Utah State University

Educational Policies Committee

2-27-2020

Educational Policies Committee Minutes, February 27, 2020

Utah State University

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EDUCATIONAL POLICIES COMMITTEE MINUTES

27 February 2020

A meeting of the Educational Policies Committee was held on 27 February 2020 at 3:00 pm in AGRS-412 (Luke Conference Room)

Present:      Paul Barr, Chair, Provost’s Office
Nicholas Morrison, Caine College of the Arts and Curriculum Subcommittee Chair
Timothy Taylor, College of Engineering
Cathy Bullock, College of Humanities and Social Sciences
Michele Hillard, Secretary
Chenese Boyle, Academic and Instructional Services
David Hole, College of Agriculture and Applied Sciences
Lee Rickords, General Education Subcommittee Chair
Robert Heaton, University Libraries
Robyn Peterson, Catalog Editor
Renee Galliher, Academic Standards Chair
Adam Gleed, Registrar’s Office
Richard Inouye, Graduate Council
Karen Mock, S.J. & Jessie E. Quinney College of Natural Resources
Dexton Lake, USUSA Executive Vice President
Sterling Bone, Jon M. Huntsman School of Business

Absent:      Jared Fry, Graduate Studies Senator
Christa Haring-Biel, Emma Eccles Jones College of Education and Human Services
Sami Ahmed, President USUSA
Dan Coster, College of Science
Michelle Fleck, USU Eastern
Fran Hopkin, Registrar’s Office
Shana Geffeney, Statewide Campuses

Guests:

I. Approval of 6 February 2020 Minutes
Motion to approve minutes made by Nick Morrison. Seconded by Lee Rickords. Minutes approved as distributed.

II. Subcommittee Reports
   a. Curriculum Subcommittee (Nicholas Morrison)
      Motion to approve the Curriculum Subcommittee meeting made by David Hole.
      Course Approvals - 268
      Program Proposals
      Request from the School of Teacher Education and Leadership in the Emma Eccles Jones College of Education and Human Services to add Science Education as a specialization to the existing Master of Education in Curriculum and Instruction.
Request from the School of Teacher Education and Leadership in the Emma Eccles Jones College of Education and Human Services to add Science Education as a specialization to the existing Master of Science in Curriculum and Instruction.

b. **Academic Standards Subcommittee** (Renee Galliher)
   Minutes – No meeting (no report)

c. **General Education Subcommittee** (Lee Rickords)
   Motion to approve the General Education Subcommittee made by Nick Morrison. Seconded by Karen Mock. Report approved.
   Minutes – 18 February 2020
   Accreditation process feedback was positive and USU is on track. David Brown brought forth a QI rubric for committee approval.

III. **Other Business**

USHE is holding a Majors degree meeting tomorrow. All USU majors has an individual attending and representing the institution. Have faculty across institutions come to a shared view on articulation.

Requesting Undergraduate Teaching Fellows (UTF) submissions and funding for next year.

Held on substantive vs. non-substantive expanded discussion. Taking time to vet and establish a criteria and definition. Language should come forth shortly. Will have things in place before next academic year. Looking at colleges/departments who are requesting new courses that takes a cohort of students and puts them in another college/department. This will be included in our substantive/non-substantive discussions.

Work on timelines/deadlines for curriculum changes and link in Curriculog.

Adjourn: 3:21 pm
EDUCATIONAL POLICIES COMMITTEE MINUTES

6 February 2020

A meeting of the Educational Policies Committee was held on 6 February 2020 at 3:00 pm in Old Main 136 (Champ Hall Conference Room)

Present:      Paul Barr, Chair, Provost’s Office
                Nicholas Morrison, Caine College of the Arts and Curriculum Subcommittee Chair
                Timothy Taylor, College of Engineering
                Cathy Bullock, College of Humanities and Social Sciences
                Dan Coster, College of Science
                Michelle Fleck, USU Eastern
                Michele Hillard, Secretary
                Chenese Boyle, Academic and Instructional Services
                David Hole, College of Agriculture and Applied Sciences
                Lee Rickords, General Education Subcommittee Chair
                Robert Heaton, University Libraries
                Robyn Peterson, Catalog Editor
                Renee Galliher, Academic Standards Chair
                Fran Hopkin, Registrar’s Office
                Adam Gleed, Registrar’s Office
                Richard Inouye, Graduate Council
                Karen Mock, S.J. & Jessie E. Quinney College of Natural Resources
                Kim Hales for Shana Geffeney, Statewide Campuses

