Course Approval Form

Action Requested:  
- Create new course 
- Delete existing course  
- Modify existing course (check all that apply)  
  - Title  
  - Prereq/coreq  
  - Schedule Type  
  - Other:  

Course Level:  
- Undergraduate  
- Graduate  

College/School:  
Submitted by:  
Subject Code: CSI  
Number: 758  
Effective Term: X Fail  
(Do not list multiple codes or numbers. Each course proposal must have a separate form.)

Title: Current Visualization and Modeling of Complex Systems  
Banner (30 characters max including spaces)  
New  

Credits:  
- X Fixed  
- Variable  
Repeat Status:  
- Not Repeatable (NR)  
- Repeatable within degree (RD)  
- Repeatable within term (RT)  

Grade Mode:  
- X Regular (A, B, C, etc.)  
- Satisfactory/No Credit  
- Special (A, B, C, etc. +IP)  

Schedule Type Code(s):  
- Lecture (LEC)  
- Lab (LAB)  
- Recitation (RCT)  
- Internship (INT)  
- Independent Study (IND)  
- Seminar (SEM)  
- Studio (STU)  

Prerequisite(s):  
CSI 500 or instructors approval  
Corequisite(s):  

Instructional Mode:  
- X 100% face-to-face  
- Hybrid: ≤ 50% electronically delivered  
- 100% electronically delivered  

Special Instructions: (list restrictions for major, college, or degree, hard-coding, etc.)  

Are there equivalent course(s)?  
- Yes  
- No  
If yes, please list  

Catalog Copy for NEW Courses Only (Consult University Catalog for models)  
Description (No more than 60 words, use verb phrases and present tense)  
Notes (List additional information for the course)  

Indicate number of contact hours:  
When Offered: (check all that apply)  
- X Spring  
- Hours of Lecture or Seminar per week:  
- Hours of Lab or Studio:  

Approval Signatures  

Department Approval  
Date  
College/School Approval  
Date  

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.
Previous Description of CSI 758

Covers elements of modeling and analysis of Earth and space sciences data and systems. Concentrates on sample projects and student-initiated projects to use visualization and graphical analysis techniques as they apply to modeling of complex data sets and systems. Uses several different analysis and visualization packages. Spacecraft data sets from the Naval Research Laboratory (NRL) Backgrounds Data Center and other NRL data sets are available for course projects; perusal of web data sets also possible. Modeling and analysis accompanied by appropriate readings from current literature.

Proposed Description

Covers elements of modeling and analysis for scientific applications. Concentrates on sample projects and student-initiated projects to use visualization, image and graphical analysis as they apply to modeling of complex data sets and systems. Reviews methods of creating and generating analysis and visualization packages. Data sets from multiple sources will be used. Modeling and analysis accompanied by appropriate readings from current literature.

Justification
Methods of modeling and analysis are rapidly changing in this era of “big data.” It is necessary, therefore, to keep pace with this evolving field and offer students the ability to prosper in these areas. The original course description was developed with a particular scientific field in mind. As the Computational and Data Sciences department evolves it is necessary to modify some courses to be more amenable to the talent structure that employers seek. Towards this goal the proposed change relaxes the restrictive nature of the previous course to include modeling and analysis of various types of data rather than a restriction to a single type.