Syllabus
Division of Business and Engineering
Penn State Altoona

Prerequisites: MIS 103 or IST 110

Required Text: None
Recommended Texts:

Course Description: "MIS 120 is an introduction to operating systems. Topics to be discussed include: Management of microcomputer hardware and software, including systems software, user interfaces, file management, security features, and applications software installation." -from the catalog description of MIS 120-

Course Objectives: In this course, students should learn:

- the theoretical foundations upon which an operating system is built
- the essential components of an operating system
- the characteristics of various personal computer (PC) operating systems
- the networking features of operating systems and how to use them
- the security features of operating systems and how to use them
- the features of open-source client and server applications and how to use them
- the relationship between operating systems and software development

Topics:

- Module 1: Introduction and System Resources
- Module 2: File Systems and Memory Management
- Module 3: Process Management and Networking
- Module 4: Windows, Linux, and Mac OS

Contact Information:
*Jungwoo Ryoo*
E-mail: jryoo@psu.edu  
Office: (814) 949-5243  
Cell: (913) 579-2330  
Fax: (814) 949-5456

Office Location  
163 LRC  
3000 Ivyside Park

Personal URL  
http://www.personal.psu.edu/jxr65

Altoona, PA 16601
Course Homepage: Angel

Meeting Times: Mondays and Wednesdays from 9:00 a.m. to 10:15 a.m.

Office Hours: Mondays and Wednesdays from 1:00 p.m. to 3:00 p.m. Note that a separate meeting can be arranged via an E-mail if a student would like to see me at times other than the office hours.

Homework and Grading Policy:

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Grading Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation: 5%</td>
<td>A: 93% to 100%</td>
</tr>
<tr>
<td>In-class presentation: 5%</td>
<td>A-: 90% to 92.9%</td>
</tr>
<tr>
<td>Quizzes: extra credit (5%)</td>
<td>B+: 87% to 89.9%</td>
</tr>
<tr>
<td>Homework Assignments: 10%</td>
<td>B: 83% to 86.9%</td>
</tr>
<tr>
<td>Project (one throughout the semester): 20%</td>
<td>B-: 80% to 82.9%</td>
</tr>
<tr>
<td></td>
<td>C+: 77% to 79.9%</td>
</tr>
<tr>
<td>Midterm I: 15%</td>
<td>C: 70% to 76.9%</td>
</tr>
<tr>
<td>Midterm II: 15%</td>
<td>D: 60% to 69.9%</td>
</tr>
<tr>
<td>Final: 30%</td>
<td>F: less than 60%</td>
</tr>
</tbody>
</table>

Course Format: In a real-life work environment, problem solving and troubleshooting skills are a must. Even more important is an ability to gain new knowledge and apply it in the process. The format of this class is deliberately designed to help students acquire these skills throughout the semester.

At the beginning of each class, students will be given a coherent set of problems and learning objectives relevant to these problems (5 minutes). All the information necessary to solve the problems will be provided during the lecture (45 minutes). Students then work on a quiz or hands-on exercise (15 minutes) based on the problems posed earlier in the class. In addition to in-class problem-solving activities, students will have weekly homework assignments. They will be posted on our class web site and collected, graded, and returned to each student. Students should visit the course web site at least once a day to be informed about any homework changes. On each Wednesday, one of the students (according to a schedule) will also do a short PowerPoint® presentation (20 minutes maximum) on an article distributed in the previous class. The slides must be submitted to and approved by me prior to the actual presentation (on Mondays).

A quiz will be administered in every class except on exam days. Each student and his or her partner or partners (at most three people) can collaborate to do the quiz questions. Each student’s two worst quiz/hands-on exercise scores will be excluded from the final grade. Note that the quiz scores will be used as extra credit to boost overall grades at the end of the semester.
Semester Project: Throughout the semester each student will participate in a group project. A group will consist of three students. The nature of the project can be either 1) scholarly research or 2) community service learning (CSL).

- Students participating in research project groups will be guided and advised by me at each important juncture of their research project and will be taught basic academic research skills. A set of candidate topics will be available. A research group may pursue a topic of its own choice with prior permission from me.
- Students participating in CSL groups may use this project to begin their search for internships.

Below is a summary of the tentative project schedule and deliverables at each milestone.

<table>
<thead>
<tr>
<th>Due Date</th>
<th>Deliverables</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 23</td>
<td>Research/Community Service Learning (CSL) Proposal and Scholarly Journal References (include Team Name and Member Names)</td>
<td>Research Group: consult Research Proposal Preparation Guideline on the course homepage. CSL:  In an overview statement briefly describe what you want to do.</td>
</tr>
<tr>
<td>February 20</td>
<td>Research/Community Service Learning 1st Status Report</td>
<td>Consult the Status Report document on the course homepage. Research Group Status Report: Include group members, research topic, a copy of scholarly journal articles, and 1 page outline of your proposed paper. CSL Individual Status Report: Describe what you have been doing and what you have learned on the job (1/2 to 1 page).</td>
</tr>
<tr>
<td>March 30</td>
<td>Research/Community Service Learning 2nd Status Report</td>
<td>Consult the Status Report document on the course homepage. Research Group Status Report: Include group members, research topic, updated outline, and list of tasks yet to be accomplished. CSL Individual Status Report: Include a description of what you have been doing, what you have learned on the job (1/2 to 1 page).</td>
</tr>
<tr>
<td>April 10</td>
<td>Presentation materials and exam questions</td>
<td>PowerPoint® slides and exam questions must be turned in on time. Follow guidelines on the course homepage.</td>
</tr>
</tbody>
</table>
April 17 – April 28
Research/Community Service Learning presentations
Place: Classroom
Follow guidelines on the course homepage.