Absent:      Jared Fry, Graduate Studies Senator
                Christa Haring-Biel, Emma Eccles Jones College of Education and Human Services
                Dexton Lake, USUSA Executive Vice President
                Sterling Bone, Jon M. Huntsman School of Business
                Sami Ahmed, President USUSA

Guests:      Grayson Layton, Jessica Hansen

I.  Approval of 9 January 2020 Minutes
Motion to approve the January 9, 2020 minutes made by Karen Mock.  Seconded by Dan Coster.  Minutes approved as distributed.

II.  Subcommittee Reports
   a.  Curriculum Subcommittee (Nicholas Morrison)
      Motion to approve the Curriculum Subcommittee report made by Renee Galliher.  Seconded by Timothy Taylor.  Report approved.

      Course Approvals - 63

Program Proposals
Request from the Department of Aviation, Career and Technical Education to create a Cybersecurity emphasis in the Technology Systems Bachelor of Science degree.
b. Academic Standards Subcommittee (Renee Galliher)
Minutes – No January meeting. Nothing to report.

c. General Education Subcommittee (Lee Rickords)
Motion to approve the General Education Subcommittee made by Nicholas Morrison. Seconded by Dan Coster. Report approved.
Minutes – January 21, 2020 (Electronic vote on designation no minutes)

III. Other Business
Course and Program Approval Timeline – Fran Hopkin
Confusion of deadlines has brought about this item for discussion. All deadlines have been looked at, not just certain requests. Align the input/deadlines for Banner and the catalog. Align the deadlines based on the different requirements from federal, state and university policies. See proposed approval timeline. Implement timeline for the 2020-2021 AY.

Changing Program Requirements, R401 Process and Accreditation – Michael Torrens
Michael Torrens discussed the issues with these types of changes. Certain colleges/departments are making changes to their graduation requirements. Students would be grandfathered in on the catalog/courses they began with. This should take affect now since it affects graduation and accreditation. Can we use the 2.1 Curriculog catalog change process instead of submitting new R401s? Individual program changes cannot just be made by the departments or colleges. When a student enrolls there is 100% transparency for him/her all the way up through graduation. This is a contract between the student and the university. If the contact needs to be changed, you cannot without letting the student grandfather in under the contract. These issues require oversight by the EPC committee. What role does the EPC committee have in this process and how do we bring these items forward? Source of accountability for changes that come forward. No definitions have been developed regarding changes and when do we do R401s vs. just catalog changes. One route is to bring them through the catalog change in Curriculog and then have the EPC Committee review as a governing body. Work on the language that would keep us in line with accreditation. Graduation requirements could be R401 and entrance requirement could be a 2.1 catalog change. Programs should examine their input and output. Continue discussions.

EPC/Curriculum Subcommittee meetings held during Spring break
Motion to move the March 5 EPC Committee meeting to February 27 made by David Hole. Seconded by Lee Rickords. Date of meeting changed.

Adjourn: 3:57 pm
Emma Eccles Jones College of Education and Human Services - School of Teacher Education and Leadership

4.1.a R401 Abbreviated Program Proposal

Proposal Information

Instructions for Completing R401:

Writing Guidelines/Suggestions

USHE R401 Policy

Contact Information

Edward Reeve: Interim Vice Provost (797-0718)

Step 1: Turn on "Help Tips" by clicking on the Show Help TextPrint icon (small blue circle with i inside) at the top right-hand side of your proposal.

Step 2: Select the College and Department Involved in the Process to Ensure the Correct Workflow and Approval.

   Select the College(s) this proposal involves.
   Select the Department(s) this proposal involves.

