of a new M.S. Degree Program in Complex Systems and Data Science

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The Curricular Affairs Committee at its meeting of February 12, 2015 unanimously approved the action recommended in the following memo.

Overview: The proposed MS in Complex Systems and Data Science (CSDS) will be a two-year, 30-credit degree program with optional disciplinary tracks, and will facilitate an Accelerated Master's Program of 144 credits. The MS in CSDS will be housed within the College of Engineering and Mathematical Sciences and will be overseen by a Curriculum Committee derived from the leadership team for the Vermont Complex Systems Center (VCSC) and the Complex Systems Curriculum Committee.

Rationale and motivation: The public need for the proposed MS is clear: 1) Data Science has exploded as an area of high demand; 2) NIH, NSF, and other sources of funding are increasingly being directed toward Big Data initiatives; and 3) Colleges and Universities are responding by building Masters around the US. UVM stands to profit from being relatively early in the development of its own program, capitalizing on its existing Complex Systems focus.

Mission Fit:

1. As part of the Complex Systems Transdisciplinary Research Initiative, the proposed MS in CSDS is a key development of the curriculum offered at UVM for training students to be able to enter and perform well in data-centric careers.
2. The Provost has directly encouraged opportunities for studies at the Master's level integrating Big Data and Energy Systems.
3. The proposed MS in CSDS follows naturally from UVM's Smart Grid IGERT, fulfilling part of the University's commitment to NSF to build a permanent program.

Building on a Foundation: The successful Graduate Certificate in Complex Systems already provides a strong base for training students in tackling data-rich problems. Combined with existing courses at UVM, we are ready to launch an effective MS in CSDS curriculum without the addition of any new courses.

Evidence Of Demand: There is clear evidence that there is a need for a workforce trained with information-centric skills. Undergraduate programs are not producing this type of individual. Government, finance, corporations, health care, and the military will require individuals with these skills. In the local area it is anticipated that Global Foundries, particularly the energy systems track, needs this skill set. Several local employers including Dealer.Com, and People's Bank have already reached out to display an interest and need. It is anticipated that this will be an attractive program to international applicants and the current success of the MS in Data Science at WPI is cited as evidence of the international appeal.

Objectives: The central goal of the MS in CSDS will be to help students become versatile data scientists with readily transferable skills, by training emerging data scientists and engineers from many fields in computational and theoretical techniques for 1) describing and understanding complex natural and socio-technical systems, enabling them to then, as possible, 2) predict, control, manage, and create such systems.

Education: Students will be trained in: 1) Industry-standard methods of data acquisition, storage, manipulation, and curation; 2) Visualization techniques, with a particular focus on building high quality web-based applications; 3) Finding complex patterns and correlations through, for example, machine learning and data mining; 4) Powerful ways of hypothesizing, searching for, and extracting explanatory, mechanistic stories underlying complex systems; 5) Combining the formulation of mechanistic models (e.g., toy physics models) with genetic programming.

Program Administration: Peter Dodds, in his role as Director of Complex Systems, Professor of Mathematics and Statistics, will be responsible for this proposed curriculum, advised by the Curriculum Committee for the MS in CSDS:

- Peter Dodds, Director of Complex Systems Center, Professor, Department of Mathematics and Statistics.
- Maggie Eppstein, Chair of Complex Systems Curriculum Committee, Chair and Professor of Department of Computer Science.
- Jeff Buzas, Chair and Professor, Department of Mathematics and Statistics.
- James Bagrow, Assistant Professor, Mathematics and Statistics.
- Josh Bongard, Associate Director of Complex Systems Center, Associate Professor, Department of Computer Science.
- Chris Danforth, Associate Director of Complex Systems Center. Associate Professor, Department of Mathematics and Statistics

Enrollment: Enrollment is expected to be 20 students per year (slightly fewer in the initial year; 2015–2016). Standard outlets for advertising will be employed when the program is launched. There will be an emphasis on the recruitment and retention of underrepresented groups. Eppstein's current NSF S-STEM serves as a mechanism for bringing in academically talented students with financial need. Paid advertising for the program will be handled through the Complex System Center budget.

Admission Requirements: Students must have a bachelor's degree in a relevant field and prior course work in computer programming, calculus, probability, and statistics. Linear algebra is highly

recommended. The Accelerated Master's Program (AMP) will accept exceptional students mid-way in their undergraduate program. A faculty committee will select students for admission to the program.

Resource Requirements: The proposal indicates that this is a resource-neutral proposal. Advising and mentoring will be done by current faculty within their workloads.

Assessment Plan: Oversight of the program and ongoing assessment will be the responsibility of the faculty. The program will undergo Academic Program Review on the standard eight-year cycle.

Evidence Of Support: The MS in CSDS proposal contains strong letters of support from the Chair of Computer Science, the Interim Director of the School of Engineering and the Dean of the College of Engineering and Mathematics, the Chair of the Department of Mathematics and Statistics, and the Dean of the Rubenstein School of Environment and Natural Resources. The Graduate Executive Committee has reviewed and approved the proposal.

