



Figure 1: Textbook cover image

## **CSE 3311. Object-Oriented Software Engineering SPR 2014**

### **General**

Lectures: TuTh 3:30pm — 4:50pm, WH 210  
Instructor: David C. Kung, ERB 532, 817-272-3627/-3784(fax)  
Office Hours: 2:30pm-3:30pm Tuesday and Thursday, or by appointment  
GTA: TBD  
TA Office Hours: TBD

### **Course Objective in Catalog:**

CSE 3311. OBJECT-ORIENTED SOFTWARE ENGINEERING (3-0) Study of an agile unified methodology and its application to object-oriented software development. Topics include requirements acquisition, use case derivation, modeling and design of interaction behavior and state behavior, introduction to design patterns, derivation of design class diagrams, implementation considerations and deployment. Team project. Prerequisite: CSE 1325 and CSE 2320.

### **Textbook**

David Kung, “Object-Oriented Software Engineering: An Agile Unified Methodology,” McGraw-Hill Higher Education, 2013. IMPORTANT: There are older, free-giving editions of the book. These editions are outdated. Therefore, it is important that you purchase the right edition — the ISBN is 978-0073376257, the book has a hard cover and looks like in Figure 1.

### **Reference Books**

For UML:  
G. Booch, J. Rumbaugh and I. Jacobson, “The Unified Modeling Language User Guide,” 2nd Ed.,

Addison Wesley, 2007.

For Java:

Cay S. Horstmann, Gary Cornell, “Core Java, Volume 1: Fundamentals,” 9th Edition, Prentice Hall, 2012.

Cay S. Horstmann and Gary Cornell, “Core Java, Volume 2: Advanced Features,” 9th Edition, Prentice Hall, 2013.

For JSP:

Oracle.com website has an online tutorial.

The appendix of the textbook also contains a brief introduction to JSP.

## Tentative Schedule

See Table 1.

## Workload

- One team project with three planned increments: 45%, equal weight. All students are required to attend all presentations and attendance is 10% of the project score.

**Team members are required to work together throughout the project — that is, WORK TOGETHER FROM BEGIN TO END. You should plan on committing your time and effort to the team work. Teams that do not work together produce very poor results and receive very poor scores! Teamwork, teamwork, teamwork! Keep this in mind.**

**Make sure that you perform well in your team. The peer evaluations submitted by your peers will affect your project scores. Each negative point, i.e., “-1”, deducts 1% from your teamwork score. For example, if your team gets 90 for increment 1, and you receive five “-2” in your peer evaluations, then your score drops to 80.**

Teams or team members should report to the instructor **as soon as possible** if there are problems in the team that will affect teamwork.

- Three individual homework assignments with weights 5%, 10% and 10%, respectively. Keep your homework confidential and do not share it with anybody. Academic dishonesty will result in zero point and academic discipline.
- One final exam 20%. The final exam is a 90 minute open book, open note test. It has 20 questions, each requires the student to *CIRCLE* the *BEST ANSWER*, not just the correct answer, from 4 choices. No laptop or any other electronic devices are permitted in the exam.
- Pop quizzes 10%. There are a number of equal-weight pop quizzes. The exact number of pop quizzes is unknown in advance. A pop quiz can take place any time during the class and on any class day. No make-up quiz will be granted unless you inform the instructor beforehand of any event that prevents you from attending the class. In case of sickness, the student is required to present a doctor’s letter as a proof. In these cases, a make-up pop quiz will be provided.

Date	Class Activity	Reading	Assignment (due date*)
1/14	Policy and introduction, form teams		
1/16	Team project and requirements	Ch 4	
1/21	Agile unified process	Ch 2	
1/23	domain modeling	Ch 5	brainstorming & classification sheets, domain model class diagram (1/30)
1/28	domain modeling, class diagram	Ch 5	HW1 (2/11)
1/29	*** CENSUS DAY ***		
1/30	Deriving use cases from requirements	Ch 7	abstract and high level use cases, use case diagrams (2/6)
2/4	use case diagram	Ch 7	use case diagrams (2/04)
2/6	Expanded use cases	Ch 8	expanded use cases (2/13)
2/11	Object interaction modeling	Ch 9	scenarios, scenario tables, sequence di- agrams (2/18)
2/13	Object interaction modeling	Ch 9	
2/18	Applying controller pattern	Ch 10	
2/20	Deriving Design Class Diagram	Ch 11	DCD (2/25)
2/25	Test Driven Development (TDD)		
2/27	Reserved		HW2 (3/11)
3/4	Inc. 1 team presentations and demos		2nd increment (3/25)
3/6	Inc. 1 team presentations and demos		
3/11	*** SPRING BREAK ***		
3/13	*** SPRING BREAK ***		
3/18	Expert pattern	Ch 10	
3/20	Creator pattern	Ch 10	HW3 (4/3)
3/25	Inc. 2 team presentations and demos		3rd increment (4/24)
3/27	Inc. 2 team presentations and demos		
4/1	Inc. 2 team presentations and demos		
4/3	Reserved		
4/8	Object state modeling	Ch 13	
4/10	State Pattern	Ch 13	
4/15	State Pattern		
4/17	Review for final exam		
4/22	reserved		
4/24	Inc. 3 team presentations and demos		
4/29	Inc. 3 team presentations and demos		
5/2	*** Last day of classes ***		
5/8	Final exam Thursday 2:00pm-3:30pm		