---

<table>
<thead>
<tr>
<th>COLLEGE (include all cross listed colleges)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emma Eccles Jones College of Education and Human Services</td>
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</table>

<table>
<thead>
<tr>
<th>DEPARTMENT (include all cross listed departments)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Teacher Education and Leadership</td>
</tr>
</tbody>
</table>

| Current Title (if applicable) |

| Proposed Title |

Step 3: Enter the Correct CIP Code Using the Following Website:

https://usu.curriculog.com/proposal:10191/print
## Classification Instructional Programs

<table>
<thead>
<tr>
<th>CIP Code (6-digits)</th>
<th>13.0301</th>
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<tbody>
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<td>36</td>
</tr>
<tr>
<td>Maximum Number of Credits (if applicable)</td>
<td>36</td>
</tr>
<tr>
<td>Type of Degree: (BA, BS, etc.)</td>
<td>MEd</td>
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## Request

**Step 4: Select** the Type of Change Being Requested.

<table>
<thead>
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<th>New Programs:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>☐ New Certificates of Proficiency (except Institutional Certificates of Proficiency)</td>
<td></td>
</tr>
<tr>
<td>☐ New Certificates of Completion</td>
<td></td>
</tr>
<tr>
<td>☐ New Post-Baccalaureate and Post-Masters Certificates</td>
<td></td>
</tr>
<tr>
<td>☐ New Minors</td>
<td></td>
</tr>
<tr>
<td>☐ New Emphases within an Approved Degree</td>
<td></td>
</tr>
<tr>
<td>☐ New K-12 Endorsements</td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Program Changes:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Program Restructure</td>
<td></td>
</tr>
<tr>
<td>☐ Program Transfer</td>
<td></td>
</tr>
<tr>
<td>☐ Program Consolidation</td>
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<tr>
<td>☐ Program Suspension</td>
<td></td>
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<tr>
<td>☐ Program Discontinuation</td>
<td></td>
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<tr>
<td>☐ Program Name Change</td>
<td></td>
</tr>
<tr>
<td>☐ Out-of-Service Area Delivery of a Program</td>
<td></td>
</tr>
<tr>
<td>☐ Reinstatement of a Previously Suspended Program</td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Administrative Unit Changes:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>☐ New Administrative Units</td>
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</tr>
<tr>
<td>☐ Administrative Unit Transfer</td>
<td></td>
</tr>
<tr>
<td>☐ Administrative Unit Restructure</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>☐ Reinstatement of Previously Suspended Administrative Units</td>
<td></td>
</tr>
<tr>
<td>☐ Other</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Creation of Non-Administrative</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ New Center</td>
<td></td>
</tr>
</tbody>
</table>
Additional Approvals (if applicable)

Graduate Council* □ Yes □ No
Council on Teacher Education* □ Yes □ No

Section I: The Request

R401 Purpose* The School of Teacher Education and Leadership (TEAL) requests to add Science Education as a specialization to the existing Master of Education in Curriculum and Instruction found within the department.

Section II: Program Proposal

Proposed Action & Rationale* In the 2016-2017 academic year, the department faculty of TEAL requested that the Master of Education in Elementary Education and Master of Education in Secondary Education be changed to the Master of Education in Curriculum and Instruction. During this restructuring, the department faculty also updated their specializations by deleting some and revising others. This change was approved and implemented during the Fall of 2017. Before the restructuring, the department of TEAL had a specialization in Math and Science Education. After the restructuring, the Math and Science Education specialization was eliminated and a specialization of Elementary Math was established. However, a specialization in Science Education was inadvertently not included within the new updated specializations on that original R401.

Labor Market Demand (if applicable)

Consistency with Institutional Mission & Institutional Impact* Several of TEAL’s current specializations have courses that students can use to obtain an endorsement through the Utah State Board of Education (USOE). The specialization in Science Education will be similar with the science concentration and elective courses leading to an USOE Elementary STEM endorsement. Like the other specializations, there will be a Plan B or Plan C option. Both planning guides are attached.

Finances* The Elementary STEM endorsement courses are already offered within the
The Elementary STEM endorsement courses are already offered within the department, so no additional costs are anticipated.

Section III: Curriculum (if applicable)

| Program Curriculum Narrative |

Step 5: **Attach** completed Program Curriculum and Degree Map to this request by clicking on the Files 📞 icon located in the upper left-hand corner of the Proposal Toolbox.

Step 6: **Submit**

Click on the save all changes button below.

