

## TESD 1420 - Advanced Java Programming (4 Credits)

### Course Description

This course covers advanced Java programming concepts such as generics, data structures, search trees, and advanced JavaFX design and implementation. Students will gain a sound understanding of in- depth Java programming and will use their skills to create an advanced JavaFX layout utilizing these concepts.

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### Course Objectives

- Explain generics and how they are used.
  - Explore common data structures.
  - Work with search trees and common data related to them.
  - Build a useful JavaFX layout using advanced Java programming concepts.
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### Course Outline

- Recursion
  - Generics
  - Lists, Stacks, and Queues
  - Sets and Maps
  - Sorting
  - Implementing Priority Queues
  - Binary Search Trees
  - Advanced JavaFX
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### Textbook & Reading Materials

Introduction to Java Programming: Comprehensive Version, 11th Ed (Lifetime access), Y. Daniel Liang, ISBN: 9780134700144

## Assignments and Assessments

Course Introduction and Standards  
Meet Your Instruction Team  
Rules of the Lab  
CS Code of Conduct Policy  
Submitting Assignments in Canvas  
Taking a Screenshot  
Programming Standards  
GitHub Standards  
Writing Standards  
Exam Standards  
Orientation  
Syllabus Agreement  
Course References  
Student Data Files  
Check Exercises  
Module 1 Introduction and Competencies  
Chapter 18 - Reading Day  
Kecursion - t-unelamental  
Programming 18-9  
Recursion - Real World  
Chapter 18 GitHub  
Module 1 Exam  
Checkpoint Meeting Module 1  
Student Acknowledgement Statement Module 1  
Module 2 Introduction and Competencies  
Chapter 19 - Reading Day  
Generics - Fundamental  
Generics - Real World  
Programming Exercise 19-9  
Chapter 19 GitHub  
Module 2 Exam  
Checkpoint Meeting Module 2  
Student Acknowledgement Statement Module 2  
Module 3 Introduction and Competencies  
Chapter 20 - Reading Day  
Programming Exercise 20-3  
Programming Exercise 20-9  
Programming Exercise 20-21  
Chapter 20 GitHub  
Chapter 24 - Reading Day  
Programming Exercise 24-1  
Programming Exercise 24-3  
Programming Exercise 24-5  
Chapter 24 GitHub  
Module 3 Exam  
Checkpoint Meeting Module 3  
Student Acknowledgement Statement Module 3  
Module 4 Introduction and Competencies  
Chapter 21 - Reading Day  
Programming Exercise 21-7  
Programming Exercise 21-9  
Programming Exercise 21-11  
Chapter 21 GitHub

Module 4 Exam  
Checkpoint Meeting Module 4  
Student Acknowledgement Statement Module 4  
Module 5 Introduction and Competencies  
Chapter 22 - Reading Day  
Programming Exercise 22-1  
Programming Exercise 22-3  
Chapter 22 GitHub  
Chapter 23 - Reading Day  
Programming Exercise 23-3  
Programming Exercise 23-7  
Chapter 23 GitHub  
Module 5 Exam  
Checkpoint Meeting Module 5  
Student Acknowledgement Statement Module 5  
Module 6 Introduction and Competencies  
Chapter 32 - Reading Day  
Programming Exercise 32-3  
Programming Exercise 32-13  
Chapter 32 GitHub  
Chapter 33 - Reading Day  
Programming Exercise 33-1  
Programming Exercise 33-9  
Chapter 33 GitHub  
Module 6 Exam  
Checkpoint Meeting Module 6  
Student Acknowledgement Statement Module 6  
Module 7 Introduction and Competencies  
Chapter 25 - Reading Day  
Programming Exercise 25-1  
Programming Exercise 25-3  
Programming Exercise 25-11  
Chapter 25 GitHub  
Module 7 Exam  
Checkpoint Meeting Module 7  
Student Acknowledgement Statement Module 7  
Module 8 Introduction and Competencies  
Chapter 31 - Reading Day  
Programming Exercise 31-17  
Programming Exercise 31-20  
Programming Exercise 31-22  
Chapter 31 GitHub  
Module 8 Exam  
End of Course Survey  
Course Completion Checkpoint Meeting  
End of Course Student Acknowledgement Statement

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*Subject to change. Please consult your Canvas course for the most current instructions and updates.*

## Classroom Hours

Mo, Tu, W, Th  
8:00 AM - 11:00 AM  
12:00 PM - 3:00 PM  
4:00 PM - 7:00 PM

Friday  
8:00 AM - 11:00 AM  
12:00 PM - 3:00 PM

For a full list of course hours visit: [Course Schedule](#)

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## Instructor Contact Information

Jason Adams — jadams@stech.edu  
Dallin Savage — dsavage@stech.edu  
Elie Wamana — ewamana@stech.edu

Office Hours: By appointment

Email is the preferred method of communication; you will receive a response within 24 hours during regular business hours.

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## Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- [stech.instructure.com](http://stech.instructure.com)
- For Canvas passwords or any other computer-related technical support contact Student Services.
- For regular Hours and Weekdays call (435) 586 - 2899.
- For after Hours & Weekends call (435) 865 - 3929 (Leave a message if no response).