Table 1: Tentative schedule

## Grade Distribution

Total Score	$\geq 85$	$\geq 70$	$\geq 60$	$\geq 50$	$< 50$
Grade	A	B	C	D	F

The grades are computed by a program according to your scores. Even if you get 84.99 your grade will be a “B”, not an “A” though it is so close to 85.

## General Grading Criteria

The homework assignments are required to satisfy the Accreditation Board of Engineering and Technology (ABET) outcomes (c), (e) and (k):

(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability

(e) an ability to identify, formulate, and solve engineering problems

(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

The homework assignments are evaluated according to the following rubrics:

**Level L5. 100-90 points.** Proposed solution significantly exceeds expectation, the solution is well-organized and clearly formulated, needed assumptions are clearly stated.

**Level L4. 89-80 points.** Proposed solution is adequate and valid, the solution is organized and adequately described, assumptions are stated.

**Level L3. 79-70 points.** Proposed solution is somewhat adequate and valid, the solution is somewhat organized and partially described, important assumptions are stated.

**Level L2. 69-60 points.** Proposed solution is only marginally adequate or valid, the solution is poorly organized or difficult to understand, important assumptions are not stated.

**Level L1. 59-0 points.** Proposed solution is incorrect or far from adequate and valid, the solution is impossible to comprehend.

## Project Grading Criteria

The team project is evaluated each increment using an evaluation sheet similar to the one shown in Figure 2. Pay attention to the weights given to the different categories of items. If your presentation and/or documentation misses an item, then the item will receive zero point.

## Assignment Rules

1. Late assignments will be accepted before the explanation of the homework assignment in class. Late assignment are subjected to 10% deduction and additional 10% deduction for

CSE 3311 Project Increment Evaluation Sheet													
Team #													
		Level 5			Level 4		Level 3		Level 2		Level 1		
Submission	%	High quality work that exceeds expectation			Clearly high quality work		Major components are present, good quality work		Major components missing, work quality is poor		Many components missing, work is very poor		
		100	95	90	85	80	75	70	65	60	40	20	0
Requirements	5												
<b>Use Case Modeling</b>	17												
Abstract/High Level Use Cases													
Expanded Use Cases													
Use Case Diagram													
Requirements - use case													
Use Case Increments													
<b>Domain Modeling</b>	17												
Brainstorm & Classification													
DM Class Diagram													
<b>Object Interaction Modeling</b>	17												
Scenarios/Scenario Tables													
Sequence Diagrams													
<b>Design Class Diagram</b>	17												
Implementation Order	5												
<b>Software Demonstration</b>	17												
Individual Review Reports	5												
Total	100												

Figure 2: Sample project evaluation sheet

every 24 hours passing the deadline. After the explanation, no assignment will be accepted. This rule will be consistently applied to every student in all cases, regardless whatever good reason you may have.

2. You are encouraged to discuss homework with your classmates but not allowed to copy the solutions from or share the solutions with anybody. If you violate this rule, then you will receive no credit for that assignment unless you can prove that you are not involved.
3. The GTA will do most of the grading. If you do not agree with the result, contact the GTA first. Please contact the instructor if you cannot reach a consensus. This would help the GTA improve her/his grading skill and avoid inconsistency due to improper interference of the instructor.
4. To be fair to the other students, no special assignment will be provided for any student to improve her/his grade.

## Go Home Early Request

Requests for permission to go home before the final exam date will not be granted except for medical reasons and with a proof from a doctor.

## Class Email Alias

I will broadcast important messages, homework assignments, project descriptions etc. to students of the class. The messages will be delivered to your UTA email account. If you do not receive such messages, please contact me immediately so that I can add you to the list. It is your responsibility to contact me when your email account has changed.

## Your Standing and Class Statistics

After each assignment or test has been graded, I will distribute to each of you your scores and grade up to that assignment or test. You will also receive class performance statistics. Timely distribution of such information requires that the TA email me the scores in time. Please help me to remind the TA to email me such information. The email message will contain a heading like the following and statistics information, explained as follows.