Scroll to the top left and click on the launch ➤ icon to launch your proposal.
Emma Eccles Jones College of Education and Human Services - School of Teacher Education and Leadership

4.1. a R401 Abbreviated Program Proposal

Proposal Information

Instructions for Completing R401:

Writing Guidelines/Suggestions

USHE R401 Policy

Contact Information

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<tr>
<td>Current Title (if applicable)</td>
<td></td>
</tr>
<tr>
<td>Proposed Title</td>
<td></td>
</tr>
</tbody>
</table>

Step 3: Enter the Correct CIP Code Using the Following Website:

https://usu.curriculog.com/proposal:10193/print
Classification Instructional Programs

CIP Code (6-digits)  130301

Minimum Number of Credits (if applicable)  36

Maximum Number of Credits (if applicable)  36

Type of Degree:  MS

Request

Step 4: **Select** the Type of Change Being Requested.

**New Programs:**
- [ ] New Certificates of Proficiency (except Institutional Certificates of Proficiency)
- [ ] New Certificates of Completion
- [ ] New Post-Baccalaureate and Post-Masters Certificates
- [ ] New Minors
- [ ] New Emphases within an Approved Degree
- [ ] New K-12 Endorsements
- [ ] Other

**Existing Program Changes:**
- [ ] Program Transfer
- [ ] Program Restructure
- [ ] Program Consolidation
- [ ] Program Suspension
- [ ] Program Discontinuation
- [ ] Program Name Change
- [ ] Out-of-Service Area Delivery of a Program
- [ ] Reinstatement of a Previously Suspended Program
- [ ] Other

**Administrative Unit Changes:**
- [ ] New Administrative Units
- [ ] Administrative Unit Transfer
- [ ] Administrative Unit Restructure
- [ ] Administrative Unit Consolidation
- [ ] Reinstatement of Previously Suspended Administrative Units
- [ ] Other

**Creation of Non-Administrative**
- [ ] New Center
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Consistency with Institutional Mission & Institutional Impact* Several of TEAL's current specializations have courses that students can use to obtain an endorsement through the Utah State Board of Education (USBE). The specialization in Science Education will be similar with the science concentration and elective courses leading to an USOE Elementary STEM endorsement. A planning guide is attached.

Finances* The Elementary STEM endorsement courses are already offered within the department, so no additional costs are anticipated.
Section III: Curriculum (if applicable)

Step 5: Attach completed Program Curriculum and Degree Map to this request by clicking on the Files icon located in the upper left-hand corner of the Proposal Toolbox.

Step 6: Submit

Click on the save all changes button below.

Scroll to the top left and click on the launch icon to launch your proposal.
GENERAL EDUCATION COMMITTEE

February 18, 2020
8:30 a.m. – 9:30 a.m.
Champ Hall Conference Room – OM 136

Present: Lee Rickords, College of Agriculture and Applied Sciences (Chair)
Christopher Scheer, Caine College of the Arts
Daniel Holland, Jon M. Huntsman School of Business
Shelley Lindauer, Emma Eccles Jones College of Education and Human Services
Harrison Kleiner, College of Humanities and Social Sciences
Claudia Radel, S.J. & Jessie E. Quinney College of Natural Resources
Greg Podgorski, College of Science
Matt Sanders, Connections
Paul Barr, Office of the Executive Vice President and Provost
Dory Rosenberg, University Libraries
Steve Nelson, USU Eastern
Robert Mueller, Statewide Campuses/Communications Intensive
David Wall, Creative Arts
Charlie Huenemann, Humanities
David Brown, Quantitative Literacy/Intensive
Ryan Bosworth, Social Sciences
John Mortensen, Academic and Instructional Services
Robyn Peterson, Registrar’s Office
Mykel Beorchia, University Advising
Kristine Miller, University Honors Program
Amber Summers-Graham, Secretary

Excused: Thom Fronk, College of Engineering
Sami Ahmed, USUSA President
Lawrence Culver, American Institutions
Ryan Dupont, Life and Physical Sciences

Call to Order – Lee Rickords

Approval of Minutes – No meeting in January – electronic vote only

Course Approvals/Removals/Syllabi Approvals

ENGL 2070 (BHU) APPROVED................................................................. Charlie Huenemann

Motion to approve BHU designation made by Charlie Huenemann. Seconded by Dory Rosenberg. Designation approved.
ANTH 1090/RELS 1090 (BHU) APPROVED ........................................... Charlie Huenemann
Motion to approve BHU designation made by Charlie Huenemann. Seconded by Greg Podgorski. Designation approved.

