Software Requirements Management CIS 8030 Syllabus Spring 2011

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As with any document, be aware that this may contain clerical errors. Please tell me if you spot one.

The instructor reserves the right to modify the syllabus as necessary to improve student learning and provide appropriate evaluation. Students will be notified of any such modification in-class and via the web site.

1 Catalog Description

The current university catalog description of this course can be obtained in the University's Catalog:

http://www.gsu.edu/es/catalogs_courses.html

A recent university catalog description follows:

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on using a variety of modeling tools and techniques to define a system specification. Students are also exposed to emerging topics such as components, patterns and reuse that promise major improvements in software development productivity.

1.1 Prerequisites

Software Requirements Management. Formerly CIS 8130.

Required: CIS 3210 or CIS 3215 or CIS 3260 or CIS 3270 CSP: 1, 2, 3, 4, 5, 6, 7, 8.

1.2 Sections

Section	CRN	Room	Days	Time
005	13338	Classroom South 300	Wednesdays	7:15 – 9:45 P.M.

2 Instructor

Dr. William N. Robinson; http://wrobinson.cis.gsu.edu; wrobinson@gsu.edu

Office (404) 413-7374; Dept: (404) 413-7360; FAX: (404) 413-7394

Office hours: TBA & by Appointment. Ask me about **Instant Messaging** *(MS Messenger Live).*

2.1 Contact the instructor… Please!

During your research, design, and development, it is **highly recommended** that you contact the instructor, in-person or via email. I am available to help you focus your projects, gain access to resources, and answer your questions. Please try to see me, phone me, or e-mail me at least once during the term to discuss your project. Your class members are also a good source of help.

2.2 Course web sites

Web sites for our course:

1. http://grad.robinson.gsu.edu –our main class site, with documents, wikis, etc.

3 Overview

This course provides an introduction to the fundamentals of software requirements management. Topics covered include requirements gathering, system modeling and software specifications. The major emphasis is on UML modeling tools and techniques to define a system specification. Students are also exposed to emerging topics that promise major improvements in software development productivity.

Information systems development is a process in which technical, organizational and human aspects of a system are analyzed and changed with the goal of creating an improved system. In spite of the advanced technology that surrounds computer-based information systems, the process of systems analysis and design is still largely an art. There is high dependence on the skills of individual analysts and designers even though there are established principles, methods and tools. This course will give students an understanding of the most common tools, techniques, and theories currently used in requirements management and analysis.

3.1 Intended Audience

Anyone with a keen interest in software requirements management will do well in this course. It's mainly geared to produced Systems Analysts and Systems Architects. However, Programmers, Database Administrators, Software Development Managers, and future CIO's may benefit from this course.

3.2 Learning Objectives

Students who complete this course will gain "Ready for work" skills, including the following

1. Describing and analysis with UML
2. Applying CASE tools (IBM Rational tools)
3. Describing and analyzing information systems

More specific objectives, include the following:

1. Understand the requirements management context
    a. Be able to describe the requirements management context.
    b. Be able to describe a requirements management process model.
2. Understand the requirements management artifacts
    a. Be able to describe requirements management artifacts, including: goal/features, requirements, process diagrams, use cases, class diagrams, object interaction
    b. Be able to describe and apply important development methods, including those that produce user models, structural models (classes), behavioral models (use cases), functional models (operations)
    c. Be able to apply CASE tools
3. Know requirements management, comprehensively
    a. Be able to analyze current issues in requirements management
4. Know a requirements management topic, in detail
5. Demonstrate critical thinking, integrative reasoning, & communication skills

3.3 Learning Method

Each week a topic will be presented in two parts:

1. Text book theories of the topic will be presented in a lecture format
2. Students will apply the theory in exercises in which the teacher will serve as guide and assistant—student must initiate the application of theories to the given problem

4 Schedule

The following table defines the schedule. However, the topics and readings may change according to the interests and abilities of the class. See the Academic Calendar.
On the web, the underlined items link to supporting information. Materials may be updated 24 hours prior to class; please check before attending class.

Because of snow, we will cover weeks 1-5 in weeks 2 – 5.

In-class student presentations will follow the order in the schedule, but may be delayed due to the snow delay.

