



# FranklinPierce UNIVERSITY

## COLLEGE OF GRADUATE & PROFESSIONAL STUDIES

### SYLLABUS

Course N°: **GI 570**

Course Title: **Operating Systems  
for Information Managers**

Credits: 3

Semester: Fall 2010

Section: 683

Campus: 100% Online

Faculty: **Wayne Pauley**  
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Office Hours: by appointment  
Course Website: <http://franklinpierceonline.net/>

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## REQUIRED TEXT MATERIALS

### **Applied Operating System Concepts**

Eight Edition

Abraham Silberschatz • Peter Galvin • Greg Gagne

John Wiley & Sons, 2008

ISBN: 978-0-470-12872-5

## CATALOG DESCRIPTION

This course introduces the history of operating systems and how they interface to the end user. Students examine current operating systems to understand the internal operation, structure, design, and I/O management. Topics include the use of device drivers, memory management, processing hierarchy, and file system structures.

## COURSE OBJECTIVES

Throughout this course, students will:

- ◆ Be exposed to research of the multiple operating systems commonly found in the Information Technology field today.
- ◆ Be exposed to extensive research on the Internet, to find out about operating systems, interaction, and compatibility issues.
- ◆ Become conversant in the language of operating systems.
- ◆ Participate in a variety of group and individual projects, conducive to obtain hands on experience in dealing with issues in operating systems.
- ◆ Be exposed and have hands-on experience with simple commands in different operating systems.
- ◆ Create a Portfolio of Operating Systems.

Upon completion of this course, students will be able to:

- ◆ Understand why and how to choose an operating system.
- ◆ Understand the theory behind operating systems and some basic to advanced components of each operating system.
- ◆ Articulate how operating systems interface with input, output, and storage devices.
- ◆ Develop a business case to implement an operating system.
- ◆ Define criteria to evaluate an operating system.
- ◆ Feel comfortable when discussing operating systems with all its acronyms.
- ◆ Understand the business impact of choosing an operating system.

## TOPICAL OUTLINE

Topics to be covered include:

- ◆ History of Operating Systems.

- ◆ Process Management.
- ◆ Storage Systems and Management.
- ◆ File Systems.
- ◆ Input and Output.
- ◆ Software Compatibility.
- ◆ Traditional Distributed Systems.
- ◆ Embedded, Mobile, & Real-time systems (discussions)
- ◆ Virtualization, Grid, and Cloud Systems (discussions)
- ◆ Security & Privacy
- ◆ The Future of Operating Systems.

### PREREQUISITES

The instructor assumes students have familiarity with general business situations, finance, organization behavior, managerial economics, operating systems, distributed systems, Internet communication protocols, and Object Oriented Programming concepts. **Internet access is indispensable.**

Knowledge of a higher level programming language is desirable, but not required. If a student has not yet completed the computer prerequisites as indicated in the catalog, he or she might sometimes experience some difficulty understanding the material. **If you have not satisfied the programming prerequisite, you should consult with the instructor before beginning any coursework related to this subject.**

### COURSE FORMAT - ONLINE

This course is being offered in **online** format. All twelve sessions will be online, which you are required to complete on your own for a period of time that may not exceed one week each.

If you have not taken an online course, please make sure you take the time to run through the student orientation course. This will greatly enhance your ability to concentrate on learning the course material rather than struggling with learning how to use the online system while taking the course. Even if you have taken an online course in the past, it is good to re-familiarize yourself with the workings of the online system.

### COURSE METHODOLOGY

Over the course of the term, the instructor will employ one or more of the following strategies:

- ◆ Exercises
- ◆ Threaded Discussions
- ◆ Team Projects

#### **Exercises**

Under this section, the instructor will walk students through exercises that demonstrate applications of the concepts covered.

## Threaded Discussions

In an attempt to acknowledge the background and expertise of some of the classmates, some topics will be covered through threaded discussions.

Threaded discussions are an exciting way of learning, as more *technically savvy* students share their own experiences as they relate to a particular topic.

The discussion will start with questions posed by the instructor or a relevant case study. Students will share their own experiences as they relate to the subject matter. Those students who are more familiar with the topic can explain to the class their points of view.

In case analyses there are no "right" answers to management problems. Cases bring a small chunk of the real world into the academic setting, where instructor and students can examine it, determine which problems exist, discuss optional approaches to dealing with the problems, and decide upon a course of action.

