COURSE SYLLABUS
COSC 2436 73426

Programming Fundamentals III

This course syllabus is intended as a set of guidelines for (Course). Both North Lake College and your instructor reserve the right to make modifications in content, schedule, and requirements as necessary to promote the best education possible within prevailing conditions affecting this course.

Instructor Information:

Shawn Meng
smeng@dcccd.edu
972-213-5004

Course Information

Course title: PROGRAMMING FUNDAMENTALS III
Course number: COSC 2436
Section number: 73426
Credit hours: 4
Class meeting time: On-line
Course description: This course does NOT teach any specific programming language. This course provides students an introduction to algorithms and data structures. The course emphasizes the application of data structures. The goals include each of the following: understanding of classic approaches to design of algorithms, understanding of particular algorithms and data structures that have varied and wide applications. In addition, the course provides the knowledge of basic analysis techniques by applying mathematical skills to find asymptotic complexity of algorithms, improve programming skills, especially data structures and graphs.
Course prerequisites: Completion of COSC 1436 or COSC 1437 or equivalent course or demonstrated competence approved by the instructor is recommended. Computer keyboarding skill is highly recommended

Required or Recommended Textbooks and Materials

Semester Specifics:
Your instructor is _______Shawn Meng____________________

Instructor’s email address: smeng@dccc.edu______________

Telephone number ___972-213-5004______________

Best time to contact instructor is: send email____________
Course Objectives

The course focuses on design and analysis of algorithms with an emphasis on data structures.

Specific Course Learning Outcomes

- List the major principles of software engineering, discover what an algorithm is.
- Analyze and understand the basic sorting algorithms
- Document, debug, compile, and run a simple assembly program
- Understand the order of growth of the running time of an algorithm, order notation ($O, o, \Omega, \Theta$)
- Use recurrences to express the order of growth of an algorithm
- Use probabilistic analysis and understand Randomized algorithms
- Understand and use Heapsort
- Explain and analyze Quicksort, understand its worst case running time
- Explain the basic Linear time sorting algorithms (decision tree, counting sort, radix and bucket sort)
- Create, initialize, and use elementary data structures stacks, queues, and trees
- Create, initialize, and use hash functions and tables
- Define and implement binary search trees
- Implement optimal operations on binary trees
- Understand and contrast between various sorting algorithms

Course Outline

Reading/Lecture Class Schedule:

<table>
<thead>
<tr>
<th>WEEK</th>
<th>ASSIGNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chapter 1, The Role of Algorithms in Computing</td>
</tr>
<tr>
<td>2</td>
<td>Chapter 2, Getting Started</td>
</tr>
<tr>
<td>3</td>
<td>Chapter 3, Growth of Functions</td>
</tr>
<tr>
<td>4</td>
<td>Chapter 4, Recurrences</td>
</tr>
<tr>
<td>5</td>
<td>Chapter 4, Recurrences</td>
</tr>
<tr>
<td>6</td>
<td>Chapter 5, Probabilistic Analysis and Randomized Algorithms</td>
</tr>
<tr>
<td>7</td>
<td>Chapter 6, Heapsort</td>
</tr>
<tr>
<td>8</td>
<td>Chapter 7, Quicksort</td>
</tr>
<tr>
<td>9</td>
<td>Chapter 8, Sorting in Linear Time</td>
</tr>
<tr>
<td>10</td>
<td>Chapter 9, Medians and Order Statistics</td>
</tr>
<tr>
<td>11</td>
<td>Chapter 10, Elementary Data Structures</td>
</tr>
<tr>
<td>12</td>
<td>Chapter 11, Hash Tables</td>
</tr>
<tr>
<td>13</td>
<td>Chapter 12, Binary Search Trees</td>
</tr>
<tr>
<td>14</td>
<td>Chapter 13, Red Black Tree</td>
</tr>
<tr>
<td>15</td>
<td>Chapter 13, Red Black Tree (continued)</td>
</tr>
</tbody>
</table>
Means of Assessment of Course Learning Outcomes
Labs, projects will be assigned as well as on-line discussions, forums and lab presentations.

Evaluation Procedures

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percent of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>60%</td>
</tr>
<tr>
<td>Projects (1-4)</td>
<td>40%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%-100% = A</td>
</tr>
<tr>
<td>80%-89% = B</td>
</tr>
<tr>
<td>70%-79% = C</td>
</tr>
<tr>
<td>60%-69% = D</td>
</tr>
<tr>
<td>&lt;60 = F</td>
</tr>
</tbody>
</table>

Exams and Assignments
There is no exam for this class.