#	Wk	Readings	In class	Due
1.	10-Jan	**Software Requirements** (Goldstein 2005); §1(Alexander et al. 2009); §1(Sommerville et al. 1997)	Discuss requirements problems	
2.	17-Jan	**Stakeholder & goals** §2-3 (Alexander et al. 2009); §7(Lamsweerde 2008)	Specify stakeholder and their goals	
3.	24-Jan	**Vision document**§6(Zielczynski 2008);	! The good and bad of: textual requirements and requirements document structures ! Open source requirements practices Draft a vision document	Milestone 0: Specify group
4.	31-Jan	**Context & scenarios** §4-5 (Alexander et al. 2009); §8(Chonoles et al. 2003)	! Reviewing requirements ! Scrum planning: concepts and tools Specify system scenarios	
5.	7-Feb	**Use cases** §3(Rosenberg et al. 2007); §4(Ambler 2005)	! Effort estimation with use cases ! Scrum planning: concepts and tools Specify workflow processes with use cases	Milestone 1
6.	14-Feb	**Exam 1**		
7.	21-Feb	**Storyboarding** §13(Wiegers 2003); (Kelly 2007)	! Animated storyboarding: tools and techniques Create use case storyboards	
8.	28-Feb	Spring break – no classes		
9.	7-Mar	1. *Spring break –no classes* **Workflows** §5(Bridgeland et al. 2009); *scan*: §4-4.4(Graham 2008)	! Business Process Simulation Specify system workflows	
10	14-Mar	**Qualities & measures** §6,9 (Alexander et al. 2009)	! Business activity monitoring Specify software qualities & measures	
11	21-Mar	**Domain modeling I** §8,13(Alexander et al. 2009); §3-4(Chonoles et al. 2003)	! UML, ERD, database schema, and data Specify a simple domain model	Milestone 2
12	28-Mar	**Domain modeling II** §5-6(Chonoles et al. 2003); §5(Ambler 2005)	! Requirements traceability ! Prioritizing requirements Specify an advanced domain model	
13	4-Apr	**Requirements discovery** §11-12(Alexander et al. 2009)	! Requirements workshops ! Systems Analysis and Requirements management careers Discuss requirements discovery	
14	11-Apr	**Exam 2**		
15	18-Apr	**Student specification presentations**	See the web site. Requirements Specification (M3) Presentation	Topic article
16	25-Apr	**Finals week** Milestone 3		Milestone 3

***! topics** are presented by students, but the paper is due the last week of classes.*

5 Readings by Week

Readings provide content for class discussions. Thus, readings must be read prior the class. For example, week 1 readings must be read prior to class on week 1.

2. **Software Requirements** (Goldstein 2005); §1(Alexander et al. 2009); §1(Sommerville et al. 1997)
3. **Stakeholder & goals** §2-3 (Alexander et al. 2009); §7(Lamsweerde 2008)
4. **Vision document**§6(Zielczynski 2008); §3(Sommerville et al. 1997)
5. **Context & scenarios** §4-5 (Alexander et al. 2009); §8(Chonoles et al. 2003)
6. **Use cases** §3(Rosenberg et al. 2007); §4(Ambler 2005)
7. *None (exam 1)*
8. **Storyboarding** §13(Wiegers 2003); (Kelly 2007)
9. *Spring break –no classes*
10. **Workflows** §5(Bridgeland et al. 2009); *scan*: §4-4.4(Graham 2008)
11. **Qualities & measures** §6,9 (Alexander et al. 2009)
12. **Domain modeling I** §8,13(Alexander et al. 2009); §3-4(Chonoles et al. 2003)
13. **Domain modeling II** §5-6(Chonoles et al. 2003); §5(Ambler 2005)
14. **Requirements discovery** §11-12(Alexander et al. 2009)
15. *None (exam 2)*
16. *None (final presentations)*

5.1 References

Students should have access to the primary textbook (Alexander et al. 2009); see the bookstore or buy online:

Primary Textbook: Discovering Requirements: How to Specify Products and Services, Ian Alexander, Ljerka Beus-Dukic, 2009.

All other books can be accessed from E-book from Books24x7. (Some articles are available from our web site.)

Readings

1. Maureen Kelly, *Interactive Prototypes with PowerPoint*, http://www.boxesandarrows.com/view/interactive, 2007. [see web link]
2. Alexander, I., and Beus-Dukic, L. *Discovering Requirements: How to Specify Products and Services* Wiley 2009.
3. Ambler, S.W. *The elements of UML 2.0 style* Cambridge University Press, Cambridge U.K. ; New York, 2005, pp. xi, 188 p.
4. Bridgeland, D.M., and Zahavi, R. *Business modeling : a practical guide to realizing business value* Morgan Kaufmann/Elsevier, Amsterdam ; Boston, 2009, pp. xvii, 387 p.
5. Chonoles, M.J., and Schardt, J.A. *UML 2 for dummies* Wiley, New York, 2003, pp. xvi, 412 p.
6. Goldstein, H. "Who killed the virtual case file?," *IEEE SPECTRUM* (42:9) 2005, p 18.
7. Graham, I. *Requirements modelling and specification for service oriented architecture* Wiley, Chichester, England ; Hoboken, NJ, 2008, pp. xiv, 301 p.
8. Lamsweerde, A.v. *Requirements Engineering: From System Goals to UML Models to Software Specifications,* Wiley, 2008.
9. Rosenberg, D., and Stephens, M. *Use case driven object modeling with UML : theory and practice*, ([New ed.) Apress; Springer-Verlag, Berkeley, CA; New York, 2007, pp. xxxi, 438 p.
10. Sommerville, I., and Sawyer, P. *Requirements engineering : a good practice guide* John Wiley & Sons, Chichester, England ; New York, 1997, p. 391.
11. Wiegers, K. *Software requirements* Microsoft Press Redmond, WA, USA, 2003.
12. Zielczynski, P. *Requirements Management Using IBM Rational RequisitePro* IBM Press, 2008.

