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| **MASTER COURSE OUTLINE** |  | **DATE:** April 2016 |
| **COURSE TITLE**: Introduction to Unmanned Aircraft Systems (UAS) |
| Dept.: UMS | Course Num: 101 | (Formerly: N/A ) |
| CIP Code: 15.0405 | Intent Code: 21 | Program Code: 640 |
| **CREDITS**: 5 |  |  |
| Total Contact Hrs Per Qtr.: 66 | Lecture Hrs:44 | Lab Hrs: 22 |
| Distribution Desig: Gen Elective |  | Other Hrs: |

**Prepared By:** Patrick Ford

**COURSE DESCRIPTION** (as it will appear in the catalog)

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| Students will be introduced to unmanned aircraft systems (UAS), including UAS types, system operations, current legal and ethical issues, the flight authorization process, safety of flight, sense and avoid technologies, sensors and payloads, human factors, and UAS simulator operation.  |

**PREREQUISITES**: None

**TEXTBOOK GUIDELINES**: Introductory UAS text determined by the unmanned systems faculty (Example: **Introduction to Unmanned Aircraft Systems, 2nd Edition (2016), CRC Press,** Marshall, et al)

**STUDENT LEARNING OUTCOMES**: *Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.*

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| 1. Describe the major types/groups/categories of UAS
2. Recall key aspects of the UAS flight approval/authorization process
3. Recognize legal/ethical considerations for specific types of UAS operations
4. List the primary types of sensors used for data collection
5. Compare and contrast types of detect, sense and avoid systems
6. Differentiate the various levels of UAS automation and autonomy
7. Demonstrate proper UAS safety procedures
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**GENERAL EDUCATION/RELATED INSTRUCTION OUTCOMES**

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**COURSE CONTENT OUTLINE**

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| 1. UAS History
2. UAS Elements
3. U.S. Aviation Regulatory System
4. Legal and Ethical Considerations
5. Flight Approval/Authorization Process
6. UAS Operations
7. UAS Data Collection and Analysis
8. UAS Automation and Autonomy
9. Safety of Flight
10. Detect, Sense and Avoid Systems
11. Sensors and Payloads
12. Human Factors
13. The Future of Unmanned Systems
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**DEPARTMENTAL GUIDELINES**

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| The syllabus must contain evaluation/grading guidelines, class environment/expectations/rules, course learning outcomes, and a disability services statement. A schedule must be provided to students that contains content covered (text chapters, topics, etc.), tentative test dates (to include final date/time).  |

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**DIVISION CHAIR APPROVAL** **DATE**