Course Policies

**Grading All Students:** This course is pass or fail. All assignments in this course require 100% score with unlimited submissions. All quizzes in this course require a minimum score of 80%. Each module of this course will contain at least one quiz. There will be a final project at the end of this course to show mastery of material. There is a student/teacher checkpoint meeting at the end of each module. You are required to keep your progress at a 67% minimum throughout the program. Progress is determined by the number of completed module hours (15 hours per module) divided by the number of enrolled hours.

**Iron County High School Students:** In addition to the above information, Iron County students have the following policies. Your progress grade will be submitted every Friday to PowerSchool. You must maintain a progress percentage of 67% or over per quarter to stay in the course. You will receive a No-Grade (NG) in the course until all course fees are paid.

**Attendance All Students:** You are required to keep your attendance at a 67% minimum throughout the program. Attendance is determined by the number of attended hours divided by the number of enrolled hours. You must complete this program within 150% estimated program length. You are permitted one 15 minute break every 90 minutes. If you take more than one break in a 90 minute period or your break lasts longer than 15 minutes, your attendance will be penalized. As per Southwest Tech policy, 10 consecutive absences will lead to being withdrawn from the program. Please notify your instructors about absences as soon as possible. If absence is due to illness, please email your instructors prior to end of day.

**Iron County High School Students:** In addition to the above information, Iron County students must maintain an attendance percentage of 67% or over per quarter to stay in the course.

**Cell Phone/Electronics:** Cell phones cannot be used during class time. In the lab, the PCs are reserved for students in IT courses. All students can use the iMacs, which run OSX, Windows, and Linux operating systems. You may bring your personal computers to class. You must be on topic in the lab while clocked-in. Industry Environment Computer Science typically is very sedentary. This means you may sit at a desk for long hours. Be sure to move and get what exercise you can.

High School Power School Grades: Quarter student grades will be determined by student progress percentage. Faculty will use the higher percentage of either 1) quarter progress, or 2) cumulative progress for the current training plan year. The progress percentage will be used with the grading scale to determine the minimum grade. High School Grade Scale: The following grading scale will be used to determine a letter grade from the progress percentage:

- |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| • A : 94 - 100% | • B : 83 - 86%  | • C : 73 - 76%  | • D : 63 - 66%  |
| • A- : 90 - 93% | • B- : 80 - 82% | • C- : 70 - 72% | • D- : 60 - 62% |
| • B+ : 87 - 89% | • C+ : 77 - 79% | • D+ : 67 - 69% | • F : 0 - 59%   |

## Additional Information

InformaCast Statement: Southwest Tech uses InformaCast to ensure the safety and well-being of our students. In times of emergency, such as weather closures and delays, this app allows us to promptly deliver notifications directly to your mobile devices. To stay informed and receive real-time updates, we encourage all students to sign up for notifications. Your safety is our priority, and staying connected ensures a swift response to any unforeseen circumstances. More information and directions for signing up are available at: <https://stech.edu/emergency-notifications/>

Internet Acceptable Use Policy: The student is expected to review and follow the Southwest Technical College Internet Safety Policy at: <https://stech.edu/students/policies/>

Student Code of Conduct Policy: The student is expected to review and follow the Southwest Technical College Student Code of Conduct Policy at: <https://stech.edu/students/policies/>

Accommodations: Students with medical, psychological, learning, or other disabilities desiring accommodations or services under ADA, must contact the Student Services Office. Student Services determines eligibility for and authorizes the provision of these accommodations and services. Students must voluntarily disclose that they have a disability, request an accommodation, and provide documentation of their disability. Students with disabilities may apply for accommodations, based on an eligible disability, through the Student Services office located at 757 W. 800 S., Cedar City, UT 84720, and by phone at (435) 586-2899. No diagnostic services are currently available through Southwest Technical College.

Safety and Building Maintenance: The College has developed and follows a variety of plans to ensure the safe and effective operation of its facilities and programs. The following plans are available online:

1) Facilities Operations and Maintenance Plan; 2) Technical Infrastructure Plan; and 3) Health and Safety Plan.

Withdrawals and Refunds: Please refer to the Southwest Technical College Refund Policy at: <https://stech.edu/students/policies/>

Any high school or adult student, who declares a technical training objective is eligible for admission at Southwest Technical College (Southwest Tech). Program-specific admissions requirements may exist and will be listed on the Southwest Tech website. A high school diploma or equivalent is not required for admission but is mandatory for students seeking Title IV Federal Financial Aid.

Non-Discriminatory Policy: Southwest Technical College affirms its commitment to promote the goals of fairness and equity in all aspects of the educational enterprise, and bases its policies on the idea of global human dignity.

Southwest Tech is committed to a policy of nondiscrimination. No otherwise qualified person may be excluded from participation in or be subjected to discrimination in any course, program or activity because of race, age, color, religion, sex, pregnancy, national origin or disability. Southwest Technical College does not discriminate on the basis of sex in the education programs or activities that it operates, as required by Title IX and 34 CFR part 106. The requirement not to discriminate in education programs or activities extends to admission and employment. Inquiries about Title IX and its regulations to STECH may be referred to the Title IX Coordinator, to the Department of Education, and/or to the Office for Civil rights.

If you believe you have experienced discrimination or harassment on our campus, please contact the Title IX Coordinator, Cory Estes: [cestes@stech.edu](mailto:cestes@stech.edu), (435) 865-3938.

For special accommodations, please contact the ADA Coordinator, Cyndie Tracy: [ctracy@stech.edu](mailto:ctracy@stech.edu), (435) 865-3944.

Southwest Technical College

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