ACADEMIC POLICIES COMMITTEE
MICS 2015 Proposals
Table of Contents

Proposal #1

To drop MTH362 from the Mathematics course listings.
To add MTH363 to the Mathematics course listings.

Brief:
The Biology Department requests that MICS change MTH362, a 2-unit calculus-based statistics course into a 3-unit calculus-based statistics course.

Proposal #2

To add a minor: Computational Science - Psychology

Brief:
The Psychology Department requests that MICS add a minor.

Proposal #3

To replace the project option in the Computational Science – Physics minor.

Brief:
The MICS and Physics Departments request a course change in the project portion of the Computational Science – Physics minor.

Proposal #4

To drop CSC496 from the Computer Science Program.
To drop CSC497 from the Computer Science Program.
To add CSC495 to the Computer Science Program.
To drop ISS496 from the Information Systems Program.
To drop ISS497 from the Information Systems Program.
To add ISS495 to the Information Systems Program.
To drop MTH496 from the Mathematics Program.
To drop MTH497 from the Mathematics Program.
To add MTH495 to the Mathematics Program.

Brief:
The MICS Department requests a reconfiguration of the Service Learning courses from a two semester sequence totaling 3 units to a single, 3-unit semester course.

Proposal #5

To drop MTH 382 from the BA and BS in mathematics.
To drop MTH 392 from the BA and BS in mathematics.
To add MTH 383 to the BA and BS in mathematics.

Brief:
The MICS Department requests that the 2-unit Mathematical Statistics course and the 2-unit Mathematical Probability course be recombined into a single 3-unit course.

Proposal #6

To change the title and modify the description of CSC 154

Proposal #7

To add ECO 460 to the list of electives for the Mathematics (BA) and Mathematics (BS) majors.

ACADEMIC POLICIES COMMITTEE
LONG FORM PROPOSAL TEMPLATE

- Proposals should use this long form if they:
  - Need faculty and/or WASC approval;
  - Request elimination, addition or revision of multiple courses and/or courses impacting other departments or schools; or
  - Request elimination, addition or revision of a major, minor, concentration or credential program.
- All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee.
- **Please read the attached "APC Proposal Reference Information" before completing this form.**
- For ease of APC Committee reading, please submit your responses in BLUE text.

SUBMISSION DATE: 6-Nov-2015

SECTION ONE: WHO

1. **Academic Unit Name:** Mathematical, Information, and Computer Sciences
2. **Recorded Department/School Vote** (Please provide the number and percentage of department/school faculty who voted in approval for this proposal): 5 Yes, 0 No
3. **Impact on Other Department(s)/School(s)** (Are there other departments/schools impacted by this proposal? If so, how did the other department[s]/school[s] vote on this proposal?): This is a service course which has primarily been populated with Biology majors, but will draw a wider audience in other fields in the future. Here is a complete list of the catalog sections (see attached catalog copy with track changes) in which the course appears:
   a. • Biology, B.A.
   b. • Biology, B.S.
   c. • Environmental Science (Biology), B.S.
   d. • Environmental Science (Chemistry), B.S.
   e. • Computational Science Minor - Biology/Environmental Science
   f. • Computational Science Minor - Biology/Genetics
   g. • Computational Science Minor - Chemistry
   h. • Computational Science Minor - Psychology
   i. • Mathematics Minor

   Biology Vote: 11 Yes, 0 No

   Chemistry Vote: 7 Yes, 0 No

   Physics Vote: 1 Yes, 0 No

4. **Impact on Services:**
   a. Ryan Library:
      i. What new library acquisitions, if any, will be needed to support the proposed changes (if none, please state that): None
      ii. Person and Date of Contact: _____
   b. Instructional Technology:

i. How many new online/hybrid courses does this proposal include: None
ii. How many instructors will need online training or course development assistance over the first two sessions if this proposal is approved: None
iii. Person and Date of Contact:_____

SECTION TWO: WHAT

1. **Overall Proposal Description (**In one sentence, describe the nature of the proposed changes or the proposed new academic offering):
   Change the number of units in a course requirement by deleting a two (2) unit course and adding a three (3) unit course.
2. **Items** (Please describe each item of the proposal with a phrase or one-sentence abstract. Examples might be, "Item 1: To drop XXX course from XX program. Item 2: To add XX course as a requirement", etc. Some proposals will only have 1 item. Add item lines as needed.):
   a. Item 1: To drop MTH 362 from the Mathematics course listings.
   b. Item 2: To add MTH 363 to the Mathematics course listings.

SECTION THREE: WHY

1. **General** Rationale (Please provide a one-sentence rationale for this proposal.):

   From the e-mail of 1:02 p.m. 20-Oct-2015 sent from the Chair of the Biology department to the Chair (Acting) of the MICS Department:

   The Biology Department requests that MICS change MTH362, a 2-unit Calculus-Based Statistics course that is required for Biology and Environmental Science majors, into a 3-unit statistics course. There are two major reasons for requesting this change:

   1) Our majors need a more robust statistics course in order to meet the demands of the data analyses required by modern biology, which includes many large data sets related to genomics, proteomics, metabolomics, etc. In particular, students need to learn the use of the statistics package R, and this content cannot be added into the existing 2-unit course without deleting other important content. Moreover, R is not appropriate for the lower division statistics course MTH203, which serves a different audience.
   2) Many of our majors are going on to health professions schools or graduate schools that require a 3-unit statistics course. Thus, the new MTH363 course would automatically serve their needs as well. In the past, to meet the graduate school requirement, the students would take MTH203 and then do a 1-unit independent study to have it count for the upper-division MTH362. Alternatively, they would take MTH362 and then do a 1-unit independent study to get to 3 units total. Both of these options are obviously sub-optimal solutions for the students and the MICS faculty.

   This is a two unit per year increase in staffing load (2/24 FTE), because this class is scheduled to be taught twice per year starting in 2016-17. The change was made

(approved via APC changes) in 2015-16, but staffing shortages in MICS postponed the change for a year.

2. **Mission (**How do the proposed changes support the mission of the university?): It strengthens the programs in Biology, Biochemistry and Environmental Science by helping the students to be better prepared for work (more exposure to relevant technology) and prepared to meet change admissions requirements for some graduate and medical school programs.
3. **Internal Factors (**Please provide additional rationale by answering the following questions as applicable: How does the proposal(s) …address the PLNU strategic plan? …address factors arising from assessment data or program review findings? …accommodate the department or school's learning outcomes for the major, minor, concentration, etc.? …increase departmental effectiveness/efficiency? …enhance enrollment or generate new revenue? What impact will it have on the size of the major, minor, etc.? Other internal rationale?): This change is being requested due to findings from the Biology Program Review, which is still in progress. The findings relating to the problems with the current statistics course came from three sources: 1) senior exit interviews, 2) interviews with recent alumni, and 3) the department chair's experience with students trying to get approval for various statistics class options.
4. **External Factors (** Please provide additional rationale by answering the following questions as applicable: To what extent have external factors motivated this proposal, for example what comparable colleges and universities are doing? …improvements suggested by alumni or outside reviewers? …stipulations imposed by outside accrediting agencies? …other external rationale?.)**:** See above.

SECTION FOUR: HOW

A. **Assessment Plan** – For new programs, please provide an assessment plan. (If not needed, please state as such.) The assessment results from this course will flow into the existing assessment plans where the results from the previous course had flowed.