5.2 E-book from Books24x7

Consider the E-books as good resource; they are **free** to our students. See this note: http://www2.cis.gsu.edu/cis/news/newandnoteworthy2.asp Access from the GSU online library: http://ezproxy.gsu.edu:2224/bookshelf.asp; select the link **Books24x7**. . You can also scroll down to Books 24x7 in the list of "databases": http://homer.gsu.edu/search/databases/alphabetical#B

5.3 Software

Additionally, much of the software is available for download, either from the instructor, or from the CIS agreements with MSDNAA and the IBM Academic Initiative.

6 Evaluation

Students are evaluated by the deliverables summarized in Table 1.

Table 1 Relative weights assigned to course deliverables.

Assignment	Percentage
Exam 1	25
Exam 2	35
Milestone 1	5
Milestone 2	5
Milestone 3	10
Requirements Specification (M3) Presentation	5
In-Class Exercises	5
Topic presentation	5
Topic article	5
Total	**100**

The following table overviews how credit will be assigned. Note that all group work includes a peer review, which can distinguish an individual's assigned points from the group's assigned points. (See **Self-Managed Teams** in the Workload Expectations section.)

Table 2 Grading standards.

Work quality	Percent
Absolutely fantastic, walk on water, overflow grade	110
Excellent answer on all counts	100
Excellent answer on most counts	90
Very good answer, but not excellent	80
Professionally done and adequate	70
Inadequate, needs work	60
Varying degrees of inadequacy	0 - 50

The following breakout depicts how grades will be assigned under this system.

Grade	Percentage
A	≥ 90
A-	≥ 87
B+	≥ 83
B	≥ 80
B-	≥ 77
C+	≥ 73
C	≥ 70
C-	≥ 67
D	≥ 60
F	< 60

7 In-Class Exercises

Each exercise is intended as a group effort, which illustrates important concepts introduced in the associated readings. **More detailed exercise description and associated materials shall be found on the course web site**.

- **Deliver** your results to the course web site during class (only). There shall be a blog, wiki, or document area for your submission.
    - Authors shall receive credit for each in-class exercise.
    - Prominently (at the top) of the delivered document, place the names of authors.
    - Do not include the name of anyone who is absent or did not contribute. Doing so will result in zero credit for all 'authors'.
    - Late deliverables (after class) shall receive zero credit.

7.1 Discuss requirements problems

7.2 Specify stakeholder and their goals

7.3 Draft a vision document

7.4 Specify system scenarios

7.5 Specify system workflows

7.6 Specify workflow processes with use cases

7.7 Create use case storyboards

7.8 Specify software qualities & measures

7.9 Specify a simple domain model

7.10 Specify an advanced domain model

7.11 Discuss requirements discovery

7.12 Discuss requirements management

8 Homework

8.1 Requirements Specification

Small teams (3 people) shall specify and analyze a small information systems project. Teams will specify and analyze an information system using a CASE tool.

1. Select a specification problem from your workplace, or from the web site
    a. The scope and sophistication of your production specification can vary substantially.
2. Obtain project approval from the instructor.
3. Apply the milestone templates, available from web site. (Please note that the *Classic RUP Lifecycle* is much larger, and also available; it includes downloadable (required) Word templates and examples—see the web site.
    a. The project must be formatted exactly as specified in the assignment and templates.
4. For *each* milestone, **deliver** via email**:**
    - ✓ A single file (zip if large) containing
        - Requirements artifacts as specified in the assignment description (see the web site)
        - Summarize group work:
            - Tasks completed by each member
            - Percentage of the total work completed by each member
    - ✓ Your Personal Statement
        - Each team member must a **confidential personal statement** (maximum of one page per member) highlighting
            - His or her contribution to the project
            - Comments on the contribution of other group members

- Lessons learned from the project
- Comments on the tool and
- Any other issues or concerns
- Comments about the course

Please use the following SUBJECT LINE: CIS 8030-S11-personal-statement

Do NOT use attachments. Submit it as text in the body of the message.