Please refer calendar document for assignments/projects and due date
Discipline/ Course/ Department/Policies
All Lab assignments and/or projects are due at the end of the day as listed in the calendar (i.e. by 5:00 p.m.). Please, check the calendar for details. All projects are due on time a penalty of 10% is deducted for every day. Late lab exercises are not accepted (i.e. will be graded but not reflected in the student’s overall grade).

INSTITUTIONAL POLICIES

DCCCD EMERGENCY OPERATING PROCEDURES
http://video.dcccd.edu/rtv/DO/emergency_dcccd.wmv

ACADEMIC DISHONESTY
The Student Code of Conduct prohibits academic dishonesty and prescribes penalties for violations. According to this code, which is printed in the college catalog, "academic dishonesty", includes (but is not limited to) cheating, fabrication, facilitating academic dishonesty, plagiarism, and collusion".

1) The Vice-President of Academic & Student Affairs may initiate disciplinary proceedings against a student accused of academic dishonesty.

2) Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism and collusion.

3) Cheating on a test includes:
   a) Copying from another student’s test paper;
   b) Using, during a test, materials not authorized by the person giving the test;
   c) Collaborating with another student during a test without permission to do so;
   d) Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of an un-administered test.
   e) Substituting for another student, or permitting another student to substitute for you to take a test; and
   f) Bribing another person to obtain an unadministered test or information about an unadministered test.

4) “Plagiarism” means the appropriation of another’s work (ideas and/or words) and the unacknowledged incorporation of that work in one’s written work offered for credit. Quotes not identified as quotes constitute a form of plagiarism even if the borrowed ideas are documented.

5) “Collusion” means an unauthorized collaboration with another person in preparing written work offered for credit.

Academic dishonesty may result in the following sanctions, including, but not limited to:
1. A grade of zero or a lowered grade on the assignment or course.
2. A reprimand.
3. Suspension from the college.
NOTIFICATION OF ABSENCE DUE TO RELIGIOUS HOLY DAY(S)
Students who will be absent from class for the observance of a religious holiday must notify the instructor in advance. Please refer to the Student Obligations section of the college catalog for more explanation. You are required to complete any assignments or take any examinations missed as a result of the absence within the time frame specified by your instructor.

REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (A430)
North Lake College provides academic accommodations to students with disabilities, as defined under ADA law. It is the student's choice and responsibility to initiate any request for accommodations. If you are a student with a disability who requires such ADA accommodations, please contact North Lake College's Disability Services Office in person (A430) or by phone at 972-273-3165.
http://www.northlakecollege.edu/resources/disability.html

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT OF 1974 (FERPA)
In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), the College may release information classified as "directory information" to the general public without the written consent of the student. Directory information includes: (1) student name, (2) student address, (3) telephone numbers, (4) date and place of birth, (5) weight and height of members of athletic teams, (6) participation in officially recognized activities and sports, (7) dates of attendance, (8) educational institution most recently attended, and (9) other similar information, including major field of student and degrees and awards received. Students may protect their directory information at any time during the academic year. If no request is filed, directory information is released upon written inquiry. No telephone inquiries are acknowledged. No transcript or academic record is released without written consent from the student, except as specified by law.

ADMINISTRATIVE WITHDRAWAL
Students with valid extenuating circumstances may be eligible for an administrative withdrawal by the Dean of the Division in which the course or courses are taught. An administrative withdrawal will not be awarded to students who simply fail to withdraw prior to the last day to receive a “W.” The request for an administrative withdrawal must be made in writing to the Dean of the Division with any supporting documentation attached. This must occur before the last official day of the semester.

DROP POLICY
If you are unable to complete this course, you must officially withdraw by: Thursday, April 16, 2015. Withdrawing is a formal procedure which you must initiate; your instructor cannot do it for you. All Dallas County Community
Colleges charge a higher tuition rate to students registering the third time for a course. This rule applies to the majority of credit and Continuing Education / Workforce Training courses. Developmental Studies and some other courses are not charged a higher tuition rate. Third attempts include courses taken at any DCCCD college since the fall 2002 semester. For further information, go online to: http://www.DCCCD.edu/thirdcourseattempt.

STOP BEFORE YOU DROP
For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops

FINANCIAL AID STATEMENT
Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate are also subject to this policy.