B. **Teach-Out** – Provide a plan detailing how students who begin this program will be able to finish if the institution determines that the program is to be closed. (If not needed, please state as such). NA

C. **Catalog Copy**--In this section, please demonstrate in a two-step process how the department/school would like the change to be made. Keep in mind academic policies with regard to number of units for major, minors, certificates, etc. See Academic Proposal Resource Information at the end of this template.

- **Step 1:** In the applicable set of boxes below:
  - For revision, addition or elimination of majors, minors, concentrations or certificates, complete Sections C1-2, entering current and/or proposed catalog text as indicated in the section instructions.
  - For revision, addition or elimination of courses only, please scroll down to and complete Section C-2 only, entering current and/or proposed catalog text as indicated in the section instructions

Section C-1—Program Changes: Proposals for elimination of a major, minor, concentration

or certificate should complete the shaded (left) side of this section only, proposals for addition of any of these should complete the unshaded (right) side only, and proposals for revision of any of these should complete both sides of Section A.	
Current Program (or major, minor, concentration, certificate) Name and Introductory Text: NA	Proposed Revised or New Program (or major, minor, concentration, certificate) Name and Introductory Text: NA
Current Program Learning Outcome: NA	Proposed Revised or New Program Learning Outcomes (needed for new majors only): NA
Current Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: **NA**	Proposed Revised or New Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: **NA**
Current Total Lower Division Units: NA	**Proposed Total Lower Division Units:** NA
Current Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA	Proposed Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA
Current Total Upper Division Units: NA	**Proposed Total Upper Division Units:** NA
Current Elective Options (Highlight new or revised classes in red.): NA	Proposed Elective Options (Highlight new or revised classes in red.): NA
Current Total Required Elective Units: NA	**Proposed Total Required Elective Units:** NA
Current Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA	Proposed Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA
Current Total Program Units: NA	**Proposed Total Program Units:** NA
Current Notes (if any) at the bottom of program catalog copy: NA	Proposed Notes (if any) at the bottom of program catalog copy: NA
Section C-2—Course Changes: Proposals for course elimination should complete the shaded (left) side only, proposals for course addition should complete the unshaded (right) side only, and proposals for program or course revision should complete both sides of Section B. Proposals involving only course additions, eliminations or revisions should complete only this section.	
Current course code and description (including units, prerequisites and grade type): NA	Proposed new course code and description (including units, course learning outcomes, prerequisites and grade type): NA
Course 1: **MTH 362 - Calculus Based Statistics (2)** A first course in descriptive and inferential	Course 1: **MTH 363 - Calculus Based Statistics With R (3)** A first course in descriptive and inferential statistics for

statistics for general students who have taken calculus. Topics include experimental design, sampling and sampling distributions, point estimation and hypothesis testing supported by the use of statistical software. Offered on a Quad basis. Not applicable toward a major in Mathematics. Prerequisite: MTH 144 or MTH 164 or equivalent. Class Learning Outcomes: Students will be able to compute measures of central tendency for data. Students will be able to compute measures of dispersion for data. Students will be able to use statistical methods to make inferences from data.	general students who have taken calculus. Topics include experimental design, sampling and sampling distributions, estimation and hypothesis testing. This course also provides a basic introduction to statistical analysis in the statistical software package R. Not applicable toward a major in Mathematics. Prerequisite: MTH 144 or MTH 164 or equivalent. Class Learning Outcomes: Students will be able to compute measures of central tendency for data. Students will be able to compute measures of dispersion for data. Students will be able to use statistical methods to make inferences from data. Students will be able to implement basic statistical analyses in R.
Course 2: **NA**	Course 2: NA
Course 3: NA	Course 3: NA

- **Step 2:**
  - Arrange a meeting: Arrange a meeting with the APC chair to review the completed portion of the proposal and to receive assistance from the Records liaison in submission of current and/or draft proposed catalog copy called for.
  - Attach Catalog copy:
    - For proposed revisions to existing programs, majors, minors, courses, etc, after this page attach the following supplied by Records: 1) The current year catalog copy for that program, major, etc, and 2) the proposed revised catalog pages for your proposal, based on the information from Step One.
    - For entirely new programs, majors, minors, courses, etc, after this page attach the draft new catalog pages for your proposal supplied by Records based on the information in Step One.

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY AFTER THIS PAGE AS SEPARATE PAGES.

See attached file (page 59 and throughout).

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY BEFORE THIS PAGE AS SEPARATE PAGES.

SECTION FIVE: SUMMARY CHECKLIST

8

Review course and staffing impact with your academic unit's direct report (College Dean or Provost).

- **Total course additions:** 1
- **Total course deletions:** 1
- **Total unit additions:** 1
- **Total unit deletions:** 0
- **Staff impact (increase or decrease):** 2 unit increase
- **Rotation of courses or deletions of sections to accommodate additions:** This course is taught once each semester and course sizes do not allow for reductions or change in rotation.

I have reviewed this proposal and the items above and believe the proposal meets all university requirements and is ready for APC review.

Department or School Direct Report:

_____ **Date**_____

College Dean or Provost as applicable

APC Proposal Reference Information

DEADLINES:

1. Review any Long Form proposal drafts in person with your College Dean or appropriate administrator by **October 2 ….,** prior to submitting the proposal to APC;
2. Submit a short narrative to the APC chair highlighting the proposed changes by **October 9;**
3. Final Long Form proposals are due no later than **November 6 …, MEETING THE APPROPRIATE DEADLINES WILL ENSURE THAT APC WILL HAVE ENOUGH TIME TO PROCESS YOUR PROPOSAL(S). PROPOSALS SUBMITTED AFTER THAT DATE MOST LIKELY WILL BE CONSIDERED FOR THE 2017-2018 CATALOG.**

BASIC ASSUMPTIONS:

1. May be generated by any faculty member within a department;
2. Are made as a result of a department or school program review and assessment data or due to external requirements made by outside accrediting agencies (provide appropriate documentation);
3. Are voted on and approved by all full time department members;
4. Will be thoroughly discussed with other departments who are directly affected by the proposed changes (a written response must be received by affected schools or departments and included in the proposal);
5. Will be reviewed by the dean of the College of Arts & Humanities or the Dean of Natural and Social Sciences or appropriate administrator before the proposal is sent to APC;
6. APC chair will consult with Institutional Research and Institutional Effectiveness to determine any potential external reporting problems;
7. Will be recommended for consideration by APC to the faculty at large;
8. Are finally voted on by the entire faculty.

ACADEMIC POLICIES INFORMATION:

Majors:

1. Maximum number of units for a B.A. major: **49 units beyond G.E.**
2. Maximum number of units for a B.S. major: **59 units beyond G.E.**
3. Minimum number of upper division units in any major: **24 units**, half of which must be completed in residency.

Minors:

1. Minimum number of units for a minor: **16 units**
2. Minimum number of upper division units: **12 units**
3. Minimum number of units completed in residency: **9 units**
4. Of the 16+ units in the minor, **9 units** must be distinct from the major.

Certificates:

1. Only academic certificates are acceptable for approval.

10

2. Certificates vary in size: **6-15 units** when associated with a major but up to **24 units** when not aligned with a major.
3. 50% of the units must be unique to that certificate.

