CSCI 531.01W Advanced Programming with Java

COURSE SYLLABUS: Fall 2018

INSTRUCTOR INFORMATION

Instructor: Dr. Yuehua Wang
Office Location: JOUR 230
Office Hours: MW 1:00 PM-2:00 PM and T 12:30 PM-4:30 PM or other time by appointments via emails
Office Phone: 903-886-5802
Office Fax: 903-886-5404
University Email Address: Yuehua.Wang@tamuc.edu
Preferred Form of Communication: Email
Communication Response Time: Within 24 hours on weekdays. If emails are sent on Friday, the replies will be available by the following Monday.

COURSE INFORMATION

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s)

Cay S. Horstmann, Big Java, Binder Ready Version: Early Objects， 6th Edition. Wiley, 2016, ISBN-10: 1119056446, ISBN-13: 978-1119056447.

In most cases, the instructor slides are sufficient for understanding the material. The following textbooks are very useful as references or tutorials for Java.

- Y. Daniel Liang. Intro to Java Programming, Comprehensive Version (10th Edition) , 2014, ISBN-13: 978-0133761313.
- Joyce Farrell, Java Programming, Eighth Edition. Course Technology | Cengage Learning, 2016, ISBN-13: 978-1-285-85691-9.

The syllabus/schedule are subject to change.

- Bruce Eckel, Thinking in Java (4th Edition). Prentice Hall, 2006,ISBN-13: 007-6092039389
- D.S. Malik, Java Programming: From Problem Analysis to Program Design, Fifth Edition. Course Technology, Cengage Learning, 2011, ISBN-13 978-1-111-53053-2.

Software Required

Students may develop your programs on any machine that you like: we encourage you to use your own equipment. We provide instructions for setting up a Java programming environment under Windows, OS X, and Linux.

You can use one of the several excellent Java IDEs available, with instructor materials covering Eclipse and NetBeans. Eclipse is freely available online at eclipse https://eclipse.org/downloads/ . Note: This course does NOT address JavaScript.

Google Chrome and Internet Explorer are two recommended browsers for developing Java Applet

Optional Texts and/or Materials

Course Description

Java is popular among professional programmers because it can be used to build visually interesting graphical user interface (GUI) and Web-based applications. This course will motivate students to learn programming skills while building advanced applications in use. Particular emphasis is given to all topics of fundamental programming including selection and repetition; advanced topics include inheritance, polymorphism, exceptions; and representative Java applications such as Java GUI, Java Applets, Java Graphics, Java Multithreading, and Java networking, database, and mobile programming. Concretely, it covers:

- An Overview of Computers and Programming Languages
- Basic Elements of Java
- Introduction to Objects and Input/Output
- Control Structures I: Selection
- Control Structures II: Repetition
- Graphical User Interface (GUI) and Object-Oriented Design (OOD)
- User-Defined Methods
- User-Defined Classes and ADTs
- Arrays
- Inheritance and Polymorphism
- Handling Exceptions and Events
- Advanced GUIs and Graphics

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- HTML and Applet
- Multithreading
- Networking (client/server)
- Database
- Mobile programming

Program Information: Program Outcomes, Sequence, Prerequisites, Post-requisites

Prerequisites: Lvl G CSCI 515 Min Grade C or C515 075 or W515 0

Students will learn basic elements of Java and how to write Java programs and applications, including Java GUI, Applets, Graphics, Multithreading, and Networking, how to utilize pre-existing Java programs and develop new programs and applications. Students will be expected to complete numerous programming assignments and programming projects. This course requires students have experience with C++ programming language and object-oriented methods.

Supplementary information for the course is available at D2L. Log on with your Access ID for class notes, lecture slides, class announcements, the course syllabus, and other information for the course. You will submit your assignments and project and check grades there too.

Student Learning Outcomes (Should be measurable; observable; use action verbs)

This course is similar to an exercise class. You learn new concepts and techniques, and then, exercise these new-found skills. At the end of the class,

1. (SLO531.1) Students will design and implement programs in the Java programming language that make strong use of classes and objects.
2. (SLO531.2) Students will learn to print formatted text to the console output and read/parse console input text using a Scanner object.
3. (SLO531.3) Students will apply logical constructs for branching and loops as well as use iterator objects when appropriate.
4. (SLO531.4) Students will learn to define classes and methods. In addition, students will learn the basics of polymorphism through use of super-classes and interfaces. Finally, students will develop an understanding of the Java language class hierarchy including the cosmic Object superclass.
5. (SLO531.5) Students will learn to create and access arrays and array lists, including those with references to generalized objects types.
6. (SLO531.6) Students will develop linked data structures such as lists and trees.

