**CIS-6XXX: Course Title**

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| **ELEMENT** | **CONTENT** |
| DEPT OR PROGRAM | Computer Information Sciences |
| AUTHOR (S) | Carl Brandon & Peter Chapin |
| COURSE NUMBER | CIS-6XXX |
| COURSE TITLE | Spacecraft Software |
| SHORT TITLE |  |
| COURSE LEVEL | Graduate |
| DATE CREATED | September 2, 2015 |
| CHECKED/CHANGED |  |
| PREREQUISITES | CIS-3030 Programming Languages |
| COREQUISITES | CIS-6XXX High Integrity Programming |
| RESTRICTIONS ON ENROLLMENT |  |
| SPECIAL FEES |  |
| CREDITS | 3 |
| HOURS | Lecture 3 |
| SEMESTER |  |
| COURSE DESCRIPTION | Prepares students to write software for the specialized spacecraft environment. |
| REQUIRED TEXTS |  |
| OPTIONAL TEXTS | Space Mission Engineering – Wertz, Everett & Puschell |
| COURSE OUTCOMES | Students completing this course will be able to:   * Understand the various spacecraft systems * Design an overall spacecraft program in an appropriate language * Implement the software on bare board or RTOS such as VxWorks |
| COURSE CONTENT | The following material will be covered in lecture:   * Spacecraft systems * Software design tools * Static analysis * High integrity requirements * Regulations: FCC, NOAA, ITAR * Special characteristics of the space environment * Radio interface * Attitude determination and control (ADAC) * Space file transfer protocols * Radiation hardening issues * Launch vehicle saftely * Navigation * Scientific instruments |
| LABORATORY OUTCOMES |  |
| LABORATORY CONTENT |  |
| GRADED OR P/NP | Graded |
| SUGGESTED EVALUATION | Hour exams and small software projects |
| DELIVERY METHOD | Lecture |
| ROOM REQUIREMENTS | Computer lab |
| AUTHOR’S NOTES |  |