The case method is an exciting way of learning. It recognizes the importance of each individual's experience as it is shared in the discussion. It also shows that the real world is a complicated place where ready-made solutions do not work. Participants are placed in the middle of the action, and forced to be analytical while using management concepts rather than reiterating them.

All students are expected to participate actively in the discussion. Active participation implies posting messages, and visiting often to keep the discussion active.

## Team Projects

Throughout the term, students will engage in short team projects to be completed during class. Some of those projects will involve the whole class as a team, while others will involve the class to be divided into more than one team.

## STUDENT RESPONSIBILITIES

Each student is responsible for completing the tasks assigned to each unit, downloading the materials, and handing in their homework's.

Make sure you keep a backup of all your work. Even if you submit your homework on time, there is no guarantee that your work will reach its destination as expected. Your instructor may contact you in case there are any problems. Remember, you are the sole responsible for making sure your work receives proper credit, and this includes proper reception.

Please cite all references using APA style. You will find style tips at the APA online site located at <http://www.apastyle.org/previoustips.html>. Specific help in citing electronic sources can be found at <http://www.apastyle.org/elecref.html>. Additional help in the APA citation style is available at <http://thewritdirection.net/apastyle.htm>. A sample APA style paper may be found at <http://dianahacker.com/writersref/>. Once there, follow the link to Model Papers, and download the APA paper. Use it as a reference on what your paper should look like. The most important formatting aspects are: cover page, Reference Page, appearance of the headers, and in line references. Finally, although with some flaws, it is a good idea to use the online Citation Machine available at <http://citationmachine.net/>.

An alternative is to purchase the APA book from a bookstore such as Barnes and Noble or purchase from Amazon.com (or other Web sites) online for under \$25. The current edition is the 6<sup>th</sup> Edition which has significantly added examples for digital content (e.g. online videos, papers, etc.) This manual has served me well in graduate school and for writing papers for publication.

As a word of advice, please, do not wait until the last moment to complete your work. If you do, you run the risk of experiencing unanticipated problems that might prevent your from completing your work on time. Whenever possible, consider alternative schedules.

### ABSENCE FROM CLASS

No communication from you for one class meeting, for whatever reason, means your instructor will initiate an administrative withdrawal. Please note that the withdrawal does not excuse course payment unless withdrawal is on the first week of class.

### EVALUATION METHODS

Assignments for this class range from extensive research to written work on a variety of related topics to a final project. The workload may sometimes be intensive. Depending upon your experience, each assignment should take an average of four hours to six hours to complete.

The final grade will be calculated as follows:

◆ Weekly Assignments	10%
◆ Midterm	20%
◆ Movie Discussion	15%
◆ Debates	15%
◆ Portfolio of O/S	20%
◆ Threaded Discussions	10%
◆ Peer Evaluation	5%
◆ Module Paper	5%

#### **Weekly Assignments**

There will be ten weekly assignments during the term. The assignments will consist of short papers, ranging from research to opinion, and some hands-on applications. Additional details will be provided each week.

Students must complete their assignments using a personal computer, and submit them by using the corresponding dropbox. Each campus has available a number of personal computers for student use. Handwritten assignments will not be admitted.

#### **Midterm**

There will be one test during the term. The midterm will consist of an application of the terms learned in class, in the form of essay questions. No makeup exams will be given.

#### **Movie Discussion**

Two movies will be shown during the term: The Triumph of the Nerds and Revolution OS. These two movies will allow students to get acquainted with the history of the personal computer, and the emergence of Windows and Linux Operating Systems. After watching the movies, students will engage in active online discussions.

#### **Debates**

As part of the class activities, students will participate in two debates during the term: For v. Against Open Source Software, and Windows v. Linux. The class will be divided into 2 groups. The groups will be the same for both debates. Participation in the debates is required.

### **Portfolio of O/S**

The final project will consist of a portfolio of operating systems. This term-wide project will be completed in different phases, and all students will participate towards its completion. Students will have time to spend on the project every week, but some details will be worked out outside of the class. Most of the project details can be worked out electronically, so it is not necessary to live close by. Students will present the final project to the class during the last session.