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7. (SLO531.7) Students will learn how to handle exceptions and errors. Students will design and implement custom checked and unchecked exception types.
8. (SLO531.8) Students will become familiar with the use of input, output, and object stream objects. Students will use such streams for file processing as well as client/server communications tasks.
9. (SLO531.9) Students will develop sophisticated, interactive user interfaces using the Java Swing class and appropriate layout managers. Students will also be exposed to advanced topics including multithreading, internet networking, and JDBC database connectivity (time permitting).

*Note: All background material will be developed and offered in efficient and effective ways within the course itself and from scratch.

COURSE REQUIREMENTS

Minimal Technical Skills Needed
Using computers, operating systems, program compilers, IDE, and Microsoft Word

Instructional Methods
This course is lecture supplemented by text and D2L. To get started with the course, go to: https://leo.tamuc.edu. You will need your CWID and password to log in to the course.

Student Responsibilities or Tips for Success in the Course

1. Make-up examinations for exams will not be given. If you have a compelling and documented reason for not being able to attend the exam, you must make the alternative arrangements before the examination. Grades will not be curved for the course, and you will receive the grade that you earn through your performance on the assignments, exams, project, and bonus questions. There will be no individual exceptions to the grading policy, and, therefore grades of a C or F are possible.
2. No late work will be accepted except under special extenuating circumstances when prior arrangements have been made with the instructor.
3. Grades will be posted within one week after assignment due date.
4. You are responsible to check your grades after each assignment. Please report any error or inconsistency to the instructor within 7 days if possible.
5. All assignments must be submitted using D2L if applicable. Students must adhere to the following rules when submitting assignments. Failure to do so will affect their grades.

   • File Name

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Should be named according to the following pattern: LastFirstX.**, where Last is the student's   last name, First is the student's first name, and X is the assignment number.

- For example, student John White would submit WhiteJohn3.Java for programming assignment 3.

- File Header

- The first lines of the submitted file should include a comment with the following information and format:

```
/**
 * A short description of the program.
 *
 * @author    Last Name, First Name
 * @assignment CSCI 531 Assignment X
 * @date      Date
 */
```

6. All students are requested to access their university e-mail account regularly. You may be contacted when important matters arise. If you have any questions about the course or need assistance, please contact the instructor and/or the TA in person during office hours or by e-mail at any time.

GRADING

Letter grades for the course will be assigned according to this scale of the percentages given below.

A	90% -100%
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	Below 60% (0%-59%)

Assessments

Grading for this course is based on a 1000 point scale. End-of-semester numeric scores will be weighted as follows.

- Assignment   30%
- In-class lab   10%
- Exam 01   15%
- Exam 02   15%
- Project   20%
- Quiz   10%

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*Note: There will be a number of quizzes that will cover lecture material, and quizzes are unannounced pop-up quizzes. Each week there would be an assignment and a quiz. They are to be solved independently and tightly related to the class materials. Neither late assignment nor makeup-quiz is allowed.

This is a web class. Assignments will be uploaded to D2L course shell. Students are responsible for obtaining and setting up their D2L account using their TAMUC student login. They need to follow the D2L course shell daily for the course announcements, downloading and uploading the assignments, and other course activities.

TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A

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Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

Tablet and Mobile Support

Device	Operating System	Browser	Supported Browser Version(s)
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or **point** release of that major version) and the previous major version of iOS (the latest minor or **point** release of that major version). For example, as of June 7, 2017, D2Lsupports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
  - 512 MB of RAM, 1 GB or more preferred
  - Broadband connection required courses are heavily video intensive
  - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution

- You must have a:
  - Sound card, which is usually integrated into your desktop or laptop computer
  - Speakers or headphones.
  - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.

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- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: JAVA web site http://www.java.com/en/download/manual.jsp

- Current anti-virus software must be installed and kept up to date.

Running the browser check will ensure your internet browser is supported.
> Pop-ups are allowed.
> JavaScript is enabled.
> Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
  o Adobe Reader https://get.adobe.com/reader/
  o Adobe Flash Player *(version 17 or later)* https://get.adobe.com/flashplayer/
  o Adobe Shockwave Player https://get.adobe.com/shockwave/
  o Apple Quick Time http://www.apple.com/quicktime/download/

- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu**.**

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

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COMMUNICATION AND SUPPORT

Brightspace Support

Need Help?
Student Support

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words "click here" to submit an issue via email.