HIST 4566 (DHA) APPROVED ......................................................... Charlie Huenemann
Motion to approve DHA designation made by Charlie Huenemann. Seconded by Robert Mueller. Designation approved.

ANTH 3320 (DSS) APPROVED ............................................................. Ryan Bosworth
Motion to approve DSS designation made by Ryan Bosworth. Seconded by Matt Sanders. Designation approved.

HONR 3030 (QI) APPROVED ............................................................ Dave Brown
Motion to approve QI designation made by Dave Brown. Seconded by Dan Holland. Designation approved.

Business

University Studies Requirements for General Studies Degrees

The catalog is intentionally vague about the depth requirements for General Studies degrees and essentially guides students to meet with their advisors to discuss requirements. After receiving requests to change the requirements in DegreeWorks, Toni Gibbons, DegreeWorks specialist in the Registrar’s office and Harrison Kleiner went to the Associate Deans committee to discuss clarifying the depth requirements for General Studies degrees. The Associate Deans want to keep the depth requirements in line with the other undergraduate degree programs and encourage students to take two depth courses outside their areas of study. Some of the General Studies degrees are ambiguous as they want the individual student working with their advisor to determine the requirements. Harrison would like the committee members to take a look at the General Studies degrees in their colleges to see if they have a strong opinion about what the Depth requirements for these degrees should be. This information really needs to be communicated with the advisors so that they understand that they should be directing students to get outside of their majors with the depth courses instead of simply choosing two depth courses that may already be built into their programs of study.

Mykel Beorchia suggested creating an advising guide about how General Education requirements work within a General Studies degree. She will put something together and present to the General Education committee. Once approved, she will include it with the advisor training materials.

Accreditation Updates

Harrison Kleiner shared some information about the recent accreditation report. Utah State University will continue to work on General Education assessment. In the future, the accreditors are going to be looking at questions of equity. They are going to want to see universities producing data about how historically marginalized populations are doing in their degree programs as compared to the general student population. USU’s General Education Assessment Plan makes that really easy to do because all of the assessment work done by instructors is all tied to an A number making it easy to aggregate the data. The committee’s plan anticipated this shift so Utah State University will be in good shape when this comes around.
QI Rubric/Guidelines Discussion

David Brown has put together a proposed QI rubric and asked the committee to review it and provide him with feedback. It was also suggested that committee members should share the rubric with instructors in their colleges who teach QI courses to get a sense of how the language works with learning quantitative reasoning within different disciplines.

Adjourn - 9:00 AM
There has been some confusion and lack of consistency with University Studies requirements for various Gen Studies degrees around the colleges. We have discussed this with all of the academic Associate Deans from the various colleges and come up with a proposal that we think puts the Gen Studies degrees in alignment with the spirit of the depth requirements.

The view of the Associate Deans was that the General Studies degrees within their colleges were a rarely-used option to give certain students a path to graduate when there was not a way to complete a standard degree within the department. This is why the General Catalog does not list specific requirements for each of the General Studies majors. The Associate Deans determined that they would like to leave the catalog listings intentionally vague so students did not declare a General Studies major without advisor assistance.

It was proposed that each college would determine the appropriate University Studies requirements (depth) for the program codes within their college. These requirements will be added to the University Studies Depth Requirements chart in the catalog beginning with the 2020-21 catalog year. Likewise, the specific requirements will be programmed in Degree Works (based on the program code) beginning with the 2020-21 catalog year.