Proposed starting date: Fall, 2015.

Health Sciences Degree Completion Program

Overview

The Health Sciences degree completion program is the first UVM undergraduate program to offer online delivery to students who have at least 30 credit hours of college work with a 3.0+ cumulative GPA. Students who complete the program will earn a Bachelor of Science degree. The program features 36 credit hours in the major following the attached curriculum. Two samples of courses of study are included. Following below is a listing of the number and types of courses currently available online at UVM (AY 2014-15) to meet the distribution requirements for the major and a choice of elective credits. We hope that the list of options will grow but we know how important it is to assure good design and rigor to engage and retain students studying off-site so development takes time. It should be noted that the College of Nursing and Health Sciences has been a leader in offering online and hybrid courses at UVM and has had an RN to BS degree completion program for many years, transforming it from ITV to web-based technology several years ago. We anticipate a robust interest in the Health Sciences program and that there will be regularly enrolled students who want to take some of the new courses offered as part of this major. This will constitute an opportunity for expansion of online, non-clinical courses related to health. We have made the following changes to the proposal based on discussion of the Faculty Senators February 9, 2015.

- Only students with 30 credit hours (1 year) of completed college work with a cumulative GPA of 3.0 will be eligible for admission to the Health Sciences major.
- The language requirement has been eliminated since it cannot be met at this time via UVM distance learning/online approaches and making it a prerequisite is a barrier to admission for many adult students.
- The requisite laboratory sciences are prerequisite to program admission.

Online Coursework

A review of all online courses offered during the AY 2014-15 and listed for summer 2015 yielded the following information:

Total *non-restricted** online courses offered at UVM:

Fall 2014	37
Spring 2015	48
Summer 2015	132
Total/AY	217

Courses restricted to specific majors, without reserved seating for CE students, are not included in the count, although a number of online courses do have pre-requisites. No graduate courses were included. Winter courses were counted in the spring totals. Where several sections of a course were shown, only online sections were counted. Hybrid courses and sections were not counted.

Sections by Distribution Category, AY 2014-15

Distribution Category	Program Requires	On Admit	Bal. CR (courses)	Fall 2014	Spring 2015	Summer 2015
English	6		≤6 (2)	0	6	20
Social Sciences	12		≤12(4)	1	10	40
Diversity: D1 and D2	6		≤6 (2)	3	8	18
Sciences (Natural & Applied)	18	8	≤10 (3-4)	15	12	10
Humanities	6		≤6(2)	0	1	43
Mathematics/Statistics	6	3	≤3 (1)	5	11	13
Other (pre-professional, general interest, non-classified)				5+	15+	13+
Total	54	≥ 11	≤43 (54-11)			

N. B. The chart above shows the minimum number of online courses currently available at UVM by academic category. Some D1 and D2 courses are also reflected in social science and humanities disciplines. *The language requirement has been eliminated from the program requirements.*

The table above demonstrates that there are sufficient numbers of distribution and elective courses for students to complete the curriculum online full time or part time. Basic sciences with laboratory work will be required prior to admission. Language study is not presently available at UVM online therefore the language requirement has been eliminated from program requirements since this is a barrier to completion for prospective students.

Curricular Samples

See the attached pages for examples of student backgrounds and planned curricular patterns.

Abstract

The College of Nursing and Health Sciences (CNHS), in collaboration with Continuing & Distance Education (CDE), proposes a new major in Health Sciences to be offered by distance learning methods to students who have previously earned at least one year of college credit but who did not complete a baccalaureate degree. University of Vermont undergraduates in residence may enroll in online classes as electives but may not participate in the major. Health Sciences will be the first undergraduate major to be offered solely through distance learning technologies for students wanting to complete degree requirements at the University of Vermont.

The Health Sciences major will provide a non-clinical choice for students who are broadly interested in health but who are undecided about or not interested in a direct patient care profession. The College of Nursing and Health Sciences does not currently have an option for students who want to study health from a broad perspective that includes human, environmental and animal health. The program is expected to help meet workforce needs in the State of Vermont and the New England region. A unique focus of this major is its emphasis on field experience through a mixture of formal internship, research, and service locally or globally.

The conceptual foundation for the major is the One Health Initiative, a movement to forge co-equal, all inclusive collaborations among health providers and scientists in human, animal and environmental health (See www.onehealthinitiative.com). Students graduating from the major will be qualified to fill any of a number of jobs requiring an understanding of health, the healthcare system, and the basis of disease. They will be grounded in both natural and social sciences with a focus on the interactions between the environment, social, and physiologic health. Students with this perspective on health may also be able to complete requirements for post-baccalaureate study in a clinical profession if so desired.

