

**Finance 1380 (QS)
Financial Mathematics
3.0 Credit Hours, Fall 2024
Department of Finance
Salt Lake Community College**

Course Description:

- Finance 1380 is applied Mathematics for the Finance, Business, Accounting, Marketing, Fashion, Fitness, & Family Studies Programs. In-field topics studied include percentages & retail markups, cash & trade discounts, simple & compound interest, annuities & sinking funds, mortgage & installment loans, ratio & financial statement analysis, investments & valuation, depreciation & statistics.

Student Objectives & Outcomes:

- **Think Critically** - Students will demonstrate deductive reasoning (logic) through problem based technical applications of mathematics to analyze their specific field's pertinent problems. This analysis and problem solving includes field-based exercises and simple case studies of financial markets, of business balance sheets and general ledgers, of calculations of trade and cash discounts, of retail markups and markdowns, of simple interest promissory notes, of compound interest in investments, of mortgages and annuities. These as well as many other financial mathematic applications provide the necessary field-based opportunities for students to gain experience and necessary background to expand their critical thinking.
- **Perform Area/Field-Specific Mathematical Problem Solving** – Through various learning strategies students of Financial Mathematics 1380 will demonstrate problem solving competency in both written and verbal submissions. Problem solving will include their knowledge of percentages and proportions, of trade and cash discounts, of retail markups and markdowns, of breakeven analysis and simple interest, of simple and compound discount, of ordinary annuities and annuities due, of various mortgage calculations and amortization, of installment lending and repayment analysis, of ratio analysis and various accounting depreciation methods, of investment analysis of stocks and bonds and of solving basic descriptive statistic problems and standard deviation.
- **Communicate Effectively** – Financial Mathematics 1380 students are immersed in real world area/field specific problem case studies and detailed life-like examples. Students are called upon to communicate their understanding of both the problem and the solution to these within groups, in classroom presentations, in classroom response, and in descriptive mathematical terms,

and in critical evaluation of problems presented and discussed. Peer and instructor evaluation and feedback is a regular occurrence in classroom and online delivery.

- **Utilize Conceptual Theory** – Students of Financial Mathematics will gain the ability to recognize the proper financial mathematics context for applying proportions and percentages, time-value applications, financial statement ratios, and statistical concepts and demonstrate a basic understanding of why specific mathematical processes work.
- **Utilize Visual Interpretations** – Students of Financial Mathematics 1380 will demonstrate their ability to read, and interpret various charts, graphs, and symbols commonly used in finance and financial management and integrate proportions, percentages, ratios, relative values, and basic descriptive statistics into their analysis.
- **Technology** – Students of Financial Mathematics 1380 will learn the proper context, application and use financial calculators and computer based financial spreadsheets.

Textbook Requirement:

1.) **Practical Business Math Procedures, 11th-13th edition**, Slater, Jeff and Wittry, Sharon, McGraw-Hill. See SLCC Bookstore or Used books @ Amazon.com or Cheapbooks.com.

Calculator Requirement:

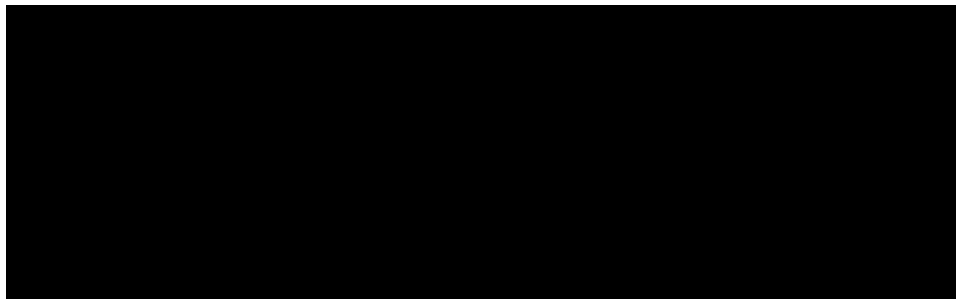
Students are required to utilize a financial calculator for this course and/or Excel. The recommended calculators are the Texas Instruments BAII Plus, the Hewlett Packard HP10BII, or the HP19B. These may be imaged on your smartphones or are available for purchase at SLCC Bookstore or places like Walmart, Target, or Amazon.com for around \$25-\$35.