The active program codes are as follows:

<table>
<thead>
<tr>
<th>Program Code</th>
<th>General Studies Program</th>
<th>College</th>
<th>Current Depth Requirements programmed in Degree Works</th>
<th>Depth Requirements requested by College for 2020-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSAG</td>
<td>Gen Studies Agriculture</td>
<td>AG</td>
<td>Choose 2 of the three (DSS, DHA or DSC)</td>
<td></td>
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<tr>
<td>GSAH</td>
<td>Gen Studies Arts and Humanities</td>
<td>CCA</td>
<td>Choose 2 of the three (DSS, DHA or DSC)</td>
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<tr>
<td>GSEE</td>
<td>Gen Studies: Elementary Education</td>
<td>EEJ</td>
<td>DSS, DSC</td>
<td>DSC, DHA</td>
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<tr>
<td>GSEH</td>
<td>Gen Studies: Human Services <em>(This program code is listed under both the HDFS and CEHS departments)</em></td>
<td>EEJ</td>
<td>DHA, DSC</td>
<td></td>
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<tr>
<td>GSTE</td>
<td>Gen Studies: Technology</td>
<td>EN</td>
<td>Choose 2 of the three (DSS, DHA or DSC)</td>
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</tr>
<tr>
<td>GSHS</td>
<td>Gen Studies: Arts and Humanities</td>
<td>CHASS</td>
<td>DSS, DSC <em>(adjusted to these 2 areas from all 3 areas required on 12/12/19 per Tom Liljegren)</em></td>
<td></td>
</tr>
<tr>
<td>GSPA</td>
<td>Gen Studies: Policy &amp; Administration</td>
<td>CHASS</td>
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<td>CHASS</td>
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<td>Gen Studies Natural Resources</td>
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<tr>
<td>GSSC</td>
<td>Gen Studies: Science</td>
<td>SC</td>
<td>DHA, DSS</td>
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</tbody>
</table>
Quantitative Intensive Designation Guidelines

The five criteria comprising the QL rubric are intended to be used to assess whether a person is beginning to form an aggregate of skills, knowledge, beliefs, dispositions, habits of mind, communication capabilities, and problem solving skills that people need in order to engage effectively in quantitative situations arising in work and in life. This intention is meant to reflect the ideas communicated by the R470, and also the OECD’s definition of Mathematical Literacy.

Classes with a Quantitative Intensive (QI) designation should be useful for furthering the development of the aforementioned aggregate of skills in a person. Moreover, a class with a QI designation should be useful in developing a person’s predisposition for looking at the world through mathematical eyes, and seeing benefits and risks of thinking quantitatively. Confidently asking intelligent questions of experts and confronting authority could be seen as ideal consequences. So could the predisposition to seek a mathematical model, by creating one or obtaining one from experts, and being able to assess the limitations and usefulness of the model. A Quantitative Intensive course should therefore provide a mechanism by which these skills are brought to bare on issues, problems, or ideas germane to a specific upper-division course.

Below are examples of questions that could be present in, or guiding the content of, a course with a QI designation, and so should be identified in any course proposal where they are used as such. Since many courses tend to have a mathematical or a statistical bent, the example questions are separated into those categories.

A QI course with a statistical bent should be informed by the realization that statistics underlies every clinical trial, every opinion survey, every government economic report, every estimate of chance or odds, every assessment of a medical treatment. A QI course could bring this realization into light by having one or more of the following questions at the core of part of its curriculum.

- Do you understand the importance of variability?
- Do you recognize the differences between correlation and causation?
- Do you understand the difference between randomized experiments and observational studies?
- What is the difference between finding no effect and finding no statistically significant effect?
- Can you identify when a statistical model or statistics-based calculation is relevant?

A QI course with a mathematical bent should be informed by the ideology that mathematics is the science of deduction, and is a model for the construction of knowledge, the assessment of truth, as well as the backbone for much of our technologies. A QI course should have, as a focus of part of its curriculum, one or more of the following questions at its core:

- Do you understand how to identify the limits of a model?
- Do you have a sense for the limits of conclusions made from well-defined assumptions?
- Do you have a sense for the ubiquity and importance of mathematics in technological development?
- Can you translate between numerical, verbal, or symbolically represented mathematical facts?

OECD’s Mathematics Literacy: An individual’s capacity to identify and understand the role that mathematics plays in the world, to make well-founded mathematical judgements and at least to engage in mathematics in ways that meet the needs of that individual’s current and future life as a constructive, concerned and reflective citizen, [1].
Can you identify reasoning that is deductive versus scientific versus inferential?

Do you exercise caution in generalizations?

References