8.1.1 Milestone 0: Specify group

Email the list of your group members (2 or 3 members total) to the instructor. **Only one email please**.

8.1.2 Milestone 1

See the web site.

8.1.3 Milestone 2

See the web site.

8.1.4 Milestone 3

See the web site.

8.1.5 Requirements Specification (M3) Presentation

These presentations will take place during the last week of the term. **Attendance is mandatory for all student final project presentations**. (Failure to present may result in a zero grade for your project. Failure to attend may result in a 50% reduction of your M3 project points.) Each presentation will last about 10- 15 minutes (depending on the size of the class). Note: this is a very short time, so be prepared to be concise.

- External reviewers, from local companies, may be in the audience. This is not the time to air complaints about the class, your classmates, or downplay the strengths of your work. This is the time to show fruit of your semester's labor.

Your creative efforts should be realized within the following format:

- *Teamwork* (1 minute)
  Introduce your team members. *Briefly* describe their contributions.
- *System Requirements* (2 mins)
  What problems are solved by your system. *Get to it the point*! Show perceived problems or system requirements as bulleted points. Introduce system goals. Consider a few slides as follows:
    1. Problem domain (e.g., scheduling pilots for flight)
    2. Goals
- *Broad-Brush Outline of the Proposed System* (2 mins)
  Explain the focus of your modeling efforts. Show UML class models and use cases along with their requirements. (What parts of CRUD does your module do? For which classes?) Consider a few slides as follows:
    1. Trace matrix
    2. Zoom in on one or a few goals
- *System Analysis & Demonstration* (7 mins) Generally, its best to **show at least one vertical "slice" of the system**: that is, trace the logic from a abstract level to more concrete levels (e.g., goals, workflow, use case, scenarios, domain model). Repeat for other aspects in more detail if you have time. Briefly, explain your analysis, which ensured that your model is correct. Clearly, explain any design decisions that you made. Overview any aspects for which you do not have time to detail. Consider a few slides as follows:
    1. Workflow diagram
    2. Use case diagram
    3. One use case
    4. Storyboard

5. Domain model (zoom in on classes that support the use case)
6. If time remains, consider another use case and then its classes from the domain model

- *Conclusion* (1 mins) Try to answer questions that purchasers (IT executives) might have: Why is your module necessary? How can it work with other modules? Can the project be extended? What are the next phases of development for this project?
- *Open Floor*
  Finally, the presenting team will respond to questions from the class. Your instructor will moderate the time remaining.

8.2 Special topic

Small teams (2 or 3 people) will describe concept, method, or tool. (Typically, this is the same group as for the requirements specification project.)

- a paper
- a PowerPoint presentation summary (10 - 25 slides)

8.2.1 Select a special topic

Determine your preference for three (3) presentation topics. Email your choices early! First comes, first served. **Only one email per group please**.

8.2.1.1 ! Reviewing requirements

A requirements specification must be checked for problems. A single person may check for simple format and content issues. Describe some common checklists used in reviews.

Keywords

- Software requirements, checklist, review

Starting links

- Consider references in the Readings by Week section.
- Review checklists found in requirements books on GSU's E-Books24x7, such as these references (in 5.1):
  - (Sommerville et al. 1997)
  - (Ambler 2005)

8.2.1.2 ! Requirements workshops

A requirements specification must be checked for problems. A group may review the specification based on their own expertise and organization role (i.e., manager, developer, customer). Describe some common methods by which groups review requirements in workshops.

Keywords

- Software requirements workshop, review

Starting links

- Consider references in the Readings by Week section.
- Review checklists found in requirements books on GSU's E-Books24x7, such Alexander, I., and Maiden, N. *Scenarios, stories, use cases: through the systems development life-cycle* Wiley, 2004
- See also: Gottesdiener, E., and Principal, E. "Specifying Requirements With a Wall of Wonder," *The Rational Edge*) 2001. http://www.ebgconsulting.com/Pubs/Articles/WallOfWonder-Gottesdiener.pdf

8.2.1.3 ! Open source requirements practices

The open-source development is an agile, distributed approach with tool support. Requirements are informal. Describe the forms of requirements and how they are managed.

Keywords

- open source, requirements, management, requests, bugs, work item
  - Search for articles by author: W Scacchi, e.g., Understanding the **requirements** for developing **open source** software

Starting links

- http://www.jazz.net

- http://www.redmine.org/
- http://en.wikipedia.org/wiki/Comparison_of_issue_tracking_systems

8.2.1.4 ! The good and bad of: textual requirements and requirements document structures

Many requirements are specified using simple text (i.e. natural language). The sentence form of each requirement affects how people understand them. Similarly, the standardized structure of a (large) requirements document affects the usefulness of the requirements. Describe good and bad guidelines for writing and structure textual requirements. (Note that all IEEE document, including standards, are available through our library's IEEE database.)