ACADEMIC POLICIES COMMITTEE
LONG FORM PROPOSAL TEMPLATE

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  - Request elimination, addition or revision of a major, minor, concentration or credential program.
- All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee.
- **Please read the attached "APC Proposal Reference Information" before completing this form.**
- **For ease of APC Committee reading, please submit your responses in BLUE text.**

SUBMISSION DATE: 6-Nov-2015

SECTION ONE: WHO

1. **Academic Unit Name:** Mathematical, Information, and Computer Sciences
2. **Recorded Department/School Vote** (Please provide the number and percentage of department/school faculty who voted in approval for this proposal): 5 Yes, 0 No
3. **Impact on Other Department(s)/School(s)** (Are there other departments/schools impacted by this proposal? If so, how did the other department[s]/school[s] vote on this proposal?):

   This is a new minor:

   a. • Computational Science Minor - Psychology

   Biology Vote: 11 Yes, 0 No

   Chemistry Vote: 7 Yes, 0 No

   Physics Vote: 1 Yes, 0 No

   Psychology Vote: 6 Yes, 0 No

4. **Impact on Services:**
   a. Ryan Library:
      i. What new library acquisitions, if any, will be needed to support the proposed changes (if none, please state that): None
      ii. Person and Date of Contact: _____
   b. Instructional Technology:
      i. How many new online/hybrid courses does this proposal include: None
      ii. How many instructors will need online training or course development assistance over the first two sessions if this proposal is approved: None
      iii. Person and Date of Contact:_____

SECTION TWO: WHAT

1. **Overall Proposal Description (**In one sentence, describe the nature of the proposed changes or the proposed new academic offering): NA
2. **Items** (Please describe each item of the proposal with a phrase or one-sentence abstract. Examples might be, "Item 1: To drop XXX course from XX program. Item 2: To add XX course as a requirement", etc. Some proposals will only have 1 item. Add item lines as needed.):
    a. Item 1: To add a minor: Computational Science Minor - Psychology

SECTION THREE: WHY

1. **General** Rationale (Please provide a one-sentence rationale for this proposal.):

   The *Computational Science Minor – Psychology* is to be offered to those who wish to combine their knowledge of Psychology with Mathematics and Computer Science. This minor allows students to have the skills to work in cross disciplinary teams to solve challenging research problems. This minor is intended for students majoring in Computer Science, Mathematics, or Psychology.

2. **Mission (**How do the proposed changes support the mission of the university?): NA
3. **Internal Factors (**Please provide additional rationale by answering the following questions as applicable: How does the proposal(s) …address the PLNU strategic plan? …address factors arising from assessment data or program review findings? …accommodate the department or school's learning outcomes for the major, minor, concentration, etc.? …increase departmental effectiveness/efficiency? …enhance enrollment or generate new revenue? What impact will it have on the size of the major, minor, etc.? Other internal rationale?): NA
4. **External Factors (** Please provide additional rationale by answering the following questions as applicable: To what extent have external factors motivated this proposal, for example what comparable colleges and universities are doing? …improvements suggested by alumni or outside reviewers? …stipulations imposed by outside accrediting agencies? …other external rationale?.)**:** NA

SECTION FOUR: HOW

A. **Assessment Plan** – For new programs, please provide an assessment plan. (If not needed, please state as such.) NA

B. **Teach-Out** – Provide a plan detailing how students who begin this program will be able to finish if the institution determines that the program is to be closed. (If not needed, please state as such). If it is determined that the minor will not continue, MICS commits to providing a way for students who have declared the minor to complete the minor.

C. **Catalog Copy**--In this section, please demonstrate in a two-step process how the department/school would like the change to be made. Keep in mind academic policies with regard to number of units for major, minors, certificates, etc. See Academic Proposal Resource Information at the end of this template.

- **Step 1:** In the applicable set of boxes below:

- For revision, addition or elimination of majors, minors, concentrations or certificates, complete Sections C1-2, entering current and/or proposed catalog text as indicated in the section instructions.
- For revision, addition or elimination of courses only, please scroll down to and complete Section C-2 only, entering current and/or proposed catalog text as indicated in the section instructions

Section C-1—Program Changes: Proposals for elimination of a major, minor, concentration or certificate should complete the shaded (left) side of this section only, proposals for addition of any of these should complete the unshaded (right) side only, and proposals for revision of any of these should complete both sides of Section A.	
Current Program (or major, minor, concentration, certificate) Name and Introductory Text: NA	Proposed Revised or New Program (or major, minor, concentration, certificate) Name and Introductory Text: Computational Science Minor – Psychology A minor in Computational Science is offered to those who wish to combine their knowledge of Biology, Chemistry, Physics, or Psychology with Mathematics and Computer Science. This minor allows students to have the skills to work in cross disciplinary teams to solve challenging research problems. This minor is intended for students majoring in Biology, Chemistry, Computer Science, Mathematics, Physics or Psychology.
Current Program Learning Outcome: NA	Proposed Revised or New Program Learning Outcomes (needed for new majors only): NA
Current Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA	Proposed Revised or New Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: **Psychology Majors - Required Courses** PSY 103 - General Psychology(GE) (3) CSC 143 - Introduction to Computer Programming (3) MTH 144 - Calculus With Applications (GE) (4) **Computer Science Majors - Required Courses** PSY 103 - General Psychology(GE) (3) CSC 143 - Introduction to Computer Programming (3) MTH 164 - Calculus I (GE) (4) **Mathematics Majors - Required Courses** PSY 103 - General Psychology(GE) (3) CSC 143 - Introduction to Computer Programming (3) MTH 164 - Calculus I (GE) (4)

Current Total Lower Division Units: NA	**Proposed Total Lower Division Units:** 6
Current Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA	Proposed Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) PSY 320 - Social Psychology (3) PSY 301 - Physiological and Neuropsychology (4) OR PSY 409 - Psychology of Cognition and Learning (4) CSC 302 - UNIX and Python Scripting for Computational Science (2) CSC 311 - R for Computational Science (1) **PROJECT:** *(Choose One Set)* HON 498 - Honors Project I (2) HON 499 - Honors Project II (1) OR MTH 495 - Service Learning in Mathematics (3) OR CSC 495 - Service Learning in Computer Science (3) **Psychology Major - Required Courses** CSC 322 - Data Management for Computational Science (2) MTH 363 - Calculus Based Statistics With R (3) **Computer Science Majors - Required Courses** ISS 414 - Data Base Systems and Web Integration (4) MTH 383 - Mathematical Probability and Statistics (3) **Mathematics Majors - Required Courses** CSC 322 - Data Management for Computational Science (2) MTH 383 - Mathematical Probability and Statistics (3)
Current Total Upper Division Units: NA	**Proposed Total Upper Division Units:** **UD units for Psychology Majors: 18** **UD units for Computer Science Majors: 20** **UD units for Mathematics Majors: 18**
Current Elective Options (Highlight new or revised classes in red.): NA	Proposed Elective Options (Highlight new or revised classes in red.): NA
Current Total Required Elective Units: NA	**Proposed Total Required Elective Units:** NA
Current Names and Course Titles of	Proposed Names and Course Titles of

