Course Description, from current graduate catalog
The objectives of this course are to provide basic concepts of computer systems, to introduce computer architecture and to introduce assembly language. Discussion includes internal organization of the computer, techniques for representation of data, assembly language for a particular processor, procedure call and return mechanisms including parameter passing and stack utilization, input/output processing including interrupt handling, and the relationship between high-level languages and machine languages. Several assignments and course participation are required, as are several exams.

Required Text
Find at Cengage: http://www.cengagebrain.com/shop/search/9781305080195
Find at Vitalsource: https://www.vitalsource.com/student-etextbooks [and search by ISBN, Title, or Author]

Course Objectives
- Introduce computer system architecture
- Provide basic concepts of computer systems
- Describe computer hardware and software

Course Expectations
The assignments and grading are intended to
- encourage students’ active participation and class sharing
- challenge and assist students to positively manage their educational and professional development.
- introduce students to the teaching styles used in most Graduate Business Administration Program courses

Course Requirements and Grading

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Points</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-class and D2L Participation. Students are expected to attend and actively participate in each week’s discussion as well as any D2L discussions in a professional manner. Students must complete the required research and be prepared to discuss the reading(s) during class. Four points for each class session.</td>
<td>40</td>
<td>4%</td>
</tr>
<tr>
<td>Textbook Exercises. Submit via D2L dropbox only.</td>
<td>50</td>
<td>5%</td>
</tr>
<tr>
<td>Article Reviews. Reviews are to be completed and posted to the appropriate discussion forum at our D2L course site. See the Course Requirements document for additional details.</td>
<td>50</td>
<td>5%</td>
</tr>
</tbody>
</table>
Technology Project. See the attached Course Requirements document for additional information.

<table>
<thead>
<tr>
<th>Topic and preliminary outline, submit via D2L dropbox only</th>
<th>10</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper, submit via D2L dropbox only</td>
<td>150</td>
<td>15%</td>
</tr>
</tbody>
</table>

Systems Project. See the attached Course Requirements document for additional information.

<table>
<thead>
<tr>
<th>Site and preliminary outline, submit via D2L dropbox only</th>
<th>10</th>
<th>1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper, submit via D2L dropbox only</td>
<td>150</td>
<td>15%</td>
</tr>
<tr>
<td>Presentation</td>
<td>40</td>
<td>4%</td>
</tr>
</tbody>
</table>

Exam 1 (Ch 1—7) to be answered individually. Exam will either be an online test or will be downloaded, answered individually, and submitted via a D2L dropbox. This will be announced closer to the exam’s availability. 250 25%

Exam 2 (Ch 8—14) to be answered individually. Exam will either be an online test or will be downloaded, answered individually, and submitted via a D2L dropbox. This will be announced closer to the exam’s availability. 250 25%

Total 1000 100%

Grading Criteria
At the graduate level, a “B” is considered average and necessary to graduate. “A” level work requires exceptional demonstration of management skills, insight, accurate assessment, justifiable conclusions, recommendations and resources beyond what is presented in class. “B” level work demonstrates performance derived from class. “C” level work is below acceptable graduate level performance and shows less than full application of class requirements. “D” level work shows minimal application of class requirements and “F” is work that fails to demonstrate class requirements.

The following scale will be used: A(95%+), A- (90%-94%), B+(87%+), B(84%+), B- (80%+), C+(77%+), C(74%+), C- (70%+), D+(67%+), D(64%+), D- (60%+), F (below 60%). If you are unsure of any course requirements or anything in the grading scale, please be aware that it is the student’s responsibility to ask for clarification.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage of Total Points</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A/A-</td>
<td>90-100%</td>
<td>Superior performance and exceeds course objectives. The superior level (this is the high A range) assumes that the student justified responses with text and other research resources.</td>
</tr>
<tr>
<td>B+/B/B-</td>
<td>80-89%</td>
<td>Above average performance and exceeds acceptable course objectives. Requires the student to take a position beyond merely a literal answer for the question, with a moderate explanation of why the recommendations were made.</td>
</tr>
<tr>
<td>C+/C/C-</td>
<td>70-79%</td>
<td>Average performance and meets acceptable course objectives. Requires the student to complete the required questions and requirements within an assignment to be completed and submitted within the specified deadline.</td>
</tr>
<tr>
<td>D+/D/D-</td>
<td>60-69%</td>
<td>Below average performance and does not meet course objectives. Did not answer the question or did not provide the appropriate answers within the specified deadline.</td>
</tr>
<tr>
<td>F</td>
<td>below 60%</td>
<td>Failure to meet course objectives.</td>
</tr>
</tbody>
</table>

