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To: [Gupta, Jay](#)
Cc: [Hadad, Christopher](#); [Vankeerbergen, Bernadette](#); [Steele, Rachel](#); [Hilty, Michael](#)
Subject: MS and PhD in QISE & QISE courses 7100-7102, 7111-7113
Date: Thursday, November 21, 2024 2:52:00 PM
Attachments: [image001.png](#)
[QISE NMS Subcommittee Feedback - 11-7-24.docx](#)

Good afternoon,

On Thursday, November 7th, the Natural and Mathematical Sciences Subcommittee of the ASC Curriculum Committee reviewed a request to create a new, interdisciplinary MS and PhD in Quantum Information Science and Engineering, including new courses: QISE 7100, 7101, 7102, 7111, 7112 & 7113.

The Subcommittee declined to vote on the programs and the courses at this time, as they have several feedback points that they ask the proposers address in a revision. Given the length of the feedback, I have attached it as a separate word document for your convenience. I have also pasted the feedback below my signature in this e-mail.

When a revision to the request is completed that addresses the Subcommittee's feedback, please email a copy to Bernadette Vankeerbergen, Assistant Dean for Curriculum, and me, and we will work to ensure that it receives the appropriate review.

Should you have any questions regarding this feedback, please do not hesitate to reach out to Christopher Hadad (faculty Chair of the NMS Subcommittee, cc'd on this e-mail) or me.

Best,
Jennifer



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Pronouns: she/her/hers

1. New interdisciplinary MS and PhD in Quantum Information Science and Engineering
 - a. The Subcommittee notes that the proposal does not appear to mention responsible research training, which they believe is a requirement of the NSF NRT grant. The Subcommittee requests that the program proposers address this omission and provide information on how responsible research training will be incorporated.

- b. The Subcommittee notes that the proposal does not mention teaching assistant opportunities for QISE students at any stage, though TAs are anticipated for the courses. The Subcommittee is unclear on where these TAs will be sourced and asks that the proposers offer clarification on this issue.
- c. The proposal states that the MS program will be primarily delivered with in-person format, but asynchronous options will be encouraged for students balancing other responsibilities. The Subcommittee recommends that the proposers remove this reference to online options and suggests that distance learning be considered at a later time to avoid delaying the approval process. (Indeed, in order for courses to be offered online, these need to go through an additional DL approval process and that is currently not part of how the courses are being submitted.) With this, the Subcommittee encourages the proposers to consider offering in-person courses during non-traditional hours to accommodate the needs of these students. [Proposal p. 8]
- d. The Subcommittee notes that the MS and PhD programs are based on the same set of courses, with the primary distinction being whether students will engage in original research. The Subcommittee raises the concern of whether there are enough courses to sustain the programs individually or if there are other experiences that will be sufficient to set them apart.
- e. The Subcommittee notes that course number 7999 is currently used in much of the proposal to represent research for both the MS and PhD programs. While it is accurate that 7999 is used for research for master's thesis, the University uses two other numbers at the PhD level: 8998 is used for pre-candidacy research for dissertation & 8999 is used for post-candidacy research for dissertation. Once in the proposal, on p. 161, QISE 8999 is mentioned as being the number for post-candidacy research, but that page also indicates that 7999 will be used for pre-candidacy research—thus erasing the distinction between 7999 for master's students and 8998 for pre-candidacy doctoral students. Please adjust the proposal where necessary, including the advising sheets at the end of the package.
- f. The Subcommittee notes a discrepancy regarding degree paths for the MS program. The rationale section of the proposal outlines three paths towards the degree (course-based, project-based, or thesis-based), but the degree requirements section of the proposal presents only two options (course-focused and thesis-focused). The Subcommittee asks that this difference be reconciled to ensure consistency. [Proposal p. 8, 23]

2. QISE 7100

- a. Throughout the program proposal and the graduate handbook, this course is said to be 4 credits. Yet, the syllabus indicates it will be a 3-credit course and will only meet 3x55 min each week (p. 1).
- b. The Subcommittee asks that the course schedule list the required readings for each class session to provide students with a better understanding of the weekly workload and clarify which readings are aligned with each specific class.