Technical Help:

Recommended Browser: [Chrome by Google.com](http://Google.com)

Instructor Contact Information:

Instructor Name:
Email:
Phone:
Office:
Consultation:



Chapter and Course Assessments

1. Chapter Homework: Canvas	10 @10pts.ea.	100 points
2. Midterm Examinations.	3-Midterms @ 100-Points each:	300 points
3. Finance 1380 Comp. Final	Internet Proctored	100 points
4. Participation	Classroom/Discussions	100 Points
5. Signature Assignment	Fin 1380 Applied/Analyzed	100 points

Total Points

700 Total

1. Chapter Homework: Each assigned chapter provides you with an assessment tool in the form of a Canvas quiz. Each Canvas quiz allows for one retake. Each Chapter quiz earns up to 10-points. Highest scores are kept.

2. Midterms: Finance 1380 is divided into 3-Units with each Unit providing you a Midterm evaluation. The Midterms are to be taken using an Internet Proctored computer w/webcam.

3. Final Exam: Finance 1380 students must sit for a comprehensive final exam which will be equally weighted per chapter covered during the semester.

4. Participation: Each student is expected to carry their share of classroom engagement through both individual and group participation. Each student will be awarded points based upon the instructor's objective/subjective assessment of the student's participation.

5. Signature Assignment: The Signature Assignment provides each student an opportunity to demonstrate their understanding of an important application of Financial Mathematics by creating a personalize financial plan! This personalized plan **when posted to the student's e-portfolio**, will represent a meaningful demonstration of their understanding of financial mathematics applied and facilitate the achievement of personal financial independence. The **Signature assignment must be posted to you personal ePortfolio. Please carefully read the following "General Education ePortfolio Syllabus Statement:**

General Education ePortfolio Syllabus Statement

Each student in General Education courses at SLCC maintains a General Education ePortfolio. Instructors in every Gen Ed course will ask you to put at least one assignment from the course into your ePortfolio, and accompany it with reflective writing. It is a requirement in this class for you to add to your ePortfolio, and this syllabus details the assignments and reflections you are to include. Your ePortfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. When you finish your time at SLCC, your ePortfolio will then be a multi-media showcase of your educational experience. For detailed information visit:

<https://www.slcc.edu/eportfolio>

Starting Fall 2016, all students new to SLCC will use Digication as their ePortfolio platform. Any students who have created ePortfolios prior to Fall 2016 on other

platforms will be allowed to continue using those platform. You only need to create one ePortfolio for all your General Education courses. For Digication tutorials to get started, please go to: <https://slcc.digication.com/slccnewdigicationhelpsite/beginning-tutorials>

After creating your ePortfolio, please link your ePortfolio URL to your MySLCC account by following these directions: copy the URL in the web address bar for your Welcome page (e.g. "slcc.digication.com/john-smiths-eportfolio") > log into my.slcc.edu > click on the Academics & Records tab > locate the ePortfolio section on the bottom right-side of the page > click Submit ePortfolio > on the left side of the page under General Education ePortfolio click Submit > paste the URL for your ePortfolio's Welcome page into the blank box underneath Enter ePortfolio URL > click Save.

If you would like in-person help with your ePortfolio please visit an ePortfolio Lab on the Taylorsville-Redwood, Jordan, or South City Campus during business hours, and staff will help you. No appointment necessary. You can also make an online or phone appointment with a lab specialist. For lab hours, locations, and appointments please look at the following site: <https://www.slcc.edu/eportfolio/remote.aspx>

Questions regarding the ePortfolio can be directed to <https://www.slcc.edu/eportfolio/contact.aspx>

Grading: Your final grade will be determined from the following scale:

Grade	Score%	GPA	Grade	Score%	GPA	Grade	Score%	GPA
A	93-100	4.0	B-	80-82	2.7	D+	68-69	1.3
A-	90-92	3.7	C+	78-79	2.3	D	63-67	1.0
B+	88-89	3.3	C	73-77	2.0	D-	60-62	0.7
B	83-87	3.0	C-	70-72	1.7	E	0-59	0.0

Reading and Curriculum Outline:

Week

- One Course Introduction.
e-Portfolio Introduction
Chapter 6: Percentages & Their Applications
- Two-Three Chapter 6 Percentages & Their Applications (Cont.)
- Four Chapter 7: Trade and Cash Discounts
- Five Chapter 8: Mark-ups, Markdowns, Break-Even Analysis
- Six [Midterm 1: Ch.6-8: Internet Proctored](#)
[Signature Assignment: Part A Due](#)

