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| **School or Division** | School of Pure and Applied Sciences |
| **Program or Certificate** | All degrees |
| **Proposed by (faculty only)** | JoAnn Lewin |
| **Presenter (faculty only)** | JoAnn Lewin |
| Note that the presenter (faculty) listed above must be present at the Curriculum Committee meeting or the proposal will be returned to the School or Division and be resubmitted for a later date. | |
| **Submission date** | 1/9/2015 |
| **Current course prefix, number, and title** | MAS 3105: Linear Algebra |

**Section I, Proposed Changes**

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| **Change to course prefix and number**  Lecture/lab course combined must include “C” / lab course must include “L” | N/A |
| **Change to course title** | N/A |
| **Change of School, Division, or Department** | N/A |
| **Change to course prerequisite(s) and minimum grade(s) (must include minimum grade if higher than a “D”)** | From: MAC 2313  To: MAC 2312 with minimum grade of “C” |
| **Will students be taking any of the prerequisite listed for this course in different parts of the same term (ex. Term A and Term B)** | No |
| **Change to course corequisites** | N/A |
| **Is any corequisite for this course listed as a corequisite on its paired course?**  (Ex. CHM 2032 is a corequisite for CHM 2032L, and CHM 2032L is a corequisite for CHM 2032) | Choose an item.  N/A |
| **Change to course credits or clock hours** | N/A |
| **Change to contact hours (faculty load)** | N/A |
| **Change to grade mode** | Choose an item. N/A |
| **Change to credit type** | Choose an item. N/A |
| **Change to course description** (provide below) | |
| From: This course is an introduction to the basic concepts and theorems of linear algebra. It is a core requirement for the Secondary Education in Mathematics Degree. It is intended to provide the future mathematics teacher with in-depth background knowledge.  To: This course is an introduction to the basic concepts and theorems of linear algebra. It is intended to provide in depth background knowledge for students who are majoring in secondary mathematics education, science, engineering and mathematics. | |

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| **Change to general topic outline** (type in entire new outline below) |
| * Systems of linear equations * Matrix algebra * Determinants * Vector spaces * Linear transformations * Basis, linear independence, orthogonality * Eigenvalues and eigenvectors * Inner product spaces * Diagonalization of matrices * Quadratic forms * Applications |

**Change to Learning Outcomes:** For information purposes only. Type in all learning outcomes, assessments, and general education competencies as they should be displayed in the syllabus. More rows can be added if necessary.

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| **Learning Outcomes** | **Assessments** | **General Education Competencies** |
| Use the structure of matrices and determinants to set up and solve application problems. | HOMEWORK  and/or  QUIZZES  and/or  TESTS  and/or  GROUP ASSIGNMENTS  and/or  PROJECTS | CT |
| Perform mathematical operations using matrices and determinants with and without calculators. | TIM |
| Form canonical factorizations of matrices. |  |
| Complete Gauss-Jordan elimination to produce solutions to systems of equations. |  |
| Identify and analyze vector spaces and their subspaces. |  |
| Solve problems involving linear transformations and the matrix representation of a linear transformation. |  |
| Solve problems involving concepts of linear independence, basis, orthogonality. |  |
| Compute and analyze eigenvalues and eigenvectors of matrices. |  |
| Complete diagonalization of matrices. |  |
| Analyze inner product spaces; apply the Gram-Schmidt algorithm. |  |
| Apply properties of similar matrices appropriately. |  |
| Compute and classify quadratic forms; find the matrix of the quadratic form. |  |
| Use linear algebra to solve application problems. |  |

**Section II (must complete each item below)**

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| **Should any major restrictions be listed on this course? If so, select "change" and list the appropriate major restriction codes or select no change.** | No change |
| **Change course to an “International or Diversity Focus” course?** | No, not International or Diversity Focus |
| **Change course to a General Education course?** | No |
| **Change course from General Education to non-General Education?** | No |
| **Change course to a Writing Intensive course?** | No |
| **Change course from Writing Intensive to non-Writing intensive?** | No |
| **Change course to repeatable?**  (A repeatable course may be taken more than one time for additional credits. For example, MUT 2641, a 3 credit hour course can be repeated 1 time and a student can earn a maximum of 6 credits).  \*Not the same as Multiple Attempts or Grade Forgiveness | No |

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| **Impact of Change of Course Proposal** | |
| **Will this change of course proposal impact other courses, programs, departments, or budgets?** | Yes |
| **If the answer to the question above is “yes”, list the impact on other courses, programs, or budgets?** | Since students will no longer have to complete MAC 2313 before taking MAS 3105, students will have great flexibility in scheduling this course and any other courses for which MAS 3105 is a pre-requisite. |
| **Have you discussed this proposal with anyone (from other departments, programs, or institutions) regarding the impact? Were any agreements made? Provide detail information below.** | |
| Changes are being made at the request of, and in cooperation with the School of Education. | |

**Section III, Justification for proposal**

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| **Provide justification (below) for each change on this proposed curriculum action** |
| The change in the catalog description enlarges the population for which this course would be of interest.  The change in prerequisite aligns the FSW course with the SCNS stated prerequisite and the prerequisite at many other Florida state colleges and universities.  Changes in the topic outline give a clearer description of course content and provide better alignment with the SCNS topic outline.  We have just begun to offer this course at FSW. (Previously our students took this course at FGCU for the secondary mathematics education degree.) Now that we have taught the course here, we have been able to revise the stated learning outcomes to better represent expectations of the course. |

**Section IV, Important Dates and Endorsements Required**

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| **List all faculty endorsements below. (Note that proposals will be returned to the School or Division if faculty endorsements are not provided).** |
| Dr. Ivana Ilic, Dr. Douglas Magomo, Dr. Cheban Acharya, Dr. Juan Zaragoza, Dr. Ron Smith  Discussed and approved by all faculty in attendance at the math department meeting held on 1/6/15. |

**nOTE:** Changes for the Fall 2015 term must be submitted to the Dropbox by the January 9, 2015 deadline and approved no later than the February 28, 2015 Curriculum Committee meeting. Changes during mid-school year are NOT permitted. Extreme circumstances will require approval from the appropriate Dean or Assistant Vice President as well as the Provost and Vice President of Academic Affairs to begin in either the Spring 2015 or Summer 2015 term.

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| **Term in which approved action will take place** | Fall 2015 |

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| **Required Endorsements** | **Type in Name** | **Select Date** |
| **Department Chair or Program Coordinator** | JoAnn Lewin | 1/9/2015 |
| **Academic Dean or Assistant Vice President** | Theo Koupelis | 1/9/2015 |
| **Dean’s Council Representative** | Dr. Mary Myers | 2/3/2015 |

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| **Select Curriculum Committee Meeting Date** | February 27, 2015 |

Completed curriculum proposals must be uploaded to Dropbox by the deadline. Please refer to the *Curriculum Committee Critical Dates for Submission of Proposals* document available in the document manager in the FSW Portal:

* Document Manager
* VP Academic Affairs
* Curriculum Process Documents

**Important Note to Faculty, Department Chairs or Program Coordinators, and Deans or an Assistant Vice President:**

Incomplete proposals or proposals requiring corrections will be returned to the School or Division. If a proposal is incomplete or requires multiple corrections, the proposal will need to be completed or corrected and **resubmitted to the Dropbox for the next Curriculum Committee meeting** (no later than January 9, 2015 to be effective for the Fall 2015 term). All Curriculum proposals require approval of the Provost and Vice President of Academic Affairs. Final approval or denial of a proposal is reflected on the completed and signed Summary Report.