UNIVERSITY OF GUAM
COLLEGE OF NATURAL AND APPLIED SCIENCES
COURSE SYLLABUS

1. INSTRUCTOR / COURSE INFORMATION

Instructor: Dr. Frank Lee
Course Number and Title: CS303 Data Structures and Algorithm Analysis
Semester: Spring 2016
Class Hours: 8:00 – 9:20 AM, Tuesday & Thursday
Classroom: Computer Science Lab (Warehouse B2)
Office: Warehouse B6 Telephone: 735-2826 E-Mail: flee@uguam.uog.edu
Office Hours: 10:00 – 11:59 AM (M, W); 11:00 -11:59 AM (T, Th)
Course Website: **https://campus.uogdistance.com/**

2. CATALOG COURSE DESCRPTION / PREREQUISITE

The course covers the following concepts: Basic data structures: graph, search paths and spanning trees; algorithm design and analysis of sorting, merging, and searching; memory management, hashing, dynamic storage allocation; integration of data structures into system design. Prerequisite: CS202.

3. INTENDED STUDENT LEARNING OUTCOMES (LEARNING OBJECTIVE)

- Enabling Knowledge: the operation, implementation and performance of fundamental algorithms and data structures, and the relative merits and suitability of each for various applications.
- Problem Solving: Ability to design and implement efficient software solutions for various application areas using appropriately selected algorithms and data structures.
- Critical Analysis: Ability to analyze data structures and algorithms, to compare and evaluate them with respect to time and space requirements, in order to make the most appropriate design choices for various application areas.
- Communication: Ability to motivate and explain efficient programming concepts, relevant alternatives and decision recommendations, in written form, to IT specialists.
- Responsibility: Ability to apply relevant standards and ethical considerations to the design and implementation of efficient software solutions.

Matrix for SLO, PLO, ILO and GEQR (See #13 and 14 below)

Course SLOs:	**Program Learning Outcomes (PLOs)**	**University Learning Outcomes (ILOs)**	**Method of Assessment**
CS303 SLO-1: Upon successful completion of this course, students will be able to describe the operation, implementation and performance of fundamental algorithms and data structures, and the relative merits and suitability of each for various applications.	CS PLO-2 CS PLO-3 CS PLO-4	ILO-1 ILO-2	Homework, programming assignments, and exams.
CS303 SLO-2: Upon successful completion of this course, students will be able to design, implement, and test efficient software solutions for various application areas using appropriately selected algorithms and data structures (including especially linked-lists, stacks, and trees).	CS PLO-3 CS PLO-4 CS PLO-5	ILO-1 ILO-2	Computer Programming assignments and projects
CS303 SLO-3: Upon successful completion of this course, students will be able to analyze data structures and algorithms, by comparing and evaluating them with respect to time and space requirements, in order to make the most appropriate design choices for various application areas.	CS PLO-2 CS PLO-4 CS PLO-5	ILO-1 ILO-2 ILO-5	Programming assignments, homework and exams.
CS303 SLO-4: Upon successful completion of this course, students will be able to motivate and explain efficient programming concepts, relevant alternatives and decision recommendations, in written form, to IT specialists.	CS PLO-4 CS PLO-5 CS PLO-6	ILO-3 ILO-5 ILO-6	Computer Programming Projects
CS303 SLO-5: Upon successful completion of this course, students will be able to apply relevant standards and ethical considerations to the design and implementation of efficient software solutions.	CS PLO-5 CS PLO-6 CS PLO-7	ILO-3 ILO-4 ILO-5 ILO-6 ILO-7	Programming assignments, homework, exams and projects.