Week

<u>Seven</u>	Chapter 10: Simple Interest
<u>Eight</u>	Chapter 11: Simple Discount
<u>Nine</u>	Spring Break
<u>Ten</u>	Chapter 12: Compound Interest and Present Value
<u>Eleven</u>	Midterm 2: Ch. 10-12: Internet Proctored Signature Assignment: Part B Due
<u>Twelve</u>	Chapter 13: Annuities & Sinking Funds
<u>Thirteen</u>	Chapter 14: Installment Loans
<u>Fourteen</u>	Chapter 15: Mortgage Loans
<u>Fifteen</u>	Chapter 21: Investments
<u>Sixteen</u>	Midterm 3: Ch. 13-15 & 21: Investments Signature Assignment: Part C Due
<u>Sixteen</u>	Final Examination: Internet Proctored

Finance 1380 Signature Assignment

Finance 1380 Signature Assignment Part A

Each of the following sections will earn points for completeness, accuracy, and critical self-evaluation, and reflective commentary.

A1. Create a personal cash-flow statement. For the latest month past, itemize your income and expenses using your gross income per month as the basis of your evaluation. Your expenses should be broken down into categories of Fixed Expenses such as rent, loan payments, etc. and Variable Expenses such as food, medical expenses, clothing, transportation expenses, entertainment etc. Express all expenses including taxes + withholding as a percent of gross Income. **Illustrate your cash flow statement along with your percentage calculations.**

A2. Reflect on your spending behaviors and comment on any surprises that you may have discovered. (2 paragraph minimum)

A3. Create a Personal Balance Sheet. A balance sheet should be constructed as of the beginning or end of a month and reflect the following calculation: **Assets – Liabilities = Net Worth**. Assets should be listed at market value (even if you have a loan for the asset) and include things like checking accounts, savings accounts, investment accounts, your home that you own, electronic equipment, sporting equipment, automobiles, furniture, appliances, etc. Total your asset values. This asset total is the basis for your balance sheet evaluation. Liabilities (debts) include credit card balances, loan balances for cars, appliances, furniture, student loans, IOU's to parents and friends, home loans, etc.. Net Worth is the difference between total assets and total liabilities and often is a negative number in the case of students especially. **Illustrate your balance sheet along with your percentage calculations as follows:**

1. Express all assets as a percent of total assets
2. Express all liabilities as a percent of total assets.
3. Express net worth a percent of total assets.
4. **Reflect** on your accumulated assets. **Critically analyze your asset accumulation** as it represents how you have spent your income up to this point in your life! Additionally, **analyze your liabilities** and assess your comfort with your current debts and reflect on the opportunity costs of debt. Some debt may be worthy of its cost, and some may not be worthy of the interest expense incurred. (2 paragraph min.)

A4. Create a projected monthly spending plan or budget. Based upon your cash-flow statement in A1 above, create a spending plan for a typical month for you. The spending plan should include future expected monthly net income as well as anticipated expenditures. Additionally, you should include monthly savings allocations for such necessary categories as emergency savings, next semester's tuition, auto maintenance, retirement savings, vacation savings, etc. Express planned expenses and allocation amounts as a percent of expected gross income.

A5. Reflect on the value of creating a spending plan in advance of your actual spending. Why would a spending plan be important to you as you? What would be the challenges you might expect as you attempt to live within the constraints of your spending plan? (2-Paragraphs minimum)

A6. Post your assignment to your e-Portfolio. Submit your e-Portfolio URL complete with Signature Assignment for Finance 1380.

Each of the following sections will earn points for completeness, accuracy, and critical self-evaluation and reflective commentary.

Finance 1380 Signature Assignment Part B

B1. Create an estimated retirement budget using a compound interest inflation rate of 3%.