Policy on Assessment Methods
Grades will be determined from each student’s performance on article reviews, examinations, oral presentations, individual and/or team projects. Impromptu quizzes, in-class, open and/or closed book examinations, and peer evaluations can be expected. No handwritten materials will be accepted for assignments scheduled in advance.

This course will be conducted as a seminar; active participation both in class and in online discussions is expected.
Assignments are due on the date listed in the tentative schedule. Late assignments will be penalized 10% of the point value earned for the assignment for each calendar day the assignment is overdue.

Make-up examinations or assignments must be completed within one week of the scheduled due date. Failure to attend a class does not excuse the student from meeting deadlines for assigned work. The student is responsible for obtaining class notes and handout materials from a classmate for any missed class or portion thereof. Any student who is unsure of this grading scale or course requirements is responsible for clarifying questions with the instructor.

Student Responsibilities
- Students who are not enrolled in class either for credit or audit cannot attend the class and will not receive credit for the course.
- Students may not submit additional work after grades have been submitted to alter their grade (except in cases of temporary grades such as “I”, Incomplete; “X”, Missed Final Exam; “IP”, In Progress).
- Students on academic probation are not eligible for a grade of “I”, Incomplete.

To ensure a comprehensive and authentic education, the student is responsible for planning his/her academic program and progress, and for evidencing academic performance with honesty and integrity. Intended learning cannot be evidenced if one misrepresents the work of others as his/her own. The University encourages students to assist one another (e.g. tutoring, group projects); the student is accountable for work submitted to meet his/her requirements.

Policy on Academic Honesty
To ensure a comprehensive and authentic education, the student is responsible for planning his/her academic program and progress, and for evidencing academic performance with honesty and integrity. Intended learning cannot be evidenced if one misrepresents the work of others as his/her own. The University encourages students to assist one another (e.g. tutoring, group projects); the student is accountable for work submitted to meet his/her requirements.

Academic honesty is expected and required in all academic work. Each student shall be honest in her or her academic work and shall support the honesty of others as stated in the Benedictine University Academic Honesty Policy (http://www.ben.edu/academic_programs/ahp.cfm).

In accordance with the policy of academic honesty, activities such as, but not limited to which are prohibited, include:
- Giving or receiving unauthorized aid on a quiz or examination
- Taking an exam or doing homework assigned for another student, or arranging to have it done
- Plagiarism (submitting the work and/or ideas of others without giving proper credit)
- Falsifying data or other results
- Using material, information, or sources specifically and legitimately restricted by the instructor
- Sabotaging the work of others
- Altering academic records

Evidence of the following behaviors will be construed as violations of academic honesty and will result in a failing grade for that assignment: submitting identical assignments, exams, answers, journal entries or other deliverables; sourcing identical citations, data, tables or quotations; conversations among students during in-class examinations.

Any student who is found to be misrepresenting himself/herself by sending a surrogate to attend class will be immediately dismissed from the program and students will not receive a refund. If the surrogate is a participant in the program, the surrogate will also be dismissed from the class.

The search for truth and the dissemination of knowledge are the central missions of a university. Benedictine University pursues these missions in an environment guided by our Roman Catholic tradition and our Benedictine heritage. Integrity and honesty are therefore expected of all members of the University community, including
students, faculty members, administration, and staff. Actions such as cheating, plagiarism, collusion, fabrication, forgery, falsification, destruction, multiple submission, solicitation, and misrepresentation, are violations of these expectations and constitute unacceptable behavior in the University community. The penalties for such actions can range from a private verbal warning, all the way to expulsion from the University. The University’s Academic Honesty Policy is available at [http://www.ben.edu/AHP](http://www.ben.edu/AHP) and students are expected to read it.

A first violation will result in a score of zero on the assignment. A second violation will result in an ‘F’ in the course. In all cases, violations will be reported to the Provost’s Office as indicated in the Academic Honesty Policy. If you have any questions, please ask.