To apply for financial aid in the DCCCD, students must complete FAFSA (Free Application for Federal Student Aid) on the web at: http://www.fafsa.ed.gov

COUNSELING SERVICES (A311)
Counseling services for personal issues are provided to all students currently enrolled at North Lake College at NO CHARGE. These services are provided by licensed professionals who are bound by confidentiality (within ethical parameters). With the assistance of a counselor, students are able to identify, understand, resolve issues and develop appropriate skills. To make an appointment call 972-273-3333 or visit A311.
For additional information, go to: http://northlakecollege.edu/services-and-resources/health-and-wellness/counseling-services/Pages/default.aspx

THE ACADEMIC SKILLS CENTER (ASC)
The ASC is designed to provide the following assistance to students:

- An ESOL lab with computer access.
- Free tutoring for students enrolled in Foreign Language courses.
• The iRead Lab offers individual and small group tutoring, as well as workshops, to help current students improve their reading, study, and test taking skills.
• The Writing Center to help students clarify writing tasks, understand instructors’ requirements, develop and organize papers, explore revision options, detect grammar and punctuation errors, properly use and document sources, and improve their writing skills.
• The Online Writing Lab (OWL) allows students to submit papers to our writing tutors electronically and get feedback within 24-72 hours. The OWL can be accessed through eCampus.
  o After logging on to eCampus, click on the Community Tab at the top.
  o Type “Owl” in the search field and click “Go.”
  o Next, click on the double drop-down arrows next to “NLC-OWL2,” and then click on “Enroll.”
  o Once enrolled, students can receive services from the OWL.
• The Blazer Internet Lounge with 12 computers, additional open seating, and WiFi Internet access.

For more information or to schedule a tutoring appointment, come by A-332 or call 972-273-3089.

TESTING CENTER (A 425)
Monday-Thursday: 8:30 a.m. – 8:00 p.m.
No tests will be issued after 7:00 p.m. Other cut-off times may be in effect for specific exams by the instructor’s direction. All exams collected at 8:00 p.m.
Friday-Saturday: 8:30 a.m.-3:30 p.m.
No tests will be issued after 2:30 p.m. Other cut-off times may be in effect for specific exams by the instructor’s direction. All exams collected at 3:30 p.m.
Sunday – CLOSED

If you instructor requires you to complete an exam in the Testing Center, be sure to have the following information when you request you test:
1. Instructor’s name
2. Subject, course number, and section number (exp: Speech 1311.7011)
3. Exam number (1st, 2nd, 3rd, etc.)
4. Exam deadline (Get this information from your instructor. The testing staff cannot look up this information on computers).

You should also bring the following supplies:
1. Pencil
2. Scantron answer sheet
3. A Test Request Form must be completed before entering the Testing Center.
5. Government or school issued photo identification is required & enforced.
You may not bring personal items into the Testing Center. This includes bags, cell phones, and pagers.

Please show courteous and cooperative behavior while using the services provided by the Testing Center.

DO NOT bring children to the Testing Center. You must make arrangements for the care of your children prior to your exam date. The police department will be notified of any unattended children.

DO NOT take any testing materials with you when you leave the Testing Center. This includes the test, answers, charts, scratch paper. These items will be attached to your test.

Questions? Please visit the Testing Center (A 425) or call 972-273-3160.

**IMPORTANT DATES**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday, November 4, 2014</td>
<td>Schedule becomes “viewable” on web</td>
</tr>
<tr>
<td>Tuesday, November 18, 2014</td>
<td>Priority Registration Begins</td>
</tr>
<tr>
<td>Monday, November 24, 2014</td>
<td>Regular Registration Begins</td>
</tr>
<tr>
<td>Wednesday, January 14, 2015</td>
<td>Registration Ends</td>
</tr>
<tr>
<td>Tuesday, January 20, 2015</td>
<td>Semester Begins</td>
</tr>
<tr>
<td>Monday, February 2, 2015</td>
<td>Certification / Lock Date</td>
</tr>
<tr>
<td>Thursday, February 19, 2015</td>
<td>District-wide Staff Development, NO CLASSES</td>
</tr>
<tr>
<td>Friday, February 20, 2015</td>
<td>District-wide Day-of-Service, NO CLASSES</td>
</tr>
<tr>
<td>BEFORE 5:00pm</td>
<td></td>
</tr>
<tr>
<td>Monday, March 9, 2015</td>
<td>Spring Break Begins, NO CLASSES</td>
</tr>
<tr>
<td>Monday, March 16, 2015</td>
<td>Classes Resume</td>
</tr>
<tr>
<td>Friday, April 3, 2015</td>
<td>Spring Holiday, NO CLASSES</td>
</tr>
<tr>
<td>Thursday, April 16, 2015</td>
<td>Last Day to Withdraw with “W”</td>
</tr>
<tr>
<td>Monday, May 11, 2015</td>
<td>Finals Week begins</td>
</tr>
<tr>
<td>Thursday, May 14, 2015</td>
<td>Spring Semester Ends</td>
</tr>
</tbody>
</table>