Concentration #1 (if any—use additional boxes for each concentration.): NA	Concentration #1 (if any—use additional boxes for each concentration.): NA
Current Total Program Units: NA	**Proposed Total Program Units:** **Minor Total units for Psychology Majors: 28** **Minor Total units for Computer Science Majors: 30** **Minor Total units for Mathematics Majors: 28**
Current Notes (if any) at the bottom of program catalog copy: NA	Proposed Notes (if any) at the bottom of program catalog copy: NA
Section C-2—Course Changes: Proposals for course elimination should complete the shaded (left) side only, proposals for course addition should complete the unshaded (right) side only, and proposals for program or course revision should complete both sides of Section B. Proposals involving only course additions, eliminations or revisions should complete only this section.	
Current course code and description (including units, prerequisites and grade type): NA	Proposed new course code and description (including units, course learning outcomes, prerequisites and grade type): NA
Course 1: NA	Course 1: NA
Course 2: NA	Course 2: NA
Course 3: NA	Course 3: NA
Course 4: NA	Course 4: NA
Course 5: NA	Course 5: NA
Course 6: NA	Course 6: NA

- **Step 2:**
  - Arrange a meeting: Arrange a meeting with the APC chair to review the completed portion of the proposal and to receive assistance from the Records liaison in submission of current and/or draft proposed catalog copy called for.
  - Attach Catalog copy:
    - For proposed revisions to existing programs, majors, minors, courses, etc, after this page attach the following supplied by Records: 1) The current year catalog copy for that program, major, etc, and 2) the proposed revised catalog pages for your proposal, based on the information from Step One.
    - For entirely new programs, majors, minors, courses, etc, after this page attach the draft new catalog pages for your proposal supplied by Records based on the information in Step One.

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY AFTER THIS PAGE AS SEPARATE PAGES.

See attached file (pages 32-33).

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY BEFORE THIS PAGE AS SEPARATE PAGES.

SECTION FIVE: SUMMARY CHECKLIST

Review course and staffing impact with your academic unit's direct report (College Dean or Provost).

- **Total course additions:** 0
- **Total course deletions:** 0
- **Total unit additions:** 0
- **Total unit deletions:** 0
- **Staff impact (increase or decrease):** None
- **Rotation of courses or deletions of sections to accommodate additions:** NA

I have reviewed this proposal and the items above and believe the proposal meets all university requirements and is ready for APC review.

Department or School Direct Report:

_____ **Date**_____

College Dean or Provost as applicable

ACADEMIC POLICIES COMMITTEE
LONG FORM PROPOSAL TEMPLATE

- Proposals should use this long form if they:
  - Need faculty and/or WASC approval;
  - Request elimination, addition or revision of multiple courses and/or courses impacting other departments or schools; or
  - Request elimination, addition or revision of a major, minor, concentration or credential program.
- All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee.
- **Please read the attached "APC Proposal Reference Information" before completing this form.**
- **For ease of APC Committee reading, please submit your responses in BLUE text.**

SUBMISSION DATE: 6-Nov-2015

SECTION ONE: WHO

1. **Academic Unit Name:** Mathematical, Information, and Computer Sciences
2. **Recorded Department/School Vote** (Please provide the number and percentage of department/school faculty who voted in approval for this proposal): 5 Yes, 0 No
3. **Impact on Other Department(s)/School(s)** (Are there other departments/schools impacted by this proposal? If so, how did the other department[s]/school[s] vote on this proposal?):

   This catalog change in upper division requirements impacts the following minor:

   a. • Computational Science Minor - Physics

   Biology Vote: 11 Yes, 0 No

   Chemistry Vote: 7 Yes, 0 No

   Physics Vote: 1 Yes, 0 No

4. **Impact on Services:**
   a. Ryan Library:
      i. What new library acquisitions, if any, will be needed to support the proposed changes (if none, please state that): None
      ii. Person and Date of Contact: _____
   b. Instructional Technology:
      i. How many new online/hybrid courses does this proposal include: None
      ii. How many instructors will need online training or course development assistance over the first two sessions if this proposal is approved: None
      iii. Person and Date of Contact:_____

SECTION TWO: WHAT

1. **Overall Proposal Description (**In one sentence, describe the nature of the proposed changes or the proposed new academic offering): NA

2. **Items** (Please describe each item of the proposal with a phrase or one-sentence abstract. Examples might be, "Item 1: To drop XXX course from XX program. Item 2: To add XX course as a requirement", etc. Some proposals will only have 1 item. Add item lines as needed.):
    a. Item 1: To drop PHY 475 from the Computational Science Minor - Physics
    b. Item 2: To add Honors Project and Service Learning Projects

SECTION THREE: WHY

1. **General** Rationale (Please provide a one-sentence rationale for this proposal.): Restructuring the options for the Project component of the *Computational Science Minor – Physics*. The options in this minor will now match the options in the other Computational Science minors. The two unit course PHY 475 Senior Laboratory and Student Project is being replaced by a menu of three unit courses consisting of either an Honors Project, or a Service Learning Project.
2. **Mission (**How do the proposed changes support the mission of the university?): NA
3. **Internal Factors (**Please provide additional rationale by answering the following questions as applicable: How does the proposal(s) …address the PLNU strategic plan? …address factors arising from assessment data or program review findings? …accommodate the department or school's learning outcomes for the major, minor, concentration, etc.? …increase departmental effectiveness/efficiency? …enhance enrollment or generate new revenue? What impact will it have on the size of the major, minor, etc.? Other internal rationale?): NA
4. **External Factors (** Please provide additional rationale by answering the following questions as applicable: To what extent have external factors motivated this proposal, for example what comparable colleges and universities are doing? …improvements suggested by alumni or outside reviewers? …stipulations imposed by outside accrediting agencies? …other external rationale?.)**:** NA

SECTION FOUR: HOW

A. **Assessment Plan** – For new programs, please provide an assessment plan. (If not needed, please state as such.) NA
B. **Teach-Out** – Provide a plan detailing how students who begin this program will be able to finish if the institution determines that the program is to be closed. (If not needed, please state as such). NA
C. **Catalog Copy**--In this section, please demonstrate in a two-step process how the department/school would like the change to be made. Keep in mind academic policies with regard to number of units for major, minors, certificates, etc. See Academic Proposal Resource Information at the end of this template.

- **Step 1:** In the applicable set of boxes below:
    - For revision, addition or elimination of majors, minors, concentrations or certificates, complete Sections C1-2, entering current and/or proposed catalog text as indicated in the section instructions.