A1,A2,A3: individual homework assignments 1, 2, 3

I1,I2,I3: increments 1,2,3

PEV: peer evaluation form submission for 1,2,3

Q1,Q2,Q3: quiz 1,2,3

T or FE: final exam

PlannedWT: planned weight in percentage

ActualWT: actual weight

Email	Lastname	A1	A2	I1	I2	I3	PEV	Q1	Q2	Q3	Q4	Q5	FE	
PlannedWT	%	15	15	14	14	14	3	2	2	2	2	2	15	100
ActualWT	%	15	15	0	14	28	3	2	2	2	2	2	15	100
abc1234	abcd_efghij_kl	95	90	29	69	85	100	0	50	0	100	100	75	80 B

=====

Grade distribution: 12 A; 12 B; 0 C; 1 D; 0 F.

Max = 90; Min = 59; Med = 83; Avg = 82.96.

Columnwise statistics:

=====	A1	A2	I1	I2	I3	PEV	Q1	Q2	Q3	Q4	Q5	FE
Average:	87	87	39	72	93	100	55	41	24	100	100	73
Minimum:	0	0	27	61	85	100	0	0	0	100	100	55
Maximum:	95	95	56	81	97	100	100	75	66	100	100	90
Medium::	95	90	35	69	94	100	50	50	33	100	100	70

## Team Member Peer Evaluation

Your teamwork performance is an important part of this course. At end of each increment, each student is required to submit his team member evaluation form, which requests the student to evaluates the performance of other team members. Each submission is 1% (if there are three increments, then the total is 3% for the semester). Table is the evaluation form. Only hard copies of the evaluation form are accepted. Submit the form on the last day of the increment presentation.

## Project Team Member Evaluation Form

Increment# \_\_\_\_ Course#\_\_\_\_\_ Fall / Spring Year\_\_\_\_\_

Please submit hardcopy or fax to David Kung 817-272-3784, EMAIL NOT ACCEPTABLE  
Most team members perform well in a project team. However some members perform extremely well and some very poorly. It is constructive to encourage the outstanding members and inform those who need improvements. This form allows you to convey such information to your team members whenever you deem there is such a need.

Please give an integer rating of -2 (poor), -1 (below average), 0 (average), +1 (above average), or +2 (excellent) for some of the aspects of the members you want to convey your assessment. Your evaluation might be reproduced (to hide your identity) and presented to the relevant members.

However, the identity of the evaluator will be kept absolutely confidential in all cases.

Member name					
Group meeting attendance					
Group discussion					
Individual assignment					
Technical contribution					
Organizational contribution					
Overall performance					

Comments: (use additional sheets if needed)

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_



Please fill the course info, read, sign and return this statement to the instructor. Thanks.

**Statement of Ethics  
Student Confirmation**  
(CSE\_\_\_\_\_, Spring [], Summer [], Fall [], Year of \_\_\_\_\_)

The following is an excerpt from the College of Engineering's statement on Ethics, Professionalism, and Conduct of Engineering Students. The notes are modifications appropriate for Computer Science and Engineering courses. Read the statement carefully, sign it, and return it to your instructor. A copy of the original policy is available for examination in the Computer Science and Engineering office. Additional copies of this statement can be obtained from your instructor or the Computer Science and Engineering office.

**Statement on Ethics, Professionalism, and Conduct of Engineering Students  
College of Engineering, The University of Texas at Arlington**

The College cannot and will not tolerate any form of academic dishonesty by its students. This includes, but is not limited to 1) cheating on examination, 2) plagiarism, or 3) collusion.

Definitions:

A. Cheating on an examination includes:

1. Copying from another's paper, any means of communication with another during an examination, giving aid to or receiving aid from another during an examination;
2. Using any material during an examination that is unauthorized by the proctor;
3. Taking or attempting to take an examination for another student or allowing another student to take or attempt to take an examination for oneself.
4. Using, obtaining, or attempting to obtain by any means the whole or any part of an unadministered examination.

B. Plagiarism is the unacknowledged incorporation of another's work into work which the student offers for credit.

C. Collusion is the unauthorized collaboration of another in preparing work that a student offers for credit.

D. Other types of academic dishonesty include using other student's printouts from the ACS labs or students' disk, etc.

Notes:

1. The use of the source code of another person's program, even temporarily, is considered plagiarism.
2. Allowing another person to use your source code, even temporarily, is considered collusion.
3. In this class, the specific exceptions given below are not considered scholastically dishonest acts:
  - A. Discussion of the algorithm and general programming techniques used to solve a problem
  - B. Giving and receiving aid in debugging
  - C. Discussion and comparison of program output
4. The penalty assessed for cheating on a given assignment will be twice the weight of the assignment and will include notification of the proper authorities as stipulated in the UTA Handbook of Operating Procedures and on the web at <http://www2.uta.edu/discipline>
5. You may be entitled to know what information UT Arlington (UTA) collects concerning you. You may review and have UTA correct this information according to procedures set forth in UT System BPM #32. The law is found in sections 552.021, 552.023 and 559.004 of the Texas Government Code.

I have read and I understand the above statement.

Student's signature:\_\_\_\_\_

Student's name (printed):\_\_\_\_\_

Student's ID number:\_\_\_\_\_