**Specific Learning Activities**

*See Appendix A*

**Exemplary Educational Objectives (EEOs)**

1. Discuss computer and communications terminology
2. Evaluate the effects and implications of computers and communication technology on society
3. Demonstrate knowledge of the impact of technology on the individual’s privacy, security, lifestyle, work environment, standard of living, and health.
4. gather information for decision-making
5. Participate in global communities using available technology
6. Create quantitative and qualitative data presentations

Core Curriculum Intellectual Competencies

This course reinforces 1 through 6 of the 6 Core Curriculum Intellectual Competencies defined by the Texas Higher Education Coordinating Board. The CCIC’s identified by the DCCCD which are reinforced by Programming Fundamentals I are as follows:

(The following is a list of the six (6) CCIC’s. List only those for this course.)

1. READING: Reading at the college level means the ability to analyze and interpret a variety of printed materials -- books, articles, and documents.
2. WRITING: Competency in writing is the ability to produce clear, correct, and coherent prose adapted to purpose, occasion, and audience.
3. SPEAKING: Competence in speaking is the ability to communicate orally in clear, coherent and persuasive language appropriate to purpose, occasion and audience.
4. LISTENING: Listening at the college level means the ability to analyze and interpret various forms of spoken communication.
5. CRITICAL THINKING: Critical thinking embraces methods of applying both qualitative and quantitative skills analytically and creatively to subject matter in order to evaluate arguments and to construct alternative strategies.
6. COMPUTER LITERACY: Computer literacy at the college level means the ability to use computer-based technology in communicating, solving problems, and acquiring information.

LEARNING ACTIVITIES, OUTCOMES, AND ASSESSMENT

Learning Activities, Outcomes, and Assessment (Form A)

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Assessment</th>
<th>EEO’s &amp; CCIC’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Short lab and terminology quiz</td>
<td>List the major principles of software engineering, discover what an algorithm is.</td>
<td>Lab-rubric, grading key for the quiz</td>
<td>(CCIs 1-6)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(EEOs 1-5)</td>
</tr>
</tbody>
</table>
### 2. Project and short lab assignments

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Evaluation/Assessment</th>
<th>EEOs and CCICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project s’ rubric and labs’ rubric</td>
<td>Understand and apply the order of growth of the running time of an algorithm, order notation (O, o, Ω, Θ)</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
</tbody>
</table>

### 3. Lab presentation/On-line discussion

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Evaluation/Assessment</th>
<th>EEOs and CCICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubric for a power point presentation and on-line discussion</td>
<td>Understand and contrast between various sorting algorithms</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-6)</td>
</tr>
</tbody>
</table>

#### APPENDIX A

### Specific Learning Activities

<table>
<thead>
<tr>
<th>Learning Activity</th>
<th>Learning Outcomes</th>
<th>Evaluation/Assessment</th>
<th>EEOs and CCICs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab and Terminology Quiz</td>
<td>List the major principles of software engineering, discover what an algorithm is.</td>
<td>Lab-Rubric, grading key</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab &amp; on-line discussions/forums</td>
<td>Analyze and understand the basic sorting algorithms</td>
<td>Rubric for BB discussion</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Labs</td>
<td>Document, debug, compile, and run a simple assembly program</td>
<td>Lab-Rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Labs and/or project</td>
<td>Understand the order of growth of the running time of an algorithm, order notation (O, o, Ω, Θ)</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and ./or projects</td>
<td>Use probabilistic analysis and understand Randomized algorithms</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Learning Activity</td>
<td>Learning Outcomes</td>
<td>Evaluation/Assessment</td>
<td>EEOs and CCICs</td>
</tr>
<tr>
<td>-------------------</td>
<td>------------------</td>
<td>-----------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Labs and/or Project</td>
<td>Understand and use Heapsort</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and/or Project</td>
<td>Explain and analyze Quicksort, understand its worst case running time</td>
<td>Lab and project rubrics</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and lab presentation</td>
<td>Explain the basic Linear time sorting algorithms (decision tree, counting sort, radix and bucket sort)</td>
<td>Lab-rubric and Power Point Presentation Rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Labs and/or project</td>
<td>Create, initialize, and use elementary data structures stacks, queues, and trees</td>
<td>Lab and project rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Labs</td>
<td>Create, initialize, and use hash functions and tables</td>
<td>Lab rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and/or Project</td>
<td>Define and implement binary search trees</td>
<td>Lab and project rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and/or Project</td>
<td>Implement optimal operations on binary trees</td>
<td>Lab and project rubric</td>
<td>(CICs 1-6) (EEOs 1-5)</td>
</tr>
<tr>
<td>Lab and/or Project</td>
<td>Understand and contrast between assembly language and higher level languages</td>
<td>Power Point Rubric and BB discussion rubric</td>
<td>(CICs 1-6) (EEOs 1-6)</td>
</tr>
</tbody>
</table>