1 Estimate a retirement date based upon your projected retirement date 2053, 2063 or 2073. Annualize your monthly spending and income from A4 above. Once annualized, adjust each income and expense category to account for inflation estimated at 3% compounded annually each year until your estimated retirement either 30, 40, or 50 years from now. For example, your food expenditures may have been \$6,000 annually. With inflation at 3%, and retirement 50-years away, your annual food expenditures may grow to: $\$6,000(1.03)^{50} = \$26,303.44$, due to inflation! Your other spending categories will also grow due to inflation. Please illustrate these as well! **(Show your formula or calculator calculations)**

2. **Reflect** on your findings regarding the impact on inflation as it relates to your income requirements and as it relates to you projected expenditures. (1-paragraph minimum)

3. **Comment** on which expenditure categories may increase/decrease upon your retirement. (One paragraph minimum)

4. **Reflect** on the effect your projected expenditures on your retirement planning? (One Paragraph minimum)

B3. Calculate Income and expenses for each year of retirement.

1. **Calculate** projected income requirements and expenses for each year of retirement by adding 3% (estimated inflation rate) annually to the estimated annual income and annual expenses that you calculated for the year of your retirement. Do this for each of the 30-years of retirement. Add 3% to each expense for each year of retirement. This means you will have projections for annual income and annual expenses for each of the 30-years.
2. **Reflect** on the challenges of overcoming inflation at 3% during your retirement years. (one paragraph minimum)

B4. Post your Signature Assignment Part B to your e-Portfolio. Submit your e-Portfolio URL complete with Finance 1380 Signature Assignment Part B.

Finance 1380 Signature Assignment Part C:

C1. Assume a retirement period of 30-years. Additionally, assume that over the 30-years of retirement you are able to earn a weighted average of 7% compounded annually on your retirement “nest egg” through investing in bonds, stock, and CD's. Using this rate, discount the **total expenses** for each of the 30-years you found in part B3 back to the date of your retirement. For example, if your inflation adjusted total expenses for the last

3-years of retirement (years 28, 29, and 30) totaled \$200,000, \$206,000, and \$212,180, respectively, due to inflation's effects, discount these amounts back to the date of your retirement using the present value formula. For the 28th year: $\$200,000/(1.07)^{28} = \$30,080.44$. For the 29th year: $\$206,000/(1.07)^{29} = \$28,955.94$. For the 30th year: $\$212,180/(1.07)^{30} = \$27,873.47$. If you add these three discounted values, they total \$86,909.85. That means a deposit of \$86,909.85 invested at retirement earning 7% compounded annually will grow sufficiently to withdraw \$200,000 in 28-years, then \$206,000 the next or 29th year of your retirement, then \$212,180 the final or 30th year of your retirement. You need to do this for each of the 30-years then add the total of the discounted values for each of the 30-years. This will become your required "nest-egg" at retirement!

C2. Take the total of the discounted expenses you found in C1 as your future value or nest egg at retirement and create a sinking fund for yourself with monthly payments or a monthly investment at the end of each month in order for you to meet the sinking fund goal at retirement. Assume a weighted average nominal rate of 12% compounded monthly from now until retirement (Assumes you are 100% in Stock). **Find the monthly investment at the end of each month required for the following years you may be employed before retiring using the formula for sinking fund for the following periods (illustrate your formula or calculator use)**

- a. 50 - years until retirement or 600 months.
- b. 40 - years until retirement or 480 months.
- c. 30 - years until retirement or 360 months.
- d. 20 - years until retirement or 240 months.

C3. Comment and reflect on the rising opportunity costs of investing for retirement if you begin investing with 50-years to retirement? If you begin investing with 40-years to retirement? If you begin investing with 30-years to retirement? If you begin investing with 20-years to retirement? (3-paragraph minimum)

C4. Reflect on the benefits of starting early vs starting later in planning on retirement. (2-paragraph minimum)

C5. Is planning for retirement and its opportunity costs and sacrifices worth the effort? Reflect and evaluate the Why's and the Why not's. (2-paragraph minimum)

C5. Post your Signature Assignment to your e-Portfolio. Submit your Signature assignment via the URL for you e-Portfolio.

***Please consult the following rubric that relates to the completeness and grading of Signature Assignment:**

Reflective Writing for SLCC's Gen Ed ePortfolio: A Commonsense Rubric by David Hubert. Appended by Dennis Wilson for Fin 1380.