System Maintenance

D2L runs monthly updates during the last week of the month, usually on Wednesday. The system should remain up during this time unless otherwise specified in an announcement. You may experience minimal impacts to performance and/or look and feel of the environment.

Interaction with Instructor Statement

Interaction with Instructor Statement: For general questions and assistance with the course, the instructor will keep a schedule of 6 regular office hours per week. If a student cannot meet during the designated schedule, arrangements can be made to meet at a more convenient time. An email should be sent to the instructor at least 24 hours prior to the time the student plans on meeting. Generally, I will reply to your e-mail messages in a timely manner. A reply can be expected within 24 hours.

My responsibilities:
1. Make sure to accommodate all your learning needs
2. Try my best to answer your questions and resolve other related issues
3. Give feedback and your grade on assignments within one week of the due date.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Class Decorum Civility in the classroom or online course and respect for the opinions of other is very important in an academic environment. It is likely you may not agree with everything that is said or discussed in the classroom/online course. Courteous behavior and responses are expected. To create and preserve a learning environment that optimizes teaching and learning, all participants share a responsibility in creating a civil and non-disruptive forum. Students are expected to conduct themselves at all times in a manner that does not disrupt teaching or learning. Faculty have the authority to request students who

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exhibit inappropriate behavior to leave the class/online course and may refer serious offenses to the University Police Department and/or the Dean of Students for disciplinary action. (See Student Guidebook)

Academic Honesty

It is the policy of the University, the History Department, and the instructor that no form of plagiarism or cheating will be tolerated. Plagiarism is defined as the deliberate use of another's work and claiming it as one's own. This means ideas as well as text, whether paraphrased or presented verbatim (word-for-word). Cheating is defined as obtaining unauthorized assistance on any assignment. Collusion is defined as selling or purchasing academic products with the intention that they be submitted to fulfill an academic or course requirement. Proper citation of sources must always be utilized thoroughly and accurately. Cheating/plagiarism/collusion will result in a grade of "0" for the assignment, and may also result in failure of the course and/or disciplinary action by the University. Any student found guilty of violating academic integrity policy will fail the assignment in question, will automatically fail the course and will be subject to disciplinary action by the university (see Texas A&M University-Commerce Code of Student Conduct 5.b. [1,2,3]). Further information on the history department's plagiarism policy can be found on the department webpage. If you are unclear about what constitutes academic dishonesty, ask.

Writing Center

Students are encouraged to take advantage of the Writing Center's resources for assistance with drafting their written assignments. Although the center will not write your paper for you, it may help you to improve your writing skills. If you use the Writing Center, plan in advance because it can only help you if there is adequate time to incorporate their suggestions into your paper. Additionally, I am willing to read rough drafts (and even multiple drafts) of your written work so long as the drafts are submitted at least one week prior to the due date.

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.
http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx

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Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: Netiquette
http://www.albion.com/netiquette/corerules.html

TAMUC Attendance

For more information about the attendance policy please visit the Attendance webpage and Procedure 13.99.99.R0.01.
http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

Undergraduate Academic Dishonesty 13.99.99.R0.03

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf

Graduate Student Academic Dishonesty 13.99.99.R0.10

http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce
Gee Library- Room 162
Phone (903) 886-5150 or (903) 886-5835
Fax (903) 468-8148
Email: studentdisabilityservices@tamuc.edu

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Website: [Office of Student Disability Resources and Services](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)
[http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndService s/](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf) document and/or consult your event organizer.

Web   url:
[http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/ 34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf](http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf)

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Meets 8/27/2018 through 12/14/2018

- Week 1 : Course Introduction, overview of Java, basic elements of Java, and first Java program
- Week 2 : Introduction to input/output, arrays, methods, classes, inheritance and polymorphism I.
- Week 3 : Inheritance and polymorphism II, linked data structures, graphical user interfaces I (Swing)
- Week 4 : Graphical user interfaces II (Swing)
- Week 5 : HTML and Java Applet I
- Week 6 : HTML and Java Applet II

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- Week 7 : Exam 01
- Week 8 : Multi-threading I and Project announcement
- Week 9: Multi-threading II
- Week 10: Networking (client/server) I
- Week 11: Networking (client/server) II
- Week 12: Database I
- Week 13: Database II
- Week 14: Exam 02
- Week 15: Mobile device programming
- Week 16: Project submission

Note: The right to modify the presentation order of materials is reserved. Course progress will be based on feedback and suggestion from students. We would cover the course materials, so if we slow in some topics, we must accelerate elsewhere.

HAVE A HAPPY AND SUCCESSFUL SEMESTER

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