Keywords

- Textual requirements, style, format, structure, IEEE document standards, template

Starting links

- http://en.wikipedia.org/wiki/Software_Requirements_Specification
- Requirements Engineering, Second Edition, by Elizabeth Hull, Ken Jackson and Jeremy Dick , Chapter 6
- Requirements Engineering: A Good Practice Guide by Ian Sommerville and Pete Sawyer John Wiley & Sons © 1977
- Rinzler, Ben. Telling Stories: A Short Path to Writing Better Software Requirements. John Wiley & Sons. © 2009
- Chapter 6 - Developing a Vision Document, Requirements Management Using IBM Rational RequisitePro
- Note: many of the UML books on GSU's E-Books24x7 have a document template in the appendix.

8.2.1.5 ! Effort estimation with use cases

Use cases or user stories are among the first requirements specified. Some tentative estimates can be made from them to aid planning. Find out how.

Keywords

- Effort estimation, planning, story point, use cases, user stories

Starting links

- http://en.wikipedia.org/wiki/Story_points
- http://www.agilemodeling.com/artifacts/userStory.htm
- http://ezproxy.gsu.edu:2224/book/id_22119/viewer.asp?bookid=22119&chunkid=604687154
- Dear Dr. Use Case: What About Function Points and Use Cases?
- http://csse.usc.edu/csse/research/AgileCOCOMO/

8.2.1.6 ! Scrum planning: concepts and tools

Scrum is a kind of agile development practice. Its planning practices consider multiple releases, each consisting of multiple milestones (or sprints). Describe this planning approach and related tools and techniques (e.g., IBM Jazz work item and planning).

Keywords

- Scrum, planning, sprint, story point, agile, backlog, burndown

Starting links

- https://www.ibm.com/developerworks/rational/library/08/0701_ellingsworth/
- http://jazz.net/library/
  - Get a free id and search the library
  - See the video: Using the Scrum Process and Agile Estimating and Planning with Rational Team Concert

8.2.1.7 ! Business activity monitoring

The real-time analysis of business processing has been touted by Gartner, Inc, as a central area of strategic growth for organizations. Goals, objective, requirements—some performance measure must be specified before it can be monitored. Thus, requirements specification and BAM are related. Describe BAM and its relationships to systems analysis and requirements specification. Illustrate the concepts with demos (screen images, videos, or live demos are on the web).

Keywords

- Business activity monitoring, BAM, key performance indicators, KPI, business dashboard

Starting links

- http://en.wikipedia.org/wiki/Business_activity_monitoring
- http://publib.boulder.ibm.com/infocenter/dmndhelp/v6rxmx/index.jsp?topic=/com.ibm.btools.help.monitor.doc/Doc/concepts/welcome/InfoWelcome.html

8.2.1.8 ! Animated storyboarding: tools and techniques

Storyboards show the screens a user will see as the software asks for inputs and presents results. In so doing, they provide concrete context for understanding requirements. Go beyond the introduction to storyboarding that is provided in this course by describing how advance tool can simulate storyboarding—in particular, consider IBM Rational Requirements Composer, and iRise.

Keywords

- Storyboarding, prototype, simulation, iRise, IBM Rational Requirements Composer

Starting links

- Software Requirements, Second Edition
- http://en.wikipedia.org/wiki/Storyboard
- Maureen Kelly, *Interactive Prototypes with PowerPoint*, http://www.boxesandarrows.com/view/interactive, 2007.
- http://www.irise.com/resources/videocenter.php
- http://www.ibm.com/developerworks/rational/library/08/1118_zhuo/

8.2.1.9 ! UML, ERD, database schema, and data

Data is modeled with the UML class diagram and the entity relationship diagram. Both of these diagrams provide a logical models, which can be realized as a physical, relational-database schema. Once a database is created from the database schema, data can be managed (e.g., added & deleted) from the database. What are the important differences between the UML class diagram and ERD? Why use one instead of the other? Provide an illustrative example to compare the modeling approaches. Illustrate a simple (2 entities with 1 relationship) data model (class diagram, ERD), database schema, and data.

Keywords

- UML, ERD, class diagram, database schema, transformation

Starting links

- http://www.ibm.com/developerworks/library/ws-mapping-to-rdb/
- http://www.agiledata.org/essays/umlDataModelingProfile.html
- http://en.wikipedia.org/wiki/Class_diagram
- http://en.wikipedia.org/wiki/Entity-relationship_model

8.2.1.10 ! Systems Analysis and Requirements management careers

Specifying and analyzing software systems is a rewarding career. Present job descriptions and describe daily work for people with beginning, intermediate, and advanced skills in systems analysis. Present real-world examples (e.g., from Monster.com, Dice.com) along with market forecasts on the growth of this career field. Consider the value, if any, of related certifications (e.g. Cisco network engineer, International Institute of Business Analysis, IBM, etc.)