In addition, TurnItIn may be used with Desire2Learn at the Instructor’s discretion; see [http://turnitin.com/](http://turnitin.com/) for details. TurnItIn provides an originality check for submitted deliverables, which are checked against web pages, student papers, and publications. All individual written assignments will be submitted via a D2L dropbox and, if TurnItIn is used, all work will be submitted automatically to the plagiarism evaluation system to review for obvious plagiarism. Any cases that exceed acceptable limits will not be accepted for a grade at the first occurrence and subsequent occurrences will result in the student receiving an F grade for the course.

**Policy on Electronic Devices**
One aspect of being a member of a community of scholars is to show respect for others by creating and maintaining an environment that is conducive to learning. Due to the distraction that can occur with ringing cell phones or other electronic devices we ask that you set your cell phone/electronic device to mute/silent before each class.

Furthermore, if you use a smart phone or any electronic device in any manner during a test or quiz, the student will receive a zero for that test or quiz. This policy applies to all electronic communication and/or data storage devices.

**Policy on Recording Lectures**
Students are prohibited from audio recording any lecture unless given specific permission. Students are strictly prohibited from video recording any lecture.

**Policy on Special Needs**
If you have a documented learning, psychological, or physical disability, you may be eligible for reasonable academic accommodations or services. To request accommodations or services, please contact Jennifer Golminas in the Student Success Center, Krasa 012, 1.630.829.6512 or jgolminas@ben.edu. All students are expected to fulfill essential course requirements. The University will not waive any essential skill or requirement of a course or degree program.

**Policy on Academic Accommodations for Religious Obligations**
A student whose religious obligation conflicts with a course requirement may request an academic accommodation from the instructor. Students must make such requests in writing by the end of the first week of the class.

**Policy on Class Attendance and Preparation**
Regular attendance is expected. Students are expected to read the assigned material and complete deliverables before class. Students are responsible for what is covered in class. A student is required to contact the instructor in advance if he/she will miss a class session. Although student attendance at all class meetings is required, it is understood that there may be extenuating circumstances that may prevent a student from attending class. Students who miss nine or more contact hours will not receive credit for the course. Such a student will be administratively withdrawn from the course and will be assigned a grade of “F”. Students who are administratively withdrawn because of absences will be required to retake the course at a later date. Students will not receive a refund and must take the course at the tuition rate in effect at the time of the subsequent course enrollment.
**Policy on Withdrawals and Incompletes**

Consistent with our Benedictine University catalog, students have various options to manage courses, subject to instructor approvals. Students are expected to self-manage course registration, schedule changes, and course withdrawals. See instructions for BenUConnect and MyBenU at [http://www.ben.edu/accountlogin.cfm](http://www.ben.edu/accountlogin.cfm).

Incompletes (I’s) are issued to students who cannot finish the designated coursework due to extenuating circumstances. “I’s” are to be issued sparingly: to a student who is doing at least “C” work, who is not on academic probation, and who has a clearly defined plan for completion of coursework with dates recorded on the incomplete request. An “I” must be approved by the course instructor, the department chair, and the Registrar, and must be arranged before the submission of final grades. If the course is not completed within 180 days, the grade is automatically converted to an “F”.

Academic forms may be found at [http://www.ben.edu/campus_resources/registrar/studentforms.cfm](http://www.ben.edu/campus_resources/registrar/studentforms.cfm).

**Library Resources**

As a student at Benedictine University, you have access to the library. See the library website at [http://www.ben.edu/library/](http://www.ben.edu/library/). See the FAQs and Research Guides for specific information on resources. Most databases are available online from on-campus; many are available online from off-campus as well.

The Library also provides students free use of RefWorks, an effective tool for bibliographic citations and proper reference use [http://libguides.ben.edu/refworks](http://libguides.ben.edu/refworks).

Reference librarians are professionals who can assist in learning highly efficient, effective research skills and sourcing, so you are encouraged to meet with them. Conference rooms may be reserved for team meetings. You are encouraged to tour the library while on campus. You may chat with a librarian; see the ‘Chat’ button on most library web pages.

