Course: Add: X ___ Delete: ___
(check all that apply) Change: Number ___ Title ___ SCH ___ Description ___ Prerequisite ___

Response Required: New course will be part of major ___ minor ___ as a required ___
or elective _X__ course
Response Required: New course will introduce ___, reinforce _X___, or apply ___ concepts

If new, provide Course Prefix, Number, Title, Measurable Student Learning Outcomes, SCH
Value, Description, prerequisite, and lecture/lab hours if applicable. If in current online catalog,
provide change and attach text with changes in red and provide a brief justification.

Justification: It is needed to add the course with the title of Graduate Research in Mathematics
rather than use Independent Study in Mathematics. In addition, this course will
focus on the research topic.

MATH 5195-5695, Graduate Research in Mathematics
One to six semester hours (FL/SP/SS)

Course Descriptions:
Students work on a theoretical or applied research project. The plan of study is negotiated by the
faculty member and the student. Course may be repeated under different topic for credit.
Prerequisite: Consent of the instructor and the department. Offer only “Satisfactory/Fail” grades.

Student Learning Outcomes:
Upon successful completion of this course, the student will be able to:
• express themselves both orally and in writing using well-constructed mathematical
arguments;
• integrate knowledge and ideas in a coherent and meaningful manner;
• locate and use information for conducting mathematical investigation and/or research;
• work independently towards conducting mathematical research or inquiry;
• present the research problem and any results attained to a knowledgeable audience.
<table>
<thead>
<tr>
<th>Approvals:</th>
<th>Signature</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair</td>
<td>Qingwen Ni</td>
<td></td>
</tr>
<tr>
<td>Department Curriculum Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>Rafic Bachnak</td>
<td></td>
</tr>
<tr>
<td>Department</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>James A Norris</td>
<td></td>
</tr>
<tr>
<td>College Curriculum Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dean</td>
<td>Kevin Lindberg</td>
<td></td>
</tr>
</tbody>
</table>