

## Semantic eScience (SeS) 2011

<http://tw.rpi.edu/web/Courses/SemanticeScience/2011>

**Assignment 2:** (10 points written and 10 points presentation of overall credit score)

Due: TUESDAY October 11, 2010 (by 11:59 am EST, day of the class)

Submission method: email to [d1m@cs.rpi.edu](mailto:d1m@cs.rpi.edu), [chenw8@rpi.edu](mailto:chenw8@rpi.edu) and class presentation on TUESDAY Oct. 11. *Please use the following file naming for electronic submission:*

CSCI2010-6962\_Assignment2\_YOURFIRSTNAME\_YOURLASTNAME.xxx

Late submission policy: first time with valid reason – no penalty, otherwise 20% of score deducted each late day

Note: Your report for this assignment should be the result of your own individual work. Take care to avoid plagiarism (“copying”), including all web resources, texts, and class presentations. You may discuss the problems with other students, but do not take written notes during these discussions, and do not share your written solutions. Please use the use case template available from <http://tw.rpi.edu/web/Courses/SemanticeScience/2011> under week 3 or directly from [http://tw.rpi.edu/media/latest/UseCase-Template\\_SeS.doc](http://tw.rpi.edu/media/latest/UseCase-Template_SeS.doc)

when completing this assignment. Also note the two partially completed examples referenced from the Syllabus page under week 3.

General assignment: Use-case Driven Knowledge Encoding Part I: develop a use case, perform the analysis, ontology modeling and knowledge encoding using the methods and tools you have learned to date. You may leverage an existing knowledge base and/or ontologies (see details below). You will also ask and answer questions about the representation. The weighting score for each question is included below. Please use the question numbering (1-5) below for your written assignment.

1. Develop the use case (2%)

- a. Choose an application area, preferably in science – the content and context need not be an advanced science area but should have some science in it.
- b. Scope the use case to be as specific as possible, at least for your first iteration
- c. Document the resources you used in developing the use case, including written and presentation materials and conversations with others.

2. Document the use case using the template (see above) – this should include data and services even though the use case will not be implemented (3%)

3. Perform the analysis, ontology modeling and knowledge encoding: provide a paragraph summary of what you did, and provide artifacts demonstrating the knowledge encoding (diagrams, owl, cmaps, etc.). For this assignment, you will not need to implement a solution to your use case but the knowledge encoding should be well formed. (3%)

4. Describe how your knowledge representation meets the goal of the use case and highlight the value of your use of semantic technologies. One concrete way to do this is to ask and answer two questions from your ontology (label

them a. and b.) to your ontology. Provide a written description of the questions (a. and b.) and the result, including any reasoning that is performed. (2%)

5. Oral presentation of the use case and examples of your knowledge encoding (10%). Plan to present for no more than 8 minutes, allowing a two minutes for questions so that your total time speaking is up to 10 minutes including the question period.

Your grade will be assessed on demonstration of knowledge of your work, the use case and the ability to answer questions. Please submit your presentation (ppt, pdf or similar using the same naming scheme as for questions 1-4) after the class.