[Syllabus pp. 5-7]

- c. The reviewing faculty recommend that the unit use the most recent version of the university's diversity statement if they wish to keep it in the syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 9]

3. QISE 7101

- a. Throughout the program proposal and the graduate handbook, this course is said to be 4 credits. Yet, the syllabus indicates it will be a 3-credit course and will only meet 3x55 min each week (p. 2).
- b. As it can be challenging to assess individual contributions when students work together on projects, the Subcommittee suggests that there be an opportunity for students to perhaps grade their group members or clearly identify the specific components of the final project they contributed to in order to provide accountability.
- c. The Subcommittee requests that the course include individual assessment as this does not appear to be a defined component of the course, even with the requirement for students to submit their own work when collaborating with others.
- d. The Subcommittee requests that the department provide clarification on how the same textbook will be utilized across QISE 7100-7102 Including the specific readings for each class session within the course schedule in the syllabus would help demonstrate that the text will effectively support each course. [Syllabus pp. 6-7]
- e. Given the strict participation expectations, the Subcommittee recommends including a brief section in the syllabus outlining potential exceptions in special circumstances. [Syllabus p. 2]
- f. If a rubric exists for the weekly reflections, the Subcommittee requests that it be shared. Providing this rubric would offer students clear guidance on the assignment expectations.
- g. It appears that language regarding exams has been carried over from another syllabus. Since there are no exams in this course, the Subcommittee recommends removing this section. [Syllabus p. 5]
- h. The syllabus states that the course is divided into weekly modules, with each module released a week ahead of time. This language also appears to be a remnant from another syllabus and does not seem relevant to the delivery of this course, so the Subcommittee also recommends removing this language. [Syllabus p. 2]
- i. The reviewing faculty recommend that the department use the most recent version of the university's diversity statement if they wish to keep it in the syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 9]

4. QISE 7102

- a. The Subcommittee requests that the department provide clarification on how the same textbook will be utilized across QISE 7100-7102. Including the specific readings for each class session within the course schedule in the syllabus would help demonstrate that the text will effectively support each course without redundancy. [Syllabus pp. 4-5]
 - b. The reviewing faculty recommend that the department use the most recent version of the university's diversity statement if they wish to keep it in the syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 7]
5. QISE 7111
- a. The reviewing faculty recommend that the department use the most recent version of the university's diversity statement if they wish to keep it in the syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 4]
6. QISE 7112
- a. The reviewing faculty recommend that the department use the most recent version of the university's diversity statement if they wish to keep it in the syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 4]
7. QISE 7113
- a. Credit and contact hours:
 - i. P. 160 of the program proposal indicates that this course will be offered as 1+ credits. However, the syllabus indicates it will be offered by 3-credit hour increments (p.1). Please reconcile the two statements.
 - ii. Furthermore, p. 1 of the syllabus indicates that this course will be delivered in 7 weeks. If this is correct, then the students should expect 6 hours per week per credit hour (instead of the stated 3). The next sentence should then read "For research rotations, this translates to **18-20** hours per week during the rotation" (instead of the stated 9-10).
 - b. Since this course will be repeated by students, the Subcommittee suggests that the proposers remove the "1st Year" from the course title. As the required core courses for the PhD degree references 15+ required credits of 7113, students will be repeating this course beyond their first year.
 - c. The Subcommittee requests that the software statement in the syllabus be revised to specify that the course software will depend on the particular lab. Additionally, they recommend identifying the possible software options that may be used, providing students with an idea of the tools they will encounter. [Syllabus p. 2]
 - d. The reviewing faculty recommend that the department use the most recent version of the university's diversity statement if they wish to keep it in the

syllabus. The updated statement can be found in an easy to copy/paste format on the [Arts and Sciences Curriculum and Assessment Services website](#). [Syllabus p. 4]