Criteria	Levels of Performance			
	Exceeds Expectations	Meets Expectations	Progressing Towards Expectations	Clearly Below Expectations
Calculation Accuracy and completeness of tables and illustrations.	Correct use of formulae for percentages, time value, etc. complete with illustrative tables, charts and annotation.	Correct use of formulae for percentages, time value of money etc. Incomplete tables, charts, etc.	Correct use of formulae for percentages, time value of money etc. but no illustrative tables or charts.	Incorrect use of formulae for percentages and time value of money.
Context and Reference	The writer clearly understands that s/he is writing for an audience beyond the instructor, and therefore sets the context for the assignment and the reflection prompt. The writer refers to specific features of the work s/he turned in.	The writer generally recognizes that s/he is writing for an audience beyond the instructor, and therefore sets the context for the assignment and the reflection prompt. The writer refers to specific features of the work s/he turned in.	The writer makes some attempt to set the context. S/he makes vague references to the work s/he turned in.	The writer jumps right into the reflection without setting the context, and s/he makes no references to the work s/he turned in.
Depth of Reflection	The writer directly addresses the reflection prompt(s) given by the instructor, elaborates his/her points, makes real connections between the assignment and his/her learning, highlights new insights and perspectives, and/or uses techniques such as questioning, comparing, interpreting, and analyzing.	The writer addresses the reflection prompt(s) given by the instructor, and does a fairly good job with elaboration, making connections, offering new insights and perspectives, and/or uses techniques such as questioning, comparing, interpreting, and analyzing.	The writer partially addresses the reflection prompt(s) given by the instructor, and fails to sufficiently elaborate his/her points. S/he makes few connections, offers few insights and perspectives, etc.	The writer fails to address the reflection prompt(s) given by the instructor. The reflection piece contains no elaboration and is too short.
Conventions of Standard Edited English	The writer demonstrates a solid grasp of standard writing conventions	The writer usually demonstrates a good grasp of standard writing	The writer shows some control over standard writing	Errors in spelling, punctuation, capitalization,

	(e.g., spelling, punctuation, capitalization, sentence structure, word choice, paragraphing) and uses conventions effectively to enhance readability. Errors are practically non-existent.	conventions and uses conventions effectively to enhance readability. The presence of few errors makes the piece generally enjoyable to read.	conventions. Conventions are sometimes handled well and enhance readability; at other times, errors are distracting and impair readability.	usage, grammar and paragraphing repeatedly distract the reader and make the text difficult to read.
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Notes for Students

Language Use--It's very difficult to describe the differences between engaging writing that conveys a sense of voice and its opposite, but every one of your instructors can recognize the former as distinct from--and better than--the latter. In strong reflective writing, a bit of your personality and character should shine through to the reader due to the distinctive way you phrase your thoughts and due to the choice of words you use. That's your "voice." Unlike in most signature assignments, it's okay to write in first person in your reflective writing. So you can write "I think" this and "I noticed" that in your reflective writing. Engaging writing uses language that is interesting, compelling, and captivating; it pulls the reader into the mind of the writer, instead of being a stale, forgettable recitation of facts.

Context and Reference--Your instructor knows about your work and the reflective writing accompanying it, because s/he made the assignment. However, other people with whom you share your ePortfolio will not know the context of each page in your ePortfolio. If you jump right into your reflective writing without setting the proper context, most readers are going to be confused. At some point in your reflective writing (usually in the opening sentences) you need to encapsulate the assignment and the reflective writing prompt that have combined to elicit your brilliant thoughts. Try to do this in an imaginative way, rather than writing something like "For this class I had to write an essay about George Orwell's *1984*, and now I'm going to reflect on how my essay is a good example of critical analysis." Boring.

In addition to setting the context, effective reflective writing almost always makes reference(s) to specific elements of your work on the signature assignment(s). These references to your work constitute good evidence for the claims you are making in your reflective writing.

Depth of Reflection--First of all, make sure you address the reflection prompt given to you by the instructor. Elaborate your points with analysis, connection-making, questioning, comparisons, interpretations, and insights about yourself, your learning, or the wider world that are initiated by the assignment and the reflective writing prompt. Reflective writing is difficult for many of us; it takes a certain amount of courage, so go ahead and risk a little by pushing yourself as you translate your thoughts into writing.

Conventions of Standard Edited English--Your ePortfolio is a formal presentation of your academic self that you share with SLCC instructors, friends, family, scholarship committees, and possibly others. Therefore you want to ensure that not only are the

artifacts in your ePortfolio representative of your best work on signature assignments, but that your reflective writing is also free from obvious mistakes. Don't let simple mistakes detract from the quality of your reflection.