Keywords

- Systems Analysis, Requirements management, careers,

Starting links

- http://en.wikipedia.org/wiki/Business_analyst
- http://www.bls.gov/; http://www.bls.gov/emp/ep_table_104.htm; http://www.bls.gov/oco/ocos287.htm
- http://www.usnews.com/money/careers/articles/2008/12/11/best-careers-2009-computer-systems-analystarchitectdesigner.html

8.2.1.11 ! Business Process Simulation

Business processes are often described in terms of their workflow, which can be represented using BPMN or UML's activity diagram (and extensions). Such models can be simulated to determine anticipated qualities of

implemented software processes. Vendors such as IBM and Tibco provide software for simulating business processes that are represented in BPMN. Present a business workflow and show how it can be simulated, along with the effort required and the benefits of simulation.

Keywords

- Workflow simulation, BPMN, activity diagram, Tibco, IBM Business Process Modeler

Starting links

- http://en.wikipedia.org/wiki/Business_process_modeling#Modeling_and_simulation
- §21 E-book: Alexander, I., and Maiden, N. Scenarios, stories, use cases: through the systems development life-cycle Wiley, 2004.
- §8 E-book: Michael Havey, SOA Cookbook: Design Recipes for Building Better SOA Processes, 2008
- §6 E-book: Ueli Wahli et al. , Building SOA Solutions Using the Rational SDP, 2008

8.2.1.12 ! Requirements traceability

The success of some requirements depend on other requirements. In fact, there are many dependencies among the requirements and other development artifacts, such as stakeholder statements, various documents, and software code. Describe requirements traceability and how it is used to discover conflicts that arise during project development, as well as other requirements traceability analyses.

Keywords

- Requirements traceability, suspect, meta-model

Starting links

- http://en.wikipedia.org/wiki/Requirements_traceability
- http://en.wikipedia.org/wiki/Traceability_matrix
- §13 E-Book: Jag Sodhi and Prince Sodhi, Managing IT Systems Requirements, 2003

8.2.1.13 ! Prioritizing requirements

Some requirements are more important. Present techniques showing how requirements can they be systematically placed in some order of preference according to users. Often, costs and risks (of various kinds) drive users to rank some requirements higher. Consider such factors that lead users to their ranking.

Keywords

- Software requirements, priorities, preferences, trade-offs, weights, value, risk, cost

Starting links

- http://en.wikipedia.org/wiki/Requirement_prioritization
- §14(Wiegers 2003)
- §10,14 (Alexander et al. 2009)

8.2.2 Topic article

Your class peers are the intended audience for this article. They are among the best IT managers, engineers, and scientists. The will want to know the details of the method you describe, as well as "why do I care?" ☺

In describing your topic, please consider the following aspects:

- Answer questions of what, why, when, where, how, and who.
- Describe both theory and computer tool support.
- Describe implications for practitioners, i.e., does the method really help?
- Include at least **four** academic references (peer-reviewed articles) in your research.
- Do not summarize (substantially) the course materials; assume them as background and add new materials.
- Write the article using the wikipedia.org *style* (meaning, a short, to the point, encyclopedia description). Your article will be posted (by the instructor) on our course web page as a Blog article—it will visible on the WWW.
- Relate the topic material to the course materials

Ensure that your article:

- Style, grammar, and spell checked (in Word)
- Minimum of 3,000 words; about 6 pages (single spaced)

- figures, tables, and references do not included in page count
- Liberal use of quotations are allowed; however, the **sources must be referenced**. No more than 20 percent of the paper word count can be quotations

- References to articles using a standard format (e.g., Chicago); see EndNote.

Include appropriate web links and article references using EndNote; See How to Scan CIS Literature.

- **Deliver** your article to the instructor as an email attachment
  - The article must be a Word document. Ensure that it is spell and grammar checked.

8.2.3 Topic presentation

- **Deliver** a PowerPoint presentation of your topic on the scheduled date
  - You will have about 15 minutes, depending on class size
- **Deliver** your PowerPoint slides to our web site

8.2.3.1 Presentation Guidelines

The project presentation should reflect your article. Be prepared to setup, present, and leave the presentation areas within the allotted time, depending on the number and type of presentations. Poorly prepared groups will find they must end their presentation before getting to their most important points.