4. CONCEPTUAL STRUCTURE OF THE COURSE

- Review of Java object-oriented programming: encapsulation, polymorphism, inheritance
- Linear structures: stack, queue, array, linked list
- Algorithms: analysis, searching, sorting, recursion
- Trees and sets
- Advanced topics: advanced linear structures, strings, advanced trees, graphs

5. FORMAT AND ACTIVITIES IN THE COURSE

- PowerPoint lectures
- In-class labs
- Programming assignments
- Project presentations

6. REQUIRED AND RECOMMENDED TEXTS AND/OR STUDY GUIDES

REQUIRED TEXTBOOK: Data Structures and Algorithms in Java.
AUTHOR: Peter Drake
PUBLISHER: Pearson / Prentice Hall, 2006
ISBN: 0-13-146914-2

7. ADDITIONAL MATERIALS, RESOURCES AND/OR EQUIPMENT

- A **USB flash memory stick** to store your labs, homework, projects, exams, etc.
- DrJava: A Java programming tool.

8. LIST ASSIGNMENTS, TERM PAPERS, EXAMS, ETC.

- Homework assignments.
- Exams & Quizzes.
- Programming project.
- **You must spend at least 3 extra hours per week to do homework and labs.**

9. METHODS OF EVALUATION AND GRADES

Evaluation Methods:

Class attendance: 10%, Project: 10%, Homework: 25%, Midterm Exam: 25%, Final Exam: 30%

Note: No late submissions will be accepted.

Grades: A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: 0-59.

10. COURSE POLICIES

- Class attendance is **mandatory**. Students have to sign-in for each class.
- There are no make-up exams, unless with the consent of instructor.
- Late labs and homework assignments with receive late-penalties.
- **Cheating policy**: Students shall be guilty of violating the honor code if they:
  1. Represent the work of others as theirs.
  2. Use or obtain unauthorized assistance in any academic work.
  3. Give unauthorized assistance to other students.
  4. Modify, without instructor approval, an examination, paper, or report for the purpose of obtaining additional credit.
  5. Misrepresent the content of submitted work.

11. SPECIAL NEEDS (EEO/ADA):

Accommodation: If you a student with a disability who will require an accommodation to participate in this course, please contact me privately to discuss your special needs. You will need to provide me with documentation concerning your need for accommodations from EEO/ADA Office. If you have not registered with the EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY).

12. COURSE CALENDAR OR SCHEDULE

Week	Textbook	Homework Due	Remark
1	Course introduction & Student information collection		
2	Chapter 1, 2		
3	Chapter 2, 3	Chapter 1 Homework	
4	Chapter 4	Chapter 2 & 3 Homework	
5	Chapter 5	Chapter 4 Homework	
6	Chapter 6	Chapter 5 Homework	
7	Chapter 7	Chapter 6 Homework	
8	**3/7 (Monday)**	**Chamorro Heritage Day (no class)**	
	3/8 (Tuesday)	**Charter Day (no class)**	
	Chapter 8	Chapter 7 Homework	
9	Chapter 8	Chapter 8 Homework	
	Miderm Exam (Chapters 1-8)		
10	**Spring Break (3/21-3/26, no classes)**		
11	Chapter 9	Chapter 8 Homework	
12	Chapter 9, 10	**Project Proposal due**	
13	Chapter 10, 11	Chapter 9 Homework	
14	Chapter 11, 12	Chapter 10 Homework	
15	Chap 12,14	Chapter 11 Homework	
16	Chap 15	Chapter 12, 14 Homework	
17		Chapter 15 Homework	
	5/10 (Tuesday)	**project presentation**	
	5/12 (Thursday)	**project presentation**	
18	**5/17 (Tuesday, 8:00 AM**)	**project report due**	
	5/17 (Tuesday, 8:00 - 9:50 AM)	**Final Exam (Comprehensive)**	

Note: This class schedule is subject to change during the semester.

13. UOG Expected Student Learning Outcomes (December 2008)

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:
ILO-1: Mastery of critical thinking & problem solving
ILO-2: Mastery of quantitative analysis
ILO-3: Effective oral and written communication
ILO-4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO-5: Responsible use of knowledge, natural resources, and technology
ILO-6: An appreciation of the arts & sciences
ILO-7: An interest in personal development & lifelong learning

14. Computer Science Program Learning Outcomes

CS PLO-1: (GE) Demonstrate competence with Windows and basic MS Office applications especially MS WORD, EXCEL, and PowerPoint.