- For revision, addition or elimination of courses only, please scroll down to and complete Section C-2 only, entering current and/or proposed catalog text as indicated in the section instructions

Section C-1—Program Changes: Proposals for elimination of a major, minor, concentration or certificate should complete the shaded (left) side of this section only, proposals for addition of any of these should complete the unshaded (right) side only, and proposals for revision of any of these should complete both sides of Section A.	
Current Program (or major, minor, concentration, certificate) Name and Introductory Text: NA	Proposed Revised or New Program (or major, minor, concentration, certificate) Name and Introductory Text: NA
Current Program Learning Outcome: NA	Proposed Revised or New Program Learning Outcomes (needed for new majors only): NA
Current Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA	Proposed Revised or New Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA
Current Total Lower Division Units: 15	**Proposed Total Lower Division Units:** 15
Current Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) PHY 475 - Senior Laboratory and Student Project (2)	Proposed Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) PROJECT: (Choose at least 3 units) HON 498 - Honors Project I (2) HON 499 - Honors Project II (1) OR MTH 495 - Service Learning in Mathematics (3) OR CSC 495 - Service Learning in Computer Science (3)
Current Total Upper Division Units: 13	**Proposed Total Upper Division Units:** 14
Current Elective Options (Highlight new or revised classes in red.): NA	Proposed Elective Options (Highlight new or revised classes in red.): NA
Current Total Required Elective Units: NA	**Proposed Total Required Elective Units:** NA
Current Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA	Proposed Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA
Current Total Program Units: NA	**Proposed Total Program Units:** NA
Current Notes (if any) at the bottom of	Proposed Notes (if any) at the bottom of program

program catalog copy: NA	catalog copy: NA
Section C-2—Course Changes: Proposals for course elimination should complete the shaded (left) side only, proposals for course addition should complete the unshaded (right) side only, and proposals for program or course revision should complete both sides of Section B. Proposals involving only course additions, eliminations or revisions should complete only this section.	
Current course code and description (including units, prerequisites and grade type): NA	Proposed new course code and description (including units, course learning outcomes, prerequisites and grade type): NA
Course 1: NA	Course 1: NA
Course 2: NA	Course 2: NA
Course 3: NA	Course 3: NA
Course 4: NA	Course 4: NA
Course 5: NA	Course 5: NA
Course 6: NA	Course 6: NA

- **Step 2:**
  - Arrange a meeting: Arrange a meeting with the APC chair to review the completed portion of the proposal and to receive assistance from the Records liaison in submission of current and/or draft proposed catalog copy called for.
  - Attach Catalog copy:
    - For proposed revisions to existing programs, majors, minors, courses, etc, after this page attach the following supplied by Records: 1) The current year catalog copy for that program, major, etc, and 2) the proposed revised catalog pages for your proposal, based on the information from Step One.
    - For entirely new programs, majors, minors, courses, etc, after this page attach the draft new catalog pages for your proposal supplied by Records based on the information in Step One.

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY AFTER THIS PAGE AS SEPARATE PAGES.

See attached file (pages 29-30).

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY BEFORE THIS PAGE AS SEPARATE PAGES.

SECTION FIVE: SUMMARY CHECKLIST

Review course and staffing impact with your academic unit's direct report (College Dean or Provost).

- **Total course additions:** 0
- **Total course deletions:** 0
- **Total unit additions:** 0-dept, 1-minor
- **Total unit deletions:** 0
- **Staff impact (increase or decrease):** None
- **Rotation of courses or deletions of sections to accommodate additions:** NA

I have reviewed this proposal and the items above and believe the proposal meets all university requirements and is ready for APC review.

Department or School Direct Report:

_____ **Date**_____

College Dean or Provost as applicable

ACADEMIC POLICIES COMMITTEE
LONG FORM PROPOSAL TEMPLATE

- Proposals should use this long form if they:
  - Need faculty and/or WASC approval;
  - Request elimination, addition or revision of multiple courses and/or courses impacting other departments or schools; or
  - Request elimination, addition or revision of a major, minor, concentration or credential program.
- All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee.
- **Please read the attached "APC Proposal Reference Information" before completing this form.**
- **For ease of APC Committee reading, please submit your responses in BLUE text.**

SUBMISSION DATE: 6-Nov-2015

SECTION ONE: WHO

1. **Academic Unit Name:** Mathematical, Information, and Computer Sciences
2. **Recorded Department/School Vote** (Please provide the number and percentage of department/school faculty who voted in approval for this proposal): 5 Yes, 0 No
3. **Impact on Other Department(s)/School(s)** (Are there other departments/schools impacted by this proposal? If so, how did the other department[s]/school[s] vote on this proposal?):

   This course is required or an elective in the following majors and minors:

   a. • Computational Science Minor - Biology/Environmental Science
   b. • Computational Science Minor - Biology/Genetics
   c. • Computational Science Minor - Chemistry
   d. • Computational Science Minor - Physics
   e. • Computational Science Minor - Psychology• Mathematics Minor
   f. • Mathematics, B.A.
   g. • Mathematics, B.S.

   Biology Vote: 11 Yes, 0 No

   Chemistry Vote: 7 Yes, 0 No

   Physics Vote: 1 Yes, 0 No

4. **Impact on Services:**
   a. Ryan Library:
      i. What new library acquisitions, if any, will be needed to support the proposed changes (if none, please state that): None
      ii. Person and Date of Contact: _____
   b. Instructional Technology:
      i. How many new online/hybrid courses does this proposal include: None
      ii. How many instructors will need online training or course development assistance over the first two sessions if this proposal is approved: None

iii. Person and Date of Contact:_____

SECTION TWO: WHAT

1. **Overall Proposal Description (**In one sentence, describe the nature of the proposed changes or the proposed new academic offering): NA
2. **Items** (Please describe each item of the proposal with a phrase or one-sentence abstract. Examples might be, “Item 1: To drop XXX course from XX program. Item 2: To add XX course as a requirement”, etc. Some proposals will only have 1 item. Add item lines as needed.):
    a. Item 1: To drop CSC496 from the Computer Science Program.
    b. Item 2: To drop CSC497 from the Computer Science Program.
    c. Item 3: To add CSC495 to the Computer Science Program.
    d. Item 4: To drop ISS496 from the Information Systems Program.
    e. Item 5: To drop ISS497 from the Information Systems Program.
    f. Item 6: To add ISS495 to the Information Systems Program.
    g. Item 7: To drop MTH496 from the Mathematics Program.
    h. Item 8: To drop MTH497 from the Mathematics Program.
    i. Item 9: To add MTH495 to the Mathematics Program.

SECTION THREE: WHY

1. **General** Rationale (Please provide a one-sentence rationale for this proposal.): Restructuring the current service learning two-semester sequence (2 units fall, 1 unit spring) to a single 3 unit course (fall) will better facilitate student engagement in the projects required within the course.
2. **Mission (**How do the proposed changes support the mission of the university?): We believe that we can better simulate the project experience in the working world by compressing the time that the students have to complete their customer-driven projects. This will better prepare them for working conditions.
3. **Internal Factors (**Please provide additional rationale by answering the following questions as applicable: How does the proposal(s) …address the PLNU strategic plan? …address factors arising from assessment data or program review findings? …accommodate the department or school’s learning outcomes for the major, minor, concentration, etc.? …increase departmental effectiveness/efficiency? …enhance enrollment or generate new revenue? What impact will it have on the size of the major, minor, etc.? Other internal rationale?): We found that when students had a full year to complete their projects they were procrastinating and often their end product suffered because of the procrastination. The four faculty members who have taught this class all agree the shorting it will be more effective.
4. **External Factors (** Please provide additional rationale by answering the following questions as applicable: To what extent have external factors motivated this proposal, for example what comparable colleges and universities are doing? …improvements suggested by alumni or outside reviewers? …stipulations imposed by outside accrediting agencies? …other external rationale?.)**:** NA

SECTION FOUR: HOW

A. **Assessment Plan** – For new programs, please provide an assessment plan. (If not needed, please state as such.) NA

B. **Teach-Out** – Provide a plan detailing how students who begin this program will be able to finish if the institution determines that the program is to be closed. (If not needed, please state as such). NA

C. **Catalog Copy**--In this section, please demonstrate in a two-step process how the department/school would like the change to be made. Keep in mind academic policies with regard to number of units for major, minors, certificates, etc. See Academic Proposal Resource Information at the end of this template.