Many institutions of higher education have experienced growth in health sciences, yet most undergraduate programs are offered as traditional on-campus majors. The CNHS model represents a collaborative effort between the College and CDE, affording a creative approach to degree completion and professional development. Twenty-five (25) students with previous credits equal to one year or more of college will be admitted to the major each year, but selected courses may be offered to larger audiences for personal or professional development. Distance learning students will complete any needed distribution and major program requirements via distance technology but they must also participate in hands-on learning through experiential learning. The goal is to attract a steady stream of undergraduate degree-seeking students who master foundational content via distance learning technology and will complete field internships, service learning projects, and/or global health work as part of this UVM degree program. This approach is expected to recapture former UVM students who did not complete their bachelor's degrees, to provide an academically rigorous option for community college graduates, or to meet the needs of working adults for whom traditional campus programming is not an option. We believe that the flexibility of having courses offered online will also increase the revenue potential of the program.

Sample Curriculum: Regularly matriculated student leaves CNHS in 3rd year, returns 1 year later for HS major

Fall Term	CR	Spring Term	CR
CHEM 023	4	BIOL 004	3
NFS 163	3	CDAE 002	3
PEAC 005	1	CHEM 026	4
PSYC 001	3	Major course (blocked)	1
Major course (blocked)	3	NFS 043	3
NH 050	1	STAT 111	3
Fall Term		Spring Term	
ANPS 19	4	ANPS 20 (not completed)	0
ANTH 021	3	BIOL 006	3
Major course (blocked)	3	ENGS 001	3
Major course (blocked)	3	HLTH 003	2
SOC 19	3	NFS 053	3
		NFS 163	3
Fall Term		Spring Term	
Major course (blocked)	3	(withdrew from UVM)	
Major course (blocked)	3		
NFS 050	3	(9 added credits to be transferred)	
PEAC 005	1		
Major course (blocked)	3		
Fall Term/Semester 1		Summer / Term 3	
HSCI 101 Issues & Controversies in PH	3	HSCI 102 Epidemics in Hx & Imag	3
HLTH 105 Cultural Health Care	3	HSCI 120 Healthcare Ethics	3
HSCI 130 Health Promotion	3	HSCI 240 Project Planning & Eval.	3
HSCI 140 US Health Care Del & Fin	3		
Spring Term/Semester 2		Fall Term/Semester 4	
HSCI 103 Introduction to Global Health	3	HSCI 160 One Health	3
HSCI 230 Reading & Eval of Research	3	HSCI 291 Field Work- Interdisciplinary	6
Social Science (Distribution requrirement)	3		

Has 72 UVM credits and GPA of 3.0+Brings in from another college: Philosophy, Mathematics, Literature (all eligible for transfer credit). Total credits: 72+9+39=120

Sample Curriculum: Student with 30 credits of college coursework from accredited institution of higher education:

Fall Yr. 1	CR	Spring Yr. 1	CR
Written Expression (Writing/Eng)	3	Music (humanities)	3
College Algebra (math)	3	Geography (social science)	3
History (humanities)	3	Computer Science (other)	3
Art (elective)	3	Physical Education (other)	1
Chemistry with lab (science)	4	Biology with lab (science)	4
Gap in education, applies and is accepted into Health Sciences Program			
Fall Yr 2 (Admitted to HS Major)	CR	Spring Yr. 2	CR
HSCI 101 issues & Controversies in PH	3	HSCI 103 Intro. To Global Health	3
HLTH 105 Cultural Health Care D2 (Diversity)	3	CS 008 Intro to Website Development (Quant.)	3
STAT 111 (math dist. Requirement)	3	Econ 120 Money & Banking (soc science requirementi)	3
HSCI 140 US Healthcare Del & Fin	3	ENGL 096 (Humanities dist. requirement)	3
Summer Yr. 2			
HSCI 120 Healthcare Ethics	3	HSCI 102 Epidemics in Hx and Imagin.	3
Fall Yr. 3	CR	Spring Yr. 3	CR
HSCI 130 Health Promotion	3	NFS 043 Fundamentals of Nutrition (science)	3
HLTH 003 Medical Terminology	2	POLS 157 Int'l Politics Mid East (social science)	3
PSYC 001 (Soc Sci Dist. Requirement)	3	PHIL 096 Approaches to Death & Dying (humanities)	3
HLTH 155 Racism & Health Disparities D1	3	SOC 196 Topics in Deviance (elective)	3
CS 021 Computer Prog I	3	HLTH 100 Biology of Aging (science)	3
Summer Yr. 3			
ANTH 026 Biological Anthro. (D2)	3	HSCI 240 Prog. Dev. & Eval	3
PSCH 124 Organizational Psych	3		
Fall Yr. 4		Spring Yr.4	
HSCI 160 One Health	3	HSCI 250 Writing for HC Professionals	3
CDAE 124 Public Communication Media	3	HSCI 290 Fieldwork in PH	3
HLTH 105 Cultural Health Care (D2)	3	GRS 096 Haiti's Unnatural Disaster	2
Summer Year 4			
NFS 163 Sports Nutrition (science)	3	HSCI 290 Fieldwork in PH	3

Total credits: 121