### **Threaded Discussions**

There will be weekly discussion topics. Students are strongly encouraged to participate in threaded discussions. A portion of the final grade will depend on the quantity and quality of input. Quantity refers to online participation. The instructor will take note of how often a student makes significant contributions to the class. Quality refers to those comments, which elevate the discussion to another level. Only quality comments will be taken into account.

It is the responsibility of each student to visit the course Website at least twice per week. Forums are sometimes the means students use to communicate with each other when completing assignments.

### **Peer Evaluation**

You will be asked to evaluate your team members at the end of the term. The rubric is provided on page 13.

### **Module Paper**

Students are required to submit their module papers, and will receive credit for it. For details about the module paper and how it will be graded, refer to the end of the syllabus.

### **Grade Calculation**

The total points accumulated will be converted to the GPS grading scale at the end of the semester. The following score criteria will be used:

<b>Grade</b>	<b>Definition</b>	<b>Quality Points</b>	<b>Score</b>
A	Excellent	4.00	96-100
A-	Very Good	3.67	90-95
B+	Very Good	3.33	87-89
B	Satisfactory	3.00	84-86
B-	Satisfactory	2.67	80-83
C+	Unsatisfactory	2.33	77-79
C	Unsatisfactory	2.00	74-76
F	Failure	0.00	0-73

### **Late Assignment Policy**

Each week, students will be assigned readings and projects to complete during the week. **All assignments must be completed using a personal computer.** Handwritten assignments will not be admitted. Assignments are due at the **BEGINNING** of the following week.

Late homeworks will be accepted and graded according to the following guidelines:

<b>Days Late</b>	<b>Penalty</b>
Up to 1	10%
Up to 2	20%
Up to 3	30%
Up to 4	40%
Up to 5	60%
Up to 6	80%
Up to 7	100%

### **Resubmission Policy**

Throughout the term, you have the option of resubmitting a maximum of one assignment. The resubmission may earn a maximum grade of 90%.

### TECHNICAL REQUIREMENTS

In order to use the Course Website, you must comply with the technical information provided by the school's online campus. For more information, please visit the [Browser Test Page](#).

For further assistance in this area, please contact [helpdesk@franklinpierceonline.net](mailto:helpdesk@franklinpierceonline.net) or call (303) 873-0005.

To gain access to selected handouts, students will need to download the most recent version of Adobe Acrobat Reader. This software is available for free at: <http://www.adobe.com>.

Students will require **Microsoft Office**. There is an open source alternative. If you are interested, you may visit the **Open Source alternative** (<http://www.openoffice.org>) and download the software for free. This productivity software is similar to Microsoft Office, and includes word processor, spreadsheet, presentation, drawing, and database software. If you understand the techniques of file conversion you may do just fine with a current version of MS Works, Word Perfect, or the Lotus Office Suite. Just be aware that any project turned in must be in Microsoft Office readable file structures.

### CLASSROOM ETIQUETTE

Students are expected to be familiar with the Student Code of Conduct, available at the campus office, or online at <http://www.franklinpierce.edu/pages/StudentLife/conduct.html>.

Make sure you are familiar with online etiquette, by visiting <http://www.netmanners.com/>.

### LEARNING DISABILITIES

In accordance with the Americans with Disabilities Act, any student who has a documented physical, learning, or emotional disability\* will be provided with reasonable accommodations designed to meet his or her needs. Before any such assistance can occur, it is the responsibility

of the student to see that documentation is on file with the Academic Services Center at Franklin Pierce University in Rindge and that the advisor has a copy of the Accommodation Plan developed by the ADA coordinator. Please attend to any need for accommodations as soon as possible.

*\*Documentation cannot be more than three years old.*

### ACADEMIC DISHONESTY POLICY

Franklin Pierce University requires all students to adhere to high standards of integrity in their academic work.

Since plagiarism strikes at the very heart of the academic enterprise, it is taken very seriously at Franklin Pierce. Plagiarism is the act of stealing or passing as one's own the ideas or words of another. Specifically, this includes:

- a) copying the words of another student from examinations, themes, term papers or theses;
- b) copying the printed words or ideas of a writer without giving credit to the author;
  - 1) "failing to cite quotations and borrowed ideas,
  - 2) failing to enclose borrowed language in quotation marks,
  - 3) failing to put summaries and paraphrases in your own words";
- c) using, borrowing, stealing, presenting or downloading another's ideas/writing and submitting such material as your own work, in whole or in part, that has been previously submitted in another course without prior permission of the current instructor.