CS PLO-2: Demonstrate technical competence in Programming:

- Analyze problems and create algorithm/heuristic solutions.

CS PLO-3: Demonstrate technical competence in Programming:

- Develop these using computer-programming methodologies in several programming languages.

CS PLO-4: Demonstrate technical competence in Systems:

- Identify and analyze system requirements, criteria and specifications.

CS PLO-5: Demonstrate technical competence in Systems:

- Design and implement human sensitive/compatible computer based systems using appropriate tools, methods and techniques.

CS PLO-6: Demonstrate technical competence in Systems:
- Effectively manage, organize, and retrieve all forms of information.

CS PLO-7: Demonstrate technical competence in Systems:
- Evaluate system design solutions and their risks.

CS PLO-8: Demonstrate technical competence in Databases:
- Be able to design and implement a functional database.

CS PLO-9: Demonstrate technical competence in Networks:
- Be able to design, install, administer, and maintain a computer network.

CS PLO-10: Demonstrate technical competence in Networks:
- Be able to setup, install, and use two different operating systems and be able to program client-server applications for them.

CS PLO-11: Develop socially, professionally, and ethically utilize these technical skills to construct robust, secure, beneficial (commercial, educational, social) systems i.e. NO Spam, Phishing, Hacking, Deceptive, Fraudulent, Criminal, or Terroristic systems.

* Technical Competence means to be able to design, implement (build/code, test, debug), communicate effectively (in written, oral, and numerical forms), individually, and as part of a team.

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COURSE SYLLABUS

1. INSTRUCTOR / COURSE INFORMATION

Instructor: Dr. Frank Lee
Course Number and Title: CS303 Data Structures and Algorithm Analysis
Semester: Spring 2016
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Classroom: Computer Science Lab (Warehouse B2)
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Matrix for SLO, PLO, ILO and GEQR (See #13 and 14 below)

Course SLOs:	**Program Learning Outcomes (PLOs)**	**University Learning Outcomes (ILOs)**	**Method of Assessment**
CS303 SLO-1: Upon successful completion of this course, students will be able to describe the operation, implementation and performance of fundamental algorithms and data structures, and the relative merits and suitability of each for various applications.	CS PLO-2 CS PLO-3 CS PLO-4	ILO-1 ILO-2	Homework, programming assignments, and exams.
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CS303 SLO-4: Upon successful completion of this course, students will be able to motivate and explain efficient programming concepts, relevant alternatives and decision recommendations, in written form, to IT specialists.	CS PLO-4 CS PLO-5 CS PLO-6	ILO-3 ILO-5 ILO-6	Computer Programming Projects
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4. CONCEPTUAL STRUCTURE OF THE COURSE

- Review of Java object-oriented programming: encapsulation, polymorphism, inheritance
- Linear structures: stack, queue, array, linked list
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- Advanced topics: advanced linear structures, strings, advanced trees, graphs

5. FORMAT AND ACTIVITIES IN THE COURSE

- PowerPoint lectures
- In-class labs
- Programming assignments
- Project presentations

6. REQUIRED AND RECOMMENDED TEXTS AND/OR STUDY GUIDES

REQUIRED TEXTBOOK: Data Structures and Algorithms in Java.
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PUBLISHER: Pearson / Prentice Hall, 2006
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7. ADDITIONAL MATERIALS, RESOURCES AND/OR EQUIPMENT

- A **USB flash memory stick** to store your labs, homework, projects, exams, etc.
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8. LIST ASSIGNMENTS, TERM PAPERS, EXAMS, ETC.

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9. METHODS OF EVALUATION AND GRADES

Evaluation Methods:

Class attendance: 10%, Project: 10%, Homework: 25%, Midterm Exam: 25%, Final Exam: 30%

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  4. Modify, without instructor approval, an examination, paper, or report for the purpose of obtaining additional credit.
  5. Misrepresent the content of submitted work.

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Note: This class schedule is subject to change during the semester.