**Use of Information Technology, including University network and D2L**

Access to the University computer network is gained through the use of a login and password. A student login is of the form ‘bnnnnnnn’, where the seven-digit student ID replaces ‘nnnnnnn’. Please login from the University home page using the ‘Account Login’ found at the top right or from [http://ben.edu/accountlogin.cfm](http://ben.edu/accountlogin.cfm). A password may be reset from these login pages. Additional information may be found at [http://www.ben.edu/it/](http://www.ben.edu/it/).

Each student has a Benedictine University e-mail address. All official communications from Benedictine University, Graduate Business Administration Programs, and the Instructor will be sent to the student’s Benedictine University e-mail account. Students should access this account on a regular basis. Information is found at [http://www.ben.edu/it/](http://www.ben.edu/it/) and the ‘Get Started’ tab.

This course will require students to use technology in at least the following ways:

- Students will need reliable Internet and e-mail access.
  - Students will need to check the D2L course site at least daily.
  - Students will need to check e-mail at least daily. The official University e-mail account is strongly encouraged and preferred.
- Students will use D2L, a web-based learning management system.
  - D2L requires use of a full-featured web browser, for example, Firefox and IE.
  - All course content will be posted at D2L, including syllabus, course requirements, presentations, discussion forums, assignment dropboxes, online assignments, and online quizzes.
  - Registered students will have access to a course site shortly before the start of a quarter.
- Students will need a working knowledge of Microsoft Word, Excel 2007 or later, and PowerPoint; these are used extensively in Graduate Business Administration courses.
  - Several on-line technology training modules are available at [http://www1.ben.edu/resources/tutorials](http://www1.ben.edu/resources/tutorials).
Policy on University Closings
A variety of conditions may disrupt normally scheduled classes. These include University closures due to severe weather, building issues (loss of power, water, etc.), and health-related issues, such as flu. See the University emergency preparedness plan at [http://www.ben.edu/emergency/index.cfm](http://www.ben.edu/emergency/index.cfm).

In the case of severe weather, contact the Benedictine University emergency information line at (630) 829-6622 or check [www.emergencyclosings.com](http://www.emergencyclosings.com) or [www.cancellations.com](http://www.cancellations.com). In addition, many radio and TV stations announce closings:

<table>
<thead>
<tr>
<th>Radio/TV Station</th>
<th>Channel</th>
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</thead>
<tbody>
<tr>
<td>WGN Radio 720</td>
<td>NBC 5 Chicago</td>
</tr>
<tr>
<td>WBBM Newsradio 105.9 FM</td>
<td>ABC 7 Chicago</td>
</tr>
<tr>
<td>WKKD 95.9 FM</td>
<td>WGN Channel 9</td>
</tr>
<tr>
<td>WJOL AM 1340</td>
<td>FOX 32 News</td>
</tr>
<tr>
<td>CBS 2 Chicago</td>
<td>CLTV News</td>
</tr>
</tbody>
</table>

Students who register their contact information at [http://www.ben.edu/emergency/benalert.cfm](http://www.ben.edu/emergency/benalert.cfm) will be notified automatically via text, voice, and/or e-mail, as requested.

In the case of a University class cancellation, students are expected to immediately check their D2L News page for instructions. Faculty will provide students with alternate activities so that the learning experience continues and that the required course learning objectives are met. Activities may include a discussion board activity throughout the week, additional content-specific videos to review and discuss, participation in a topic-specific blog, live chat sessions, etc. Students are required to participate in these additional activities. Failure to participate will count as a missed class.

Additional or other procedures may be implemented by the University in the event of an extended closing.

Policy on FERPA
The Family Education Rights and Privacy Act [FERPA], also known as the Buckley Amendment, addresses the issue of student privacy. Although there are many regulations that must be adhered to, FERPA permits some flexibility with regard to how it is administered. Through the enactment of FERPA in 1974, guidelines were established prohibiting institutions from releasing student information to anyone without expressed written permission from the student. This means we cannot discuss student’s schedules, grades, or other specific information related to the student with spouses, family members, or friends.


For more information regarding FERPA, please see [http://www.ben.edu/ferpa/index.cfm](http://www.ben.edu/ferpa/index.cfm).