Attendance: Students are expected to attend every class. Attendance will be reflected on the final grade since class participation accounts for 5% of the total grade.

Make-up Exams: Students are expected to make every effort to take all examinations at their scheduled times. However, if a student misses a class in which a quiz was given, he or she may make up the quiz provided you do so before the next scheduled class meeting. No make-up in-class quizzes will be given after that time. No make-up in-class hands-on exercises will be given at all. If a student is ill at the time of the midterm exams, he or she must contact me in advance of the exams to make special arrangements.

Classroom Etiquette: In general, students are expected to behave in a way that does not hinder other students’ learning. For example, students are expected to turn off their cell phones before each class. Do not bring your cell phone on the midterm and final exam days.

Assignment Submission Procedures: Assignments must be word-processed and submitted electronically to Angel. A drop box will be created for each assignment.

Assignment Deadline Policies: Homework assignments must be submitted on the designated due date. Late submissions will result a 5% per day grade reduction.

Communication Policies: I prefer E-mails to phone calls. I check my E-mails regularly. Therefore, sending an E-mail is the best way to contact me.

Important Dates:
January 18 (Wednesday): Add/Drop Deadline
February 1 (Wednesday): Midterm Exam I
March 1 (Wednesday): Midterm Exam II
April 28 (Friday): Last day to withdraw from the class
May 1 (Monday from 6:00 p.m. to 7:50 p.m.): Final Exam

Class Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics</th>
<th>Assignments</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (1/9)</td>
<td>Introduction and overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (1/11)</td>
<td>What Is an Operating System (OS)? Introduction to Computer Security</td>
<td>Assignment 1</td>
<td>10</td>
</tr>
<tr>
<td>2 (1/16)</td>
<td>Evolution of Computing Basic Cryptography</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### MIS 120

**Micro Operating Systems**  
**Dr. J. Ryoo**  
**Spring 2006**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date(s)</th>
<th>Topic(s)</th>
<th>Assignment(s)</th>
</tr>
</thead>
</table>
| 2    | 1/18    | History of Operating Systems  
User Authentication | Assignment 2  
10 |
| 3    | 1/23    | Survey of Popular Operating Systems |  
| 3    | 1/25    | Lab 1 |  
| 4    | 1/30    | File Systems |  
| 4    | 2/1     | Exam 1 | Assignment 3  
10 |
| 5    | 2/6     | File Systems |  
| 5    | 2/8     | File System Security  
Lab 2 | Assignment 4  
10 |
| 6    | 2/13    | Memory Management |  
| 6    | 2/15    | Memory Management | Assignment 5  
10 |
| 7    | 2/20    | Buffer Overflow  
Lab 3 |  
| 7    | 2/22    | Process Management |  
| 8    | 2/27    | Process Management |  
| 8    | 3/1     | Exam 2 | Assignment 6  
10 |
| 9    | 3/6     | Lab 4 |  
| 9    | 3/8     | Networking | Assignment 7  
10 |
| 10   | 3/13    | Networking |  
| 10   | 3/15    | Network Security  
Lab 5 | Assignment 8  
10 |
| 11   | 3/20    | Windows Operating Systems |  
| 11   | 3/22    | Windows Operating Systems | Assignment 9  
10 |
| 12   | 3/27    | Lab 6 |  
| 12   | 3/29    | Exam 3 | Assignment 10  
10 |
| 13   | 4/3     | Linux Operating Systems |  
| 13   | 4/5     | Linux Operating Systems | Assignment 11  
10 |
| 14   | 4/10    | Lab 7 |  
| 14   | 4/12    | Mac OS | Assignment 12  
10 |
| 15   | 4/17    | Mac OS |  
| 15   | 4/19    | SE Linux | Assignment 13  
10 |
| 16   | 4/24    | SE Linux |  
| 16   | 4/26    | Lab 8 | Assignment 14  
10 |

---

**Penn State University’s Academic Integrity Policy**
Definition and expectations: Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Consequences of academic dishonesty: The instructor may assign an academic sanction ranging from failure on the assignment to failure in the course. The instructor reports each academic sanction to the Office of Judicial Affairs, which keeps a record. Students can appeal academic sanctions to the Committee on Academic Integrity through the Office of Academic Affairs. In more serious cases of academic dishonesty, the Office of Judicial Affairs may apply disciplinary sanctions in addition to the academic sanctions. These may range from automatic failure for the course to probation, suspension or expulsion from the University. An "XF" grade is a formal University disciplinary sanction that indicates on the student's transcript that failure in a course was due to a serious act of academic dishonesty. (Policies and Rules for Students, Section 49-20.)

The content of this syllabus is subject to change during the semester on a daily basis. The changes will be announced during the class and the details of revisions will be reflected on the course homepage.