The minimum penalty for a first offense for all forms of cheating, including plagiarism, should be subject to the instructor's discretion, with mandatory placement of a documented record on file in the office of Graduate and Professional Studies. For a second offense of cheating, including plagiarism, the student will receive a one-semester, non-deferrable suspension from the University. For a third offense of cheating, including plagiarism, the student will be dismissed from the University. In any case discussed above, the ultimate discretion lies with the Dean's office of the College of Graduate and Professional Studies.

There is no excuse for academic dishonesty. The instructor will not tolerate any form of dishonesty in this course.



### About the Instructor



Wayne Pauley is an Adjunct Professor of the MS in IT Management program. He works full time for EMC Corporation as Director, of Global Competitive Programs in Hopkinton, Massachusetts. He received his MS in IT Management from Franklin Pierce University in 2007, a BS in Computer Science from Franklin Pierce University in 1987, and an AA from Central New England College in 1985.

Wayne is also a PhD candidate (expected 2011) in Information Systems Science specializing in Information Security at Nova Southeastern University. His dissertation thesis is on privacy risk assessment methods in cloud computing. His research interests include security, privacy, cloud, and risk.

Wayne co-published Towards Risk Assessment as a Service in Cloud Computing Environments with Dr. Burton Kaliski (Usenix Hotcloud 2010), and Cloud Computing Transparency: An Empirical Study (IEEE Security & Privacy 2010, special edition on Cloud). Wayne is also an invited reviewer for IEEE Security & Privacy.

Wayne is also active in professional activities as a member of the IEEE-USA Committee on Communications Policy, IEEE Computer Society NH Section Vice-Chair, and a contributing member of the Cloud Security Alliance and Cloud Audit Standards efforts.

COURSE SCHEDULE

There are twelve units to be covered during the term. Each week will cover one unit.

Session N°	Date	Topics	Due	Assigned Readings
1	08/30/2010	Course Overview Interest Assessment Operating System Concepts Selection of O/S Representatives Portfolio Rules Movie Distribution Logistics	A-1	Chapters 1-2
2	09/06/2010	Processes and Threads	A-2 Portfolio: History	Chapters 3-4
3	09/13/2010	Scheduling	A-3	Chapter 5
4	09/20/2010	Synchronization and Deadlocks	A-4 Portfolio: Hardware Requirements	Chapters 6-7
5	09/27/2010	Memory Management Virtual Memory	A-5 Portfolio: Common Applications	Chapters 8-9
6	10/04/2010	File Systems <b>Online Debate:</b> For v. <a href="#">Against Open Source</a>	A-6	Chapters 10-11
7	10/11/2010	I/O Systems	A-7 Portfolio: O/S Experts	Chapter 13
8	10/18/2010	<b>Midterm</b>	Movie Discussion	
9	10/25/2010	Storage Management	A-8 Portfolio: O/S Leaders	Chapter 12
10	11/01/2010	Distributed Systems	A-9	Chapters 16-18
11	11/08/2010	Security & Privacy	Portfolio: Future Outlook Module Paper	Chapters 14-15
12	11/15/2010	Course Review & Evaluations <b>Online Debate:</b> <a href="#">Windows v. Unix</a>	Portfolio of O/S Peer Review	

## MODULE PAPER

**The module paper is written upon the completion of each graduate course.**

The module paper is broken down into three parts. The length of the paper is determined by the writer and should be driven by the power of the impact of the course.

### PART N° 1

**What have you learned in this class?** Please summarize the course theory/theories. What essential elements did you derive from the course which relate to leadership and your career objectives? Elements that **you learned in the course** are **all** that you need to describe here.

### PART N° 2

**How is this relevant to you, your workplace or community?** Have you applied the “new” learning to your workplace or community? Does the theory fit the organization or community? If so, how? Give a clear example of how the learning applies to you, your organization or community. Be concise.

### PART N° 3

**How does the new learning apply to your Foundation Paper?** How does the “new” learning fit with your basic foundation paper strategic plan? Do you need to reevaluate your original plan? Is leadership a constant component? How does the material move you towards your final goal? Do you need to change your strategy? Please provide details.