University Mission Statement
Benedictine University dedicates itself to the education of undergraduate and graduate students from diverse ethnic, racial and religious backgrounds. As an academic community committed to liberal arts and professional education, distinguished, and guided by its Roman Catholic tradition and Benedictine heritage, the University prepares its students for a lifetime as active, informed, and responsible citizens and leaders in the world community.

Office Hours
Please check our D2L course site for any updates to my office hours for Spring Quarter 2016.

Regular office hours: Tuesday 2:45pm—5:45pm and Thursday 2:45pm—5:45pm

In addition to posted office hours, I am available by appointment; please contact me at 1.630.829.6218 or [bozog@ben.edu](mailto:bozog@ben.edu) (preferred) with a detailed message.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic(s)</th>
<th>Reading(s)</th>
<th>Assignment(s)/Deliverable(s)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Pre-Class Assignment</strong></td>
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<tr>
<td></td>
<td></td>
<td>• Read Chapters 1 and 2 in Burd.</td>
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<td></td>
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<td>• Post your first article review to the Session 1 Article Review discussion forum.</td>
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<tr>
<td></td>
<td></td>
<td>• Send e-mail to <a href="mailto:bozog@ben.edu">bozog@ben.edu</a> with name, preferred contact telephone number, preferred e-mail address.</td>
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<tr>
<td></td>
<td></td>
<td>• Review the Tentative Course Schedule for readings and assignments.</td>
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<tr>
<td></td>
<td></td>
<td>• Review our D2L course site.</td>
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</tr>
<tr>
<td>1</td>
<td>03/31</td>
<td>Computer Technology Introduction to Systems Architecture</td>
<td>Ch 1,2</td>
<td>Article review (Ch 1,2)</td>
</tr>
<tr>
<td>2</td>
<td>04/07</td>
<td>Data Representation</td>
<td>Ch 3</td>
<td>Article review (Ch 3,4)</td>
</tr>
<tr>
<td>3</td>
<td>04/14</td>
<td>Processor Technology and Architecture</td>
<td>Ch 4,5</td>
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<tr>
<td></td>
<td></td>
<td><strong>Technology Project: submit topic and preliminary outline by Tuesday, 04/19, via D2L dropbox only</strong></td>
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<tr>
<td>4</td>
<td>04/21</td>
<td>System Integration and Performance Input/Output Technology</td>
<td>Ch 6,7</td>
<td>Ch 4 Problems and Exercises #2,#3</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Technology Project: submit by Tuesday, 04/26, via D2L dropbox only</strong></td>
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<tr>
<td>5</td>
<td>04/28</td>
<td>Data and Network Communication Technology</td>
<td>Ch 8</td>
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<td></td>
<td></td>
<td><strong>Exam 1 (Ch 1—7) take-home exam, submit via D2L dropbox only, due by Sunday, 05/01</strong></td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>05/05</td>
<td>Computer Networks</td>
<td>Ch 9</td>
<td>Systems Project: submit site and preliminary outline by Sunday, 05/08, via D2L dropbox only</td>
</tr>
<tr>
<td>7</td>
<td>05/12</td>
<td>Application Development Operating Systems</td>
<td>Ch 10,11</td>
<td>Ch 8 Problems and Exercises #1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Article review (Ch 8,9)</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>05/19</td>
<td>File and Secondary Storage Management Internet and Distributed Application Services</td>
<td>Ch 12,13</td>
<td>Article review (Ch 10,11)</td>
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<tr>
<td>9</td>
<td>05/26</td>
<td>System Administration</td>
<td>Ch 14</td>
<td>Article review (Ch 12,13)</td>
</tr>
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<td></td>
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<td>Ch 13 Research Problem #4</td>
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<td></td>
<td>Ch 14 Research Problem #3</td>
</tr>
<tr>
<td>10</td>
<td>06/02</td>
<td>Systems Project Presentations</td>
<td></td>
<td>Systems Project: submit by Sunday, 06/05, via D2L dropbox only</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Exam 2 (Ch 8—14) take-home exam, submit via D2L dropbox only, due by Sunday, 06/05</strong></td>
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<td></td>
<td><strong>Systems Project: submit by Sunday, 06/05, via D2L dropbox only</strong></td>
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</tbody>
</table>
Article Review Guidelines. The Article Reviews are intended to...