- **Step 1:** In the applicable set of boxes below:
  - For revision, addition or elimination of majors, minors, concentrations or certificates, complete Sections C1-2, entering current and/or proposed catalog text as indicated in the section instructions.
  - For revision, addition or elimination of courses only, please scroll down to and complete Section C-2 only, entering current and/or proposed catalog text as indicated in the section instructions

Section C-1—Program Changes: Proposals for elimination of a major, minor, concentration or certificate should complete the shaded (left) side of this section only, proposals for addition of any of these should complete the unshaded (right) side only, and proposals for revision of any of these should complete both sides of Section A.	
Current Program (or major, minor, concentration, certificate) Name and Introductory Text: NA	Proposed Revised or New Program (or major, minor, concentration, certificate) Name and Introductory Text: NA
Current Program Learning Outcome: NA	Proposed Revised or New Program Learning Outcomes (needed for new majors only): NA
Current Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA	Proposed Revised or New Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA
Current Total Lower Division Units: NA	**Proposed Total Lower Division Units:** NA
Current Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA	Proposed Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA
Current Total Upper Division Units: NA	**Proposed Total Upper Division Units:** NA
Current Elective Options (Highlight new or revised classes in red.): NA	Proposed Elective Options (Highlight new or revised classes in red.): NA
Current Total Required Elective Units: NA	**Proposed Total Required Elective Units:** NA

Current Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA	Proposed Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA
Current Total Program Units: NA	**Proposed Total Program Units:** NA
Current Notes (if any) at the bottom of program catalog copy: NA	Proposed Notes (if any) at the bottom of program catalog copy: NA
Section C-2—Course Changes: Proposals for course elimination should complete the shaded (left) side only, proposals for course addition should complete the unshaded (right) side only, and proposals for program or course revision should complete both sides of Section B. Proposals involving only course additions, eliminations or revisions should complete only this section.	
Current course code and description (including units, prerequisites and grade type): NA	Proposed new course code and description (including units, course learning outcomes, prerequisites and grade type): NA
Course 1: CSC 496 - Service Learning in Computer Science I (2) Students working in teams design and implement a project using a broad spectrum of computer science knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing. Class Learning Outcomes: CSC496/ISS496/MTH496 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion	Course 1: CSC 495 - Service Learning in Computer Science (3) Students working in teams design and implement a project using a broad spectrum of computer science knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing. Class Learning Outcomes: CSC495/ISS495/MTH495 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.

based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	
Course 2: CSC 497 - Service Learning in Computer Science II (1) Continuation of the service learning project designed in CSC 496. Prerequisite(s): CSC 496. Class Learning Outcomes: CSC497/ISS497/MTH497 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	Course 2: Combined to make course above.
Course 3: ISS 496 - Service Learning in Computer Information Systems I (2) Students working in teams design and implement a project using a broad spectrum of information systems knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing.	Course 3: ISS 495 - Service Learning in Computer Information Systems (3) Students working in teams design and implement a project using a broad spectrum of information systems knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing.

Class Learning Outcomes: CSC496/ISS496/MTH496 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	Class Learning Outcomes: CSC495/ISS495/MTH495 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.
Course 4: ISS 497 - Service Learning in Computer Information Systems II (1) Continuation of the service learning project designed in ISS 496. Prerequisite(s): ISS 496. Class Learning Outcomes: CSC497/ISS497/MTH497 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information	Course 4: Combined to make course above.

for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	
Course 5: MTH 496 - Service Learning in Mathematics I (2) Students working in teams design and implement a project using a broad spectrum of mathematical knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing. Class Learning Outcomes: CSC496/ISS496/MTH496 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	Course 5: MTH 495 - Service Learning in Mathematics (3) Students working in teams design and implement a project using a broad spectrum of mathematical knowledge to meet the needs of a community organization or the university. Prerequisite(s): Consent of instructor and Junior standing. Class Learning Outcomes: CSC495/ISS495/MTH495 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.
Course 6: MTH 497 - Service Learning in Mathematics II (1)	Course 6: Combined to make course above.

Continuation of the service learning project designed in MTH 496. Prerequisite(s): MTH 496. Class Learning Outcomes: CSC497/ISS497/MTH497 1. Students will be able to apply their technical knowledge to solve problems. 2. Students will be able to speak about their work with precision, clarity and organization. 3. Students will be able to write about their work with precision, clarity and organization. 4. Students will collaborate effectively in teams. 5. Students will be able to identify, locate, evaluate, and effectively and responsibly use and cite information for the task at hand. 6. Students will be able to gather relevant information, examine information and form a conclusion based on that information. 7. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	

- **Step 2:**
  - Arrange a meeting: Arrange a meeting with the APC chair to review the completed portion of the proposal and to receive assistance from the Records liaison in submission of current and/or draft proposed catalog copy called for.
  - Attach Catalog copy:
    - For proposed revisions to existing programs, majors, minors, courses, etc, after this page attach the following supplied by Records: 1) The current year catalog copy for that program, major, etc, and 2) the proposed revised catalog pages for your proposal, based on the information from Step One.
    - For entirely new programs, majors, minors, courses, etc, after this page attach the draft new catalog pages for your proposal supplied by Records based on the information in Step One.

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY AFTER THIS PAGE AS SEPARATE PAGES.

30

See attached file (pages 59-60)

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY BEFORE THIS PAGE AS SEPARATE PAGES.

SECTION FIVE: SUMMARY CHECKLIST

Review course and staffing impact with your academic unit's direct report (College Dean or Provost).

- **Total course additions: 3**
- **Total course deletions: 6**
- **Total unit additions: 9**
- **Total unit deletions: 9**
- **Staff impact (increase or decrease): 0**
- **Rotation of courses or deletions of sections to accommodate additions: NA**

I have reviewed this proposal and the items above and believe the proposal meets all university requirements and is ready for APC review.

Department or School Direct Report:

_____ **Date**_____

College Dean or Provost as applicable

ACADEMIC POLICIES COMMITTEE
LONG FORM PROPOSAL TEMPLATE

- Proposals should use this long form if they:
  - Need faculty and/or WASC approval;
  - Request elimination, addition or revision of multiple courses and/or courses impacting other departments or schools; or
  - Request elimination, addition or revision of a major, minor, concentration or credential program.
- All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee.
- **Please read the attached "APC Proposal Reference Information" before completing this form.**
- **For ease of APC Committee reading, please submit your responses in BLUE text.**

SUBMISSION DATE: 6-Nov-2015

SECTION ONE: WHO

1. **Academic Unit Name:** Mathematical, Information, and Computer Sciences
2. **Recorded Department/School Vote** (Please provide the number and percentage of department/school faculty who voted in approval for this proposal): 5 Yes, 0 No
3. **Impact on Other Department(s)/School(s)** (Are there other departments/schools impacted by this proposal? If so, how did the other department[s]/school[s] vote on this proposal?): This affects the computational science minors, the Computer Science majors, and the Mathematics majors and minor, by raising the number of required units in each by up to one unit. See attached catalog copy (with track changes). The following majors and minors are impacted:
   a. • Computational Science Minor - Biology/Environmental Science
   b. • Computational Science Minor - Biology/Genetics
   c. • Computational Science Minor - Chemistry
   d. • Computational Science Minor - Physics
   e. • Computational Science Minor - Psychology
   f. • Computer Science: Software Engineering, B.A.
   g. • Computer Science: Software Engineering, B.S.
   h. • Computer Science: Technical Applications, B.S.
   i. • Mathematics Minor
   j. • Mathematics, B.A.
   k. • Mathematics, B.S.