**Assessments Tools for Evaluating Learning Activities (Discussion Board, Labs, Lab Presentation and Projects)**

**I. Discussion Board**

1. The Instructor selects a topic, some examples are as follows:
   a. Computer ethics, privacy, viruses, cracking, security issues
   b. E-mail etiquette
   c. Different elements of operating systems
   d. Different components of computer system hardware, software etc…
2. The instructor suggests a site or outlines a method of searching
3. The student researches the topic
4. The student discusses and expresses his/her opinion
5. The student posts the discussion
6. The student reads other people’s postings and comments
7. The student generates a report

**Sample Grading Rubric**

Discussion Points: 0 – 5 points awarded as follows
**Excellent:**
1. The participant addressed all of the issues raised in the discussion question.
2. The participant posted insightful comments and questions that prompted additional discussion.
3. The participant helped clarify other group members’ ideas. If disagreeing with another group member’s ideas, the participant stated his or her disagreement or objections clearly, yet politely.
4. Spelling, punctuation and grammar are consistent with college-level writing.
5. The participant posted initial comments early in the week and responded to at least one other student’s comments during the week. (“I agree” does not constitute an acceptable response.)

**5 pts**

**Good:**
1. The participant was lacking in one of two of the items listed in “Excellent” participation.
2. The participant had to be prompted or coaxed to participate.
3. The participant usually, but not always, expressed her or his ideas clearly.

**4 pts**

**Fair:**
1. The participant was lacking in three of the items listed in “Excellent” participation.

**3 pts**

**Needs improvement:**
1. The participant was lacking in four of the items listed in “Excellent” participation.
2. The participant was reluctant to participate even when prompted.
3. The participant rarely expressed his or her ideas clearly.

**2 pts**

**Unacceptable:**
1. The participant did not post.

**0 pts**

**II. Labs Assessment Tool (Sample Grading Rubric)**

Points are assigned by the evaluator to each of the following as follows:
1. Programming style and standards (10%)
2. Correctness (70%)
3. Readability (5 %)
4. Modifiability (5 %)
5. Robustness (5%)
6. Documentation(5%)

**III. Lab Presentation Assessment Tool (Sample Grading Rubric included)**

1. Select a topic, for example “Survey, compare and contrast procedural and OO languages”
2. Research the topic
3. Discuss and express your opinion
4. Generate a power point presentation
5. Schedule and present it to the class

**Sample Grading Rubric:**

The student will:
<table>
<thead>
<tr>
<th>Description</th>
<th>*Points</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter title of presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add student’s name as footer to slides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply appropriate design template I thought we removed this one</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design templates applied to presentation and slide master according to criteria specified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Create a minimum of seven slides each with main topic and supporting information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apply spell check and grammar check</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Format the most important information so it appears prominently</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title the final slide “Research URLs” citing at least three Web Sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Format all products and book titles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Add, format, align, distribute and group auto shapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert clip art and/or images to support presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use transitions, special effects and timings in slide show</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Import Word table</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insert Excel chart and graphics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Points to be determined by the evaluator
IV. Projects Assessment Tool (Sample Grading Rubric included)

- Projects assignment use some design tools (i.e. pseudo code, UML, flowcharts, IPO) and documentation. Solutions may include but is not limited to the following:
  i. Problem specification
  ii. Problem analysis
  iii. Modular programming analysis
  iv. Data analysis and definition
  v. Algorithm design and implementation
  vi. A programming language
  vii. Classes
  viii. Associations
  ix. Interfaces
  x. Properties
  xi. Behaviors
  xii. Documentation

Sample Grading Rubric

Points are assigned by the evaluator to each of the following:

- Programming style and standards (10%)
- Correctness (70%)
- Readability (5%)
- Modifiability (5%)
- Robustness (5%)
- Documentation (5%)