13. UOG Expected Student Learning Outcomes (December 2008)

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14. Computer Science Program Learning Outcomes

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CS PLO-3: Demonstrate technical competence in Programming:

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CS PLO-4: Demonstrate technical competence in Systems:

- Identify and analyze system requirements, criteria and specifications.

CS PLO-5: Demonstrate technical competence in Systems:

- Design and implement human sensitive/compatible computer based systems using appropriate tools, methods and techniques.

CS PLO-6: Demonstrate technical competence in Systems:
- Effectively manage, organize, and retrieve all forms of information.

CS PLO-7: Demonstrate technical competence in Systems:
- Evaluate system design solutions and their risks.

CS PLO-8: Demonstrate technical competence in Databases:
- Be able to design and implement a functional database.

CS PLO-9: Demonstrate technical competence in Networks:
- Be able to design, install, administer, and maintain a computer network.

CS PLO-10: Demonstrate technical competence in Networks:
- Be able to setup, install, and use two different operating systems and be able to program client-server applications for them.

CS PLO-11: Develop socially, professionally, and ethically utilize these technical skills to construct robust, secure, beneficial (commercial, educational, social) systems i.e. NO Spam, Phishing, Hacking, Deceptive, Fraudulent, Criminal, or Terroristic systems.

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UNIVERSITY OF GUAM
COLLEGE OF NATURAL AND APPLIED SCIENCES
COURSE SYLLABUS

1. COURSE / INSTRUCTOR INFORMATION

Course Number and Title: CS315 Introduction to Database Management Systems
Semester: Spring 2016
Class Hours: 9:30 - 10:50 AM, Tuesday & Thursday
Classroom: Computer Science Lab (Warehouse B2)
Course Homepage: **http://campus.uogdistance.com**

Instructor: Dr. Frank Lee
Telephone: 735-2826
E-Mail: flee@uguam.uog.edu
Office: Warehouse B6
Office Hours: 10:00-11:59 AM (M, W); 11:00 – 11:59 AM (T, Th)

2. CATALOG COURSE DESCRPTION / PREREQUISITE

The main purpose of this course is to learn the principles and usages of database management systems. This course covers the definition of file components, access methods, file operations, algorithms for efficient implementation of data structures, characteristics of bulk storage media for mainframe and microcomputer or minicomputer, introduction to database management systems. Prerequisite: CS200 or consent of instructor.

3. INTENDED STUDENT LEARNING OUTCOMES (LEARNING OBJECTIVE)

- Be able to evaluate a business situation and build a database application
- Creating and using a database
- Querying a database
- Maintaining a database
- Administrating a database system

Matrix for SLO, PLO, and ILO (See #15 and 16 below):

Course SLOs:	**Program Learning Outcomes (PLOs)**	**University Learning Outcomes (ILOs)**	**Method of Assessment**
CS315 SLO-1: Upon successful completion of this course, students will be able to design, develop and implement small professional databases using a specified relational database management system (DBMS).	CS PLO-4 CS PLO-5 CS PLO-6 CS PLO-7 CS PLO-8	ILO-1 ILO-2	Database design projects
CS315 SLO-2: Upon successful completion of this course, students will be able to correctly demonstrate the steps for data normalization when designing a database.	CS PLO-2 CS PLO-4 CS PLO-5	ILO-1 ILO-2	Homework, labs, exams and projects
CS315 SLO-3: Upon successful completion of this course, students will be able to utilize the SQL (Structured Query Language) fluently for application development.	CS PLO-2 CS PLO-4 CS PLO-6	ILO-1 ILO-2 ILO-5	In-class practices, homework, exams and projects.
CS315 SLO-4: Upon successful completion of this course, students will be able to describe and distinguish the features of	CS PLO-4 CS PLO-5	ILO-3 ILO-5 ILO-6	Homework and exams.

Object-Oriented DBMS and Distributed DBMS.			
CS315 SLO-5: Upon successful completion of this course, students will be able to describe and demonstrate database administration, security, transaction failure and recovery.	CS PLO-6 CS PLO-7 CS PLO-8	ILO-3 ILO-4 ILO-5 ILO-6 ILO-7	Homework, labs and exams.