Important Student Information

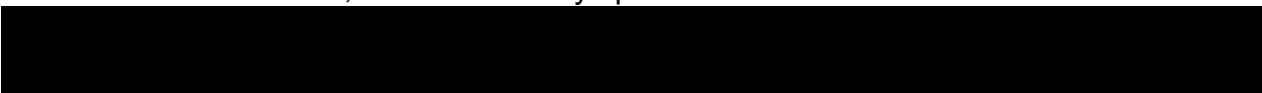
I. Title IX Statement:

Title IX of the Educational Amendments of 1972 prohibits discrimination based on sex in any educational institution that receives federal funding. Salt Lake Community College does not tolerate sex discrimination of any kind including sexual misconduct; sexual harassment; relationship/sexual violence and stalking. These incidents may interfere with or limit an individual's ability to benefit from or participate in the College's educational programs or activities. If you have questions or concerns regarding your rights or responsibilities, or if you would like to file a Title IX complaint please contact:

Kenneth Stonebrook, J.D., Title IX Coordinator Salt Lake Community College,
Taylorsville Redwood Campus – STC 276A

(801) 957-5027 ken.stonebrook@slcc.edu Online Reporting Form:
<http://www.slcc.edu/eo/title-ix/complaint.aspx>

Students may also report incidents to an SLCC faculty or staff member, who are required by law to notify the Title IX Coordinator. If a student wishes to keep the information confidential, the student may speak with staff members of the Center

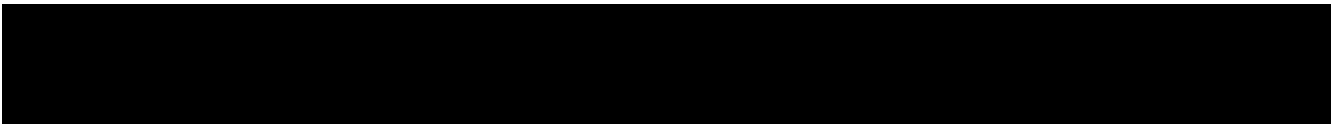


Student Code of Conduct

Students are expected to follow all provisions of the Student Code of Conduct available here: http://www.slcc.edu/policies/docs/Student_Code_of_Conduct.pdf

II. DRC Syllabus Statement:

SLCC values inclusive learning environments and strives to make all aspects of the College accessible to our students. If you have a disability and believe you need accommodations to improve access to learning materials or the learning



III. GENERAL EDUCATION STATEMENT

This course is part of the General Education Program at Salt Lake Community College. Designed to teach the information and skills required by the discipline, General Education courses also help develop vital workplace skills and teach strategies and skills for life-long learning. While the subject of each course is important and useful, we become truly educated through making connections of such varied information with the different methods of organizing human experience practiced by different disciplines. Therefore, this course, when combined with other General Education courses, will enable you to develop broader perspectives and deeper understandings of your community and the world, as well as challenge previously held assumptions about the world and its inhabitants. You will also explore a wide variety of topics with an eye toward discovering new interests and uncovering new talents.

The General Education program teaches basic skills as well as broadens a student's knowledge of a wide range of subjects. Education is much more than the acquisition of facts; it is being able to use information in meaningful ways in order to enrich one's life. The General Education program focuses on communication, creativity, and critical thinking skills and along with the substance of the course's information, an appreciation of the esthetics of the area of study and its connection to the larger social web. Fin 1380 fulfills the **Quantitative Literacy** requirement for General Education.

General Education E-Portfolio Statement

(E-Portfolio Lab: LIB 047, M-R 8 a.m. - 4:30 p.m., F 8 a.m. - 1:00 p.m.)

General Education e-Portfolio—Each student in General Education courses at SLCC maintains a General Education e-Portfolio. Instructors in every Gen Ed course will ask you to put at least one assignment from the course into your e-Portfolio, and accompany it with reflective writing. **It is a requirement in this class for you to add to your e-Portfolio**, and this syllabus details the assignments and reflections you are to include. Your e-Portfolio will allow you to include your educational goals, describe your extracurricular activities, and post your resume. When you finish your time at SLCC, your e-Portfolio will then be a multi-media showcase of your educational experience. For detailed information visit <http://www.slcc.edu/gened/eportfolio>.