   Biology Vote: 11 Yes, 0 No

   Chemistry Vote: 7 Yes, 0 No

   Physics Vote: 1 Yes, 0 No

4. **Impact on Services:**
   a. Ryan Library:
      i. What new library acquisitions, if any, will be needed to support the proposed changes (if none, please state that): None
      ii. Person and Date of Contact: _____

b. Instructional Technology:
   i. How many new online/hybrid courses does this proposal include: None
   ii. How many instructors will need online training or course development assistance over the first two sessions if this proposal is approved: None
   iii. Person and Date of Contact: _____

SECTION TWO: WHAT

1. **Overall Proposal Description (**In one sentence, describe the nature of the proposed changes or the proposed new academic offering): NA
2. **Items** (Please describe each item of the proposal with a phrase or one-sentence abstract. Examples might be, "Item 1: To drop XXX course from XX program. Item 2: To add XX course as a requirement", etc. Some proposals will only have 1 item. Add item lines as needed.):
   a. Item 1: To drop MTH 382 from the BA and BS in mathematics.
   b. Item 2: To drop MTH 392 from the BA and BS in mathematics.
   c. Item 3: To add MTH 383 to the BA and BS in mathematics.

SECTION THREE: WHY

1. **General** Rationale (Please provide a one-sentence rationale for this proposal.): MTH 382 (2) has been taught once yearly and MTH 392 has been taught once every other year for a total of six (6) units every two years. MTH 383 (3) will be taught every year for a total of six (6) units every two years. Previously, the topics from MTH 382 and MTH 392 had been separated and the statistics portion requires the probability portion in an interlaced manner throughout the course. As proposed, the material is easier to understand if it is taught in one course (MTH 383).
2. **Mission (**How do the proposed changes support the mission of the university?): This change in curriculum will enable students to learn the material in a more coherent manner and will better equip them to take the first test required for qualification as an actuary.
3. **Internal Factors (**Please provide additional rationale by answering the following questions as applicable: How does the proposal(s) …address the PLNU strategic plan? …address factors arising from assessment data or program review findings? …accommodate the department or school's learning outcomes for the major, minor, concentration, etc.? …increase departmental effectiveness/efficiency? …enhance enrollment or generate new revenue? What impact will it have on the size of the major, minor, etc.? Other internal rationale?): Several years ago the statistics and probability courses were separated. After evaluation of students' understanding of the material and the coherence of both courses, the department decided to reunite the two courses.
4. **External Factors (** Please provide additional rationale by answering the following questions as applicable: To what extent have external factors motivated this proposal, for example what comparable colleges and universities are doing? …improvements suggested by alumni or outside reviewers? …stipulations imposed by outside accrediting agencies? …other external rationale?.)**:** We have a number of students who are entering the actuarial field. The first exam that they must take is a combination of

probability and statistics. We believe that teaching the course in this manner will more adequately prepare them to take the exam.

SECTION FOUR: HOW

A. **Assessment Plan** – For new programs, please provide an assessment plan. (If not needed, please state as such.) NA

B. **Teach-Out** – Provide a plan detailing how students who begin this program will be able to finish if the institution determines that the program is to be closed. (If not needed, please state as such). NA

C. **Catalog Copy**--In this section, please demonstrate in a two-step process how the department/school would like the change to be made. Keep in mind academic policies with regard to number of units for major, minors, certificates, etc. See Academic Proposal Resource Information at the end of this template.

- **Step 1:** In the applicable set of boxes below:
  - For revision, addition or elimination of majors, minors, concentrations or certificates, complete Sections C1-2, entering current and/or proposed catalog text as indicated in the section instructions.
  - For revision, addition or elimination of courses only, please scroll down to and complete Section C-2 only, entering current and/or proposed catalog text as indicated in the section instructions

Section C-1—Program Changes: Proposals for elimination of a major, minor, concentration or certificate should complete the shaded (left) side of this section only, proposals for addition of any of these should complete the unshaded (right) side only, and proposals for revision of any of these should complete both sides of Section A.	
Current Program (or major, minor, concentration, certificate) Name and Introductory Text: NA	Proposed Revised or New Program (or major, minor, concentration, certificate) Name and Introductory NA: NA
Current Program Learning Outcome: NA	Proposed Revised or New Program Learning Outcomes (needed for new majors only): NA
Current Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA	Proposed Revised or New Lower Division Requirements and Unit Numbers for Majors. All requirements for minors, concentrations or certificates: NA
Current Total Lower Division Units: NA	**Proposed Total Lower Division Units:** NA
Current Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA	Proposed Upper Division Requirements and Unit Numbers for Majors. (Highlight new or revised classes in red.) NA
Current Total Upper Division Units: NA	**Proposed Total Upper Division Units:** NA
Current Elective Options (Highlight new or revised classes in red.): NA	Proposed Elective Options (Highlight new or revised classes in red.): NA

Current Total Required Elective Units: NA	**Proposed Total Required Elective Units:** NA
Current Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA	Proposed Names and Course Titles of Concentration #1 (if any—use additional boxes for each concentration.): NA
Current Total Program Units: NA	**Proposed Total Program Units:** NA
Current Notes (if any) at the bottom of program catalog copy: NA	Proposed Notes (if any) at the bottom of program catalog copy: NA
Section C-2—Course Changes: Proposals for course elimination should complete the shaded (left) side only, proposals for course addition should complete the unshaded (right) side only, and proposals for program or course revision should complete both sides of Section B. Proposals involving only course additions, eliminations or revisions should complete only this section.	
Current course code and description (including units, prerequisites and grade type):	Proposed new course code and description (including units, course learning outcomes, prerequisites and grade type):
Course 1: **MTH 382 - Mathematical Statistics (2)** A first course in descriptive and inferential statistics for students with sophisticated mathematics exposure. Topics include applied work in experimental design, sampling distributions, point estimation and hypothesis listing supported by the use of statistical software. In addition, the theoretical basis for these techniques is explored. Offered on a Quad basis. Prerequisite(s): MTH 274. Letter grade CLO's: 1. Students will be able to apply their mathematical knowledge to solve problems. 2. Students will be able to use technology to solve problems. 3. Students will collaborate effectively in teams.	Course 1: **MTH 383- Mathematical Probability and Statistics (3)** A first course in probability and statistics for students with sophisticated mathematics exposure. Topics include axioms of probability, random variables, discrete and continuous distributions, mathematical expectation, limit theorems, least square estimates of parameter, linear regression, experimental design, hypothesis testing, and confidence intervals, testing of models, data analysis and appropriateness of models. Topics are supported by the use of statistical software. Offered yearly. Prerequisite(s): MTH 274. Letter grade CLO's: 1. Students will be able to apply their mathematical knowledge to solve problems. 2. Students will be able to use technology to solve problems. 3. Students will collaborate effectively in teams.

4. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	4. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.
Course 2: **MTH 392 - Mathematical Probability (2)** A first course in probability for students with sophisticated mathematics exposure. Topics include axioms of probability, random variables, discrete and continuous distributions, mathematical expectation and limit theorems. Offered 2015-2016. Offered on a Quad basis. Corequisite(s): MTH 382. Letter grade CLO's: 1. Students will be able to apply their mathematical knowledge to solve problems. 2. Students will be able to use technology to solve problems. 3. Students will collaborate effectively in teams. 4. Students will be able to understand and create arguments supported by quantitative evidence, and they can clearly communicate those arguments in a variety of formats.	Course 2: See above for the combined course.
Course 3: NA	Course 3: NA

- **Step 2:**
  - Arrange a meeting: Arrange a meeting with the APC chair to review the completed portion of the proposal and to receive assistance from the Records liaison in submission of current and/or draft proposed catalog copy called for.
  - Attach Catalog copy:

- For proposed revisions to existing programs, majors, minors, courses, etc, after this page attach the following supplied by Records: 1) The current year catalog copy for that program, major, etc, and 2) the proposed revised catalog pages for your proposal, based on the information from Step One.
- For entirely new programs, majors, minors, courses, etc, after this page attach the draft new catalog pages for your proposal supplied by Records based on the information in Step One.

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY AFTER THIS PAGE AS SEPARATE PAGES.

See attached file (page 58 and throughout).

STEP TWO: ATTACH CURRENT AND/OR PROPOSED CATALOG COPY BEFORE THIS PAGE AS SEPARATE PAGES.

SECTION FIVE: SUMMARY CHECKLIST

Review course and staffing impact with your academic unit's direct report (College Dean or Provost).

- **Total course additions:** 1
- **Total course deletions:** 2
- **Total unit additions:** 6
- **Total unit deletions:** 6
- **Staff impact (increase or decrease):** None
- **Rotation of courses or deletions of sections to accommodate additions:** The MTH382 (2) units have been taught once yearly and the MTH392 (2) units have been taught once every other year for a total of six (6) units every two years. MTH383 (3) will be taught every year for a total of six (6) units every two years.

I have reviewed this proposal and the items above and believe the proposal meets all university requirements and is ready for APC review.

Department or School Direct Report:

_____ **Date**_____

College Dean or Provost as applicable

Academic Policies Committee

Short Form Proposal Template

Schools/departments should use this short form to submit proposals:

- Needing only APC approval (revision of course descriptions including title, number or prerequisites, alternate year listing in the Catalog and the cross listing of courses); or
- Eliminating (or adding?) 1-3 courses which don't impact other programs*; or
- Eliminating a minor, concentration, credential program or certificate which doesn't impact other programs.* *confirmed by direct administrative report (college dean or provost).

All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee. **For ease of APC Committee reading, please submit your responses in BLUE text.**

I. WHO - Academic Unit Name: **Mathematical, Information, and Computer Sciences**

II. WHAT – Proposal Summary: **Changes of description to more precisely fit the current content of the course. A name change occurs as well.**

III. WHY – Proposal Rationale (might include):
Changes of description to more precisely fit the current content of the course. There is no impact on staffing.

IV. HOW – Curricular Changes:

A. Curriculum - Short Form proposals should include current and proposed course descriptions including title, number, units, and if needed prerequisites, alternate year listing in the catalog and cross-listed courses. Language must be exactly as the Department/ School wants it to appear in the Catalog. Proposing school/department should work with APC chair to generate proposed Catalog text and attach to this form at the time of submission.

Change the title of

CSC 154 - Object-Oriented Programming (4)
to
CSC 154 - Objects and Elementary Data Structures (4)

Update the catalog copy to read:

As a continuation of CSC 143, this course deals with more advanced computing constructs and ideas, reinforced in weekly labs. Topics include object-oriented design, inheritance, polymorphism, exception handling, and recursion, along with more intentional development and debugging strategies. Linked lists are introduced as a viable option for implementing basic ADTs. Students gain experience in the design of graphical user interfaces, event driven programming, and larger programming projects. Lecture three hours and laboratory two hours each week.

Prerequisite(s): CSC 143 with a grade of C- or higher.

B. Summary Information:

Total course/unit additions: **0**	Net financial impact: **None**
Total course/unit deletions: **0**	Library resourcing impact: **None**
Staffing unit increase/decrease: **0**	

I have reviewed this proposal and the items above and believe the proposal meets all university requirements, does not impact other departments or programs, and is ready for APC review.

Department or School Direct Report:

_____ Date_____

College Dean or Provost as applicable

Note: Submit completed short form proposal to the APC chair not later than one month prior to the APC meeting at which you hope it can be placed on the agenda.

Academic Policies Committee

Short Form Proposal Template

Schools/departments should use this short form to submit proposals:

- Needing only APC approval (revision of course descriptions including title, number or prerequisites, alternate year listing in the Catalog and the cross listing of courses); or
- Eliminating (or adding?) 1-3 courses which don't impact other programs*; or
- Eliminating a minor, concentration, credential program or certificate which doesn't impact other programs.* *confirmed by direct administrative report (college dean or provost).

All submitted proposals need to adhere to the following template in order to facilitate the work of the Academic Policies Committee. **For ease of APC Committee reading, please submit your responses in BLUE text.**

I. WHO - Academic Unit Name: Mathematical, Information, and Computer Sciences

II. **WHAT – Proposal Summary:** Add the existing course ECO 460 - Applied Econometrics to the list of electives for Mathematics (BA) and Mathematics (BS) majors. Since the Mathematics majors have already had MTH223 - Linear Algebra, the ECO305 prerequisite to ECO460 will be waived.

Prerequisite(s): ECO 101, ECO 102, MTH 203, and ECO 305.

III. WHY – Proposal Rationale:

We have approval from the Society of Actuaries for students to be able to complete (prior to graduation) four of the ten requirements to become a Fellow of the Society of Actuaries. The specific details include taking five classes in the School of Business and one MICS class and passing their first Society of Actuaries test. Adding two or three students a year to this course will have no significant impact since it is nowhere near its cap of 25. The last four times it was offered were the spring of 2012, 13, 14, and 15 with enrollments of 6, 9, 4, and 5 respectively.

IV. HOW – Curricular Changes:

A. Curriculum - Short Form proposals should include current and proposed course descriptions including title, number, units, and if needed prerequisites, alternate year listing in the catalog and cross-listed courses. Language must be exactly as the Department/ School wants it to appear in the Catalog. Proposing school/department should work with APC chair to generate proposed Catalog text and attach to this form at the time of submission.
See attached file (pages 50, 53).

B. Summary Information:

Total course/unit additions: **0**	Net financial impact: **0**
Total course/unit deletions: **0**	Library resourcing impact: **0**
Staffing unit increase/decrease: **0**	

I have reviewed this proposal and the items above and believe the proposal meets all university requirements, does not impact other departments or programs, and is ready for APC review.

Department or School Direct Report:

_____ Date_____

College Dean or Provost as applicable

Note: Submit completed short form proposal to the APC chair not later than one month prior to the APC meeting at which you hope it can be placed on the agenda.