Consider the following structure for your presentation:

1. Introduction
2. 1 Summary
3. < topic 1 details> …
4. Take Away Points (1 – 3)
5. 2 Summary
6. < topic 2 details> …
7. Take Away Points (1 – 3)
8. …
9. Bibliography

Presentations shall be professional, of course—minimally, PowerPoint sides.

9 Examinations

Online review guides to be updated one-half week prior to the exam.

9.1 Exam 1

See the online exam review for a description.

9.2 Exam 2

Comprehensive! See the online exam review for a description.

10 How to Scan CIS Literature

10.1 Software

Install EndNote:

1. **Free** EndNote @ GSU

10.2 Literature Review

Search for peer reviewed articles using keywords:

2. Scan the web
   a. www.google.com

3. Scan the web using scholar search engines
    a. http://scholar.google.com/
        i. Set the Google Scholar Preferences to
            1. Show library access links for Georgia State University
            2. Show links to import citations into EndNote
    b. http://academic.live.com/
    c. http://citeseer.ist.psu.edu/
4. Scan using library databases (@GSU)
    a. http://www.galileo.usg.edu
    b. In particular, the following databases
        i. **ABI/INFORM Complete**
        ii. **ACM Digital Library**
        iii. **IEEE Xplore**

11 Workload Expectations

Students should plan for 2 - 3 hours of work outside of class each week for each course credit hour. Thus, a 3-credit course averages between 6 and 9 hours of student work outside of the classroom, *each week*. See GSU sites for Academic Success:

- http://www2.gsu.edu/~wwwcam/incept/successtips.html

Students must take responsibility for their learning. College classes have few opportunities for student teacher interactions, given our busy schedules and short terms. Consequently, students must prepare to gain the most from each interaction.

Consider improving your study skills: The Counseling Center provides classes and one-on-one assistance to improve your study skills. See the following links:

- The Counseling Center: http://www2.gsu.edu/~wwwcou/
    - Call: (404) 651-2211 Fax:(404) 651-1714 Visit:106 Courtland Street SE, Atlanta, GA 30303
- Their Life Skills Lab, which improves studying: http://www2.gsu.edu/~wwwcou/lab.htm

Self-Managed Teams: Teams will be allowed for some activities during the term (Homework assignments). Please note that unless the activity is explicitly identified as a "team activity", I expect everyone to perform their own work (your hands on the keyboard). For team activities, you will be allowed to work with partners (of your choosing).

- Initial teams must be established early in the term. Established teams may continue working together on subsequent team activities. Team membership may change during the term, if problems arise. However, team members must be designated within one week of the due date for the team activity. Exception: you may withdraw from a team at any time and submit an assignment individually.
- Teams will submit one assignment for all team members. In most cases, each member of the team will get the same score.
    - However, an individual's score may be reduced at the discretion of the instructor, based on the perception that an individual did not participate fully.
- Each team assignment **must include the following**:
    - Tasks completed by each member.
    - **Percentage of the total work completed by each member.**
- Any individual with a low team contribution will be removed from their team.

Arbitration: There will be a one-week arbitration period after graded activities are returned. Within that one-week period, you are encouraged to discuss any assumptions and/or misinterpretations that you made on the activity that may have influenced your grade.

Attendance: If you are unable to attend a class session, it is your responsibility to acquire the class notes, assignments, announcements, etc. from a classmate. The instructor will not give private lectures for those that miss class.

Submission of Deliverables: Unless specific, prior approval is obtained, no deliverable will be accepted after the specified due date.

If you have a legitimate personal emergency (e.g., health problem) that may impair your ability to submit a deliverable on time, you must take the initiative to contact the instructor before the due date/time (or as soon after your emergency as possible) to communicate the situation.

Make-up exams will not be given: However, if a student has a planned absence, he or she may take the exam **earlier** with the permission of the instructor.

12Student Behavior

Behavior in class should be professional at all times. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to learning will not be tolerated and may be referred to the Office of the Dean of Students for disciplinary action.

12.1 Discrimination and Harassment

Discrimination and/or harassment will not be tolerated in the classroom. In most cases, discrimination and/or harassment violates Federal and State laws and/or University Policies and Regulations. Intentional discrimination and/or harassment will be referred to the Affirmative Action Office and dealt with in accordance with the appropriate rules and regulations.

Unintentional discrimination and/or harassment is just as damaging to the offended party. But, it usually results from people not understanding the impact of their remarks or actions on others, or insensitivity to the feelings of others. We must all strive to work together to create a positive learning environment. This means that each individual should be sensitive to the feelings of others, and tolerant of the remarks and actions of others. If you find the remarks and actions of another individual to be offensive, please bring it to their attention. If you believe those remarks and actions constitute intentional discrimination and/or harassment, please bring it to my attention.