- update what we know about computer hardware and software

For class sessions, as indicated in the syllabus and/or course schedule:
- find one relevant and recent article, published within the last year, for the topics to be discussed at that session
- attach a copy to your post and/or include url, as appropriate; include a complete citation
- topics are the chapters and/or topics in Burd’s Systems Architecture text
- write three paragraphs of summary and three paragraphs of critique, outlining how and why the article is appropriate to the topic and your own assessment as to the quality of the article
- point out how the information contained in the article furthers knowledge about computer systems
- discuss the article in a couple of minutes during class
- post your review to our D2L course site in the appropriate article review discussion forum

Technology Project Guidelines. The one constant in the technology field is change. State-of-the-art technology solutions from a year ago are supplanted by today’s state-of-the-art. It is critical for computer science and information systems professionals to keep abreast of developments. While it is important to have general knowledge about current technology, it is also critical to investigate a particular technology direction in appropriate and sufficient detail to support management or client decision-making.

The goal of the Technology Project is to get some practice in investigating a new or emerging hardware or software technology.

More specifically, the objectives are to:
- gain a fundamental understanding of the technology
- assimilate the information
- evaluate the information given the requirements of the business problem the technology is addressing
- communicate findings

You may work alone or with another student. You must:
- submit a topic (no more than one student or student team per topic)
- submit a preliminary outline, including a preliminary bibliography (comments will be given)
- present findings in written form (five to six pages)
- if working with another student, each student will assess the quality of his/her own contribution as well as the quality of his/her partner’s contribution to the project

Additional details on the final product for the Technology Project:
- five to six pages for an individual project or ten to twelve pages for a two-person project, one-inch margins, 12-point Times New Roman, double-spaced
- clear organization (for example: title, table of contents, section headings, page numbers, bibliography)
- appropriate supporting materials (for example: charts, illustrations, graphs, photographs)
- proper citations for materials used (see statement on academic honesty; use APA style for references)
- correct grammar, spelling, writing style
**Systems Project Guidelines.** The goal of the Systems Project is to describe a real, functioning computer system. Find an organization (a small company, a sole proprietorship, a department within a larger organization, etc.) and one or more individuals at the organization that will be willing to spend some time discussing their computer system.

The description should include identifying the system hardware, operating system software, and primary applications software. The emphasis should be on how the hardware and software system components interact to produce a functioning system addressing its business objectives.

You may work alone or with another student. You must:
- submit the topic, that is, your setting—a two or three-sentence description of the organization and the scope of the computer system to be described
- submit a preliminary outline, including a preliminary bibliography (comments will be given)
- present findings in written form (nine to ten pages) and in an in-class presentation (about 15 minutes and additional details will be given in class)
- if working with another student, each student will assess the quality of his/her own contribution as well as the quality of his/her partner’s contribution to the project

Suggested Outline, based on R. Meeker:
- **Introduction**
  - What are the basic hardware and software components?
- **Hardware, with details**
  - CPUs, include server(s) and client(s)
  - Memory, that is, RAM for each component
  - Secondary storage, for example, disk, tape, cd, dvd, …
  - I/O components, for example, printers, scanners, video input(s), …
  - Connections among components and other systems
- **Operating systems, with details**
  - Server operating system: identify and describe
  - Client operating system(s): identify and describe
- **Application software**
  - What business application(s) is(are) supported?
  - Identify and describe the purpose of each of the major components of the software
  - Identify how these components are distributed across the hardware and operating system components. How are the various services actually delivered to the user?
- **Evaluation**
  - Find at least two academic journal articles related to the type of business, major application, and/or business problem and use these findings in your evaluation.
  - How effectively does the system meet its goals?
  - What changes might be made to enhance system performance?
  - What additional applications and/or access would you recommend?
- **Sources**
  - Bibliography
  - Individuals interviewed (name, job title/position)

Additional details on the final product for the Systems Project:
- nine to ten pages for an individual project or eighteen to twenty pages for a two-person project, one-inch margins, 12-point Times New Roman, double-spaced
- clear organization (for example: title, table of contents, section headings, page numbers, bibliography)
- appropriate supporting materials (for example: charts, illustrations, graphs, photographs)
- proper citations for materials used (see statement on academic honesty; use APA style for references)
- correct grammar, spelling, writing style