**NOTE:** The number of pages for the module papers should average from four to five pages, double-spaced. The paper should clearly define the course experience and its value to you in relation to your career objectives.

## PORTFOLIO ARTIFACTS

In addition to written module papers, students are encouraged to add artifacts to the Portfolio. Artifacts are items which are evidence of learning. For example, if a student took a course in planning and as a result developed a new plan for retention of staff in the workplace, artifacts might include 1) the plan 2) a letter about the plan from the boss 3) a promotion letter mentioning the plan 4) a write-up in the company newsletter, etc. These artifacts can be submitted with the module paper as an appendix with a reference within the body of the paper.

Examples of artifacts include the following:

1. Anecdotal records
2. Article summaries or critiques
3. Awards/certificates
4. Bulletin Boards (pictures or design of)
5. Community documents (newspaper articles, newsletters, bulletins, etc.)
6. Computer programs
7. Essays
8. Interviews (printed transcripts)
9. Radio/Television appearances (audio, video tapes)
10. Journals
11. Letters
12. Meeting Minutes
13. Peer Critique
14. Photographs
15. Professional Organization activities
16. Project Summaries
17. Research Papers
18. Schedules
19. In service education
20. Community presentations
21. Contracts
22. Consulting reports, assignments
23. Plans
24. Volunteer experiences
25. Promotion, work assignments

## MODULE PAPER RUBRIC

Your module paper will be evaluated and graded according to the following guidelines:

<b>MBA Module Paper Rubric ( 50 Points Total)</b>			
<b>Content</b>			
<b>Exceeds Expectations (40 Points)</b>	<b>Meets Expectations (30 Points)</b>	<b>Below Expectations (20 Points)</b>	<b>Points Awarded</b>
Demonstrates clear understanding of the learning objectives and learning modules outlined in the syllabus and how they are relevant to the student's workplace or community using specific examples.	Demonstrates clear understanding of the learning objectives and learning modules outlined in the syllabus and how they are relevant to the student's workplace or community using generic examples.	Demonstrates some understanding of the learning objectives and learning modules outlined in the syllabus and how they are relevant to the student's workplace or community using some general examples.	
<b>20</b>	<b>18</b>	<b>10</b>	
Defines specifically how the new learning applies to the student's foundation paper.	Defines generically how the new learning applies to the student's foundation paper.	Defines generically how the new learning applies to the student's foundation paper.	
<b>20</b>	<b>18</b>	<b>10</b>	
<b>Writing Style and Quality</b>			
<b>Exceeds Expectations (10 Points)</b>	<b>Meets Expectations (8 Points)</b>	<b>Below Expectations (7 Points)</b>	<b>Points Awarded</b>
No significant grammar or spelling errors.	Few grammar or spelling errors.	Several grammar and/or spelling errors	
<b>2.5</b>	<b>2</b>	<b>1.75</b>	
Clear, well constructed sentences.	A few awkward and/or wordy sentences.	Many awkward and/or wordy sentences	
<b>2.5</b>	<b>2</b>	<b>1.75</b>	
A well constructed essay with a good introduction giving an overview of the essay and a good summarizing conclusion; paragraphs develop one idea in a systematic way.	Paragraphs are well-organized, but no clear overall organization OR overall organization is clear, but paragraphs lack cohesiveness.	Sentences jump from idea to idea, with no clear organization of paragraphs or overall essay cohesiveness.	
<b>2.5</b>	<b>2</b>	<b>1.75</b>	
2.5	If external sources cited (articles, books, web sites, etc.) APA format is used within the text as well as on the reference page and contains only two or three errors.	If external sources cited (articles, books, web sites, etc.) APA format is used within the text as well as on the reference page and there are more than three errors.	
<b>2.5</b>	<b>2</b>	<b>1.75</b>	
<b>Total Points</b>			

## PEER EVALUATION RUBRIC

**Student Name**

Peer Name (include your own name as well)	Contribution (%)	Grade (0-5)

**Provide details on how you contributed to the project**

**Did your team experience challenges? If so, how did you overcome them? Explain.**

### INSTRUCTIONS

**Contribution**      Indicates the degree of contribution to the completion of the project. The top degree is 100 %, lowest is 0 %.

**Grade**              Indicates the grade you would assign to the each member for their contribution to the project. The top score is 5, lowest score is 0.