12.2 Official CIS Department Class Policies

1. Prerequisites are strictly enforced. Students failing to complete any of the prerequisites with a grade of "C" or higher will be administratively withdrawn from this course with *loss of tuition fees*. **There are no exceptions, except as granted by the instructor with the approval of the department.**
2. Students are expected to attend all classes and group meetings, except when precluded by emergencies, religious holidays, or bona fide extenuating circumstances.
3. Students who, for non-academic reasons beyond their control, are unable to meet the full requirements of the course should notify the instructor, by email, as soon as this is known and prior to the class meeting. Incompletes may be given if a student has ONE AND ONLY ONE outstanding assignment.
4. A "W" grade will be assigned if a student withdraws before mid-semester if (and only if) he/she has maintained a passing grade up to the point of withdrawal. Withdrawals after the mid-semester date will result in a grade of "WF". See the GSU catalog or registrar's office for details.
5. Spirited class participation is encouraged and informed discussion in class is expected. This requires completing readings and assignments **before** class.
6. All exams and individual assignments are to be completed by the student alone with **no** help from any other person.
7. Collaboration within groups is encouraged for project work. However, collaboration between project groups will be considered cheating.
8. Copying work from the Internet without a proper reference is considered plagiarism and subject to disciplinary action as delineated in the GSU Student Handbook.
9. Any non-authorized collaboration will be considered cheating and the student(s) involved will have an Academic Dishonesty charge completed by the instructor and placed on file in the Dean's office and the CIS Department. All instructors regardless of the type of assignment will apply this Academic Dishonesty policy equally to all students. Abstracted from GSU's Student Handbook Student Code of Conduct "Policy on Academic Honesty and Procedures for Resolving Matters of Academic Honesty"
    a. http://www2.gsu.edu/%7Ewwwdos/codeofconduct_conpol.html
    b. http://www2.gsu.edu/~wwwcam/

As members of the academic community, students are expected to recognize and uphold standards of intellectual and academic integrity. The University assumes as a basic and minimum standard of conduct in academic matters that students be honest and that they submit for credit only the products of their own efforts. Both the ideals of scholarship and the need for fairness require that all dishonest work be rejected as a basis for academic credit. They also require that students refrain from any and all forms of dishonorable or unethical conduct related to their academic work.

Students are expected to discuss with faculty the expectations regarding course assignments and standards of conduct. Here are some examples and definitions that clarify the standards by which academic honesty and academically honorable conduct are judged at GSU.

Plagiarism. Plagiarism is presenting another person's work as one's own. Plagiarism includes any paraphrasing or summarizing of the works of another person without acknowledgment, including the submitting of another student's work as one's own. Plagiarism frequently involves a failure to acknowledge in the text, notes, or footnotes the quotation of the paragraphs, sentences, or even a few phrases written or spoken by someone else. The submission of research or completed papers or projects by someone else is plagiarism, as is the unacknowledged use of research sources gathered by someone else when that use is specifically forbidden by the faculty member. Failure to indicate the extent and nature of one's reliance on other sources is also a form of plagiarism. Any work, in whole or part, taken from the Internet or other computer based resource without properly referencing the source (for example, the URL) is considered plagiarism. A complete reference is required in order that all parties may locate and view the original source. Finally, there may be forms of plagiarism that are unique to an individual discipline or course, examples of which should be provided in advance by the faculty member. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly or creative indebtedness, and the consequences of violating this responsibility.

Cheating on Examinations. Cheating on examinations involves giving or receiving unauthorized help before or during an examination. Examples of unauthorized help include the use of notes, texts, or "crib sheets" during an examination (unless specifically approved by the faculty member), or sharing information with another student during an examination (unless specifically approved by the faculty member). Other examples include intentionally allowing another student to view one's own examination and collaboration before or after an examination if such collaboration is specifically forbidden by the faculty member.

Unauthorized Collaboration. Submission for academic credit of a work product, or a part thereof, represented as its being one's own effort, which has been developed in substantial collaboration with another person or source or with a computer-based resource is a violation of academic honesty. It is also a violation of academic honesty knowingly to provide such assistance. Collaborative work specifically authorized by a faculty member is allowed.

Falsification. It is a violation of academic honesty to misrepresent material or fabricate information in an academic exercise, assignment or proceeding (e.g., false or misleading citation of sources, the falsification of the results of experiments or of computer data, false or misleading information in an academic context in order to gain an unfair advantage).

Multiple Submissions. It is a violation of academic honesty to submit substantial portions of the same work for credit more than once without the explicit consent of the faculty member(s) to whom the material is submitted for additional credit. In cases in which there is a natural development of research or knowledge in a sequence of courses, use of prior work may be desirable, even required; however the student is responsible for indicating in writing, as a part of such use, that the current work submitted for credit is cumulative in nature.