4. CONCEPTUAL STRUCTURE OF THE COURSE

- Introduction
- Relational database model
- Database design
- DBMS functions
- Database administration
- Database management

5. FORMAT AND ACTIVITIES IN THE COURSE

- Lectures
- Microsoft Access Labs
- Group projects
- Exams

6. REQUIRED AND RECOMMENDED TEXTS AND/OR STUDY GUIDES

1. REQUIRED TEXTBOOK 1: Concepts of Database Management, 8th Edition
   AUTHOR: Phil Pratt & Mary Last
   Publisher: Cengage Learning, published in 2015.
   ISBN: 1-285-42710-6

2. REQUIRED TEXTBOOK 2: Microsoft Access 2013 Comprehensive
   AUTHOR: Phil Pratt & Mary Last
   PUBLISHER: Cengage Learning, published in 2014.
   ISBN: 1-285-16896-8

7. ADDITIONAL MATERIALS, RESOURCES AND/OR EQUIPMENT

- A USB flash memory stick to store your labs, homework, project, exams, etc.

8. LIST ASSIGNMENTS, TERM PAPERS, EXAMS, ETC.

- In-class Access labs
- Access homework assignments
- Textbook homework assignments
- Midterm and Final exams
- Group database project
- **You must spend at least 3 extra hours per week to do homework and labs.**

9. METHODS OF EVALUATION AND GRADES

Evaluation Methods:

Class attendance 10%, Project 10%, Homework 15%, Labs 15%, Midterm Exam 22%, Final exam 28%.

Note: No late submissions will be accepted.

Grades: 90-100: A, 80-89: B, 70-79: C, 60-69: D, 0-59: F

10. COURSE POLICIES

- Class attendance is **mandatory**. Students have to sign-in for each class.
- There are no make-up exams, unless with the consent of instructor.
- Late labs and homework assignments with receive late-penalties.

- **Cheating policy**: Students shall be guilty of violating the honor code if they:
  1. Represent the work of others as theirs.
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11. SPECIAL NEEDS (EEO/ADA):

Accommodation: If you a student with a disability who will require an accommodation to participate in this course, please contact me privately to discuss your special needs. You will need to provide me with documentation concerning your need for accommodations from EEO/ADA Office. If you have not registered with the EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY).

12. STUDENT WORKLOAD:

Each student has to spend at least 6 hours per week to do labs and homework.

13. CONTACT INFORMATION FOR TEACHER

Leave your name, phone numbers and emails to your instructor for emergency contacts.

14. COURSE CALENDAR OR SCHEDULE

Week	Textbook	Access Lab	Remark
1	Course introduction & student information collection		
2	Chapter 0		
3	Chapter 1	Access Chapter 1	
4	Chapter 2	Access Chapter 2	
5	Chapter 2, 3	Access Chapter 10	
6	Chapter 3	Access Chapter 3	
7	Chapter 4	Access Chapter 4	
8	**3/7 (Monday)**	**Chamorro Heritage Day (no class)**	
	3/8 (Tuesday)	**Charter Day (no class)**	
	Chapter 5	Access Chapter 5	
9	Chapter 5	Access Chapter 11	
	Midterm Exam (Chapters 0 - 5)		
10	**3/21 – 3/26**	**Spring Break (no classes)**	
11	Chapter 6	Access Chapter 6	
		Project proposal due	
12	Chapter 7	Access Chapter 7	
13	Chapter 8	Access Chapter 8	
14	Chapter 9	Access Chapter 9	
15	**Database Project**		
16	**Final Exam Review**		
	5/7 (Thursday)	**Project Presentation**	
17	**5/12 (Tuesday)**	**Project Presentation**	
	5/14 (Thursday)	**Project Presentation**	
18	**5/17 (Tuesday, 10:00 AM)**	**Project report due**	
	5/17 (Tuesday, 10:00 - 11:50 AM) Final Exam (comprehensive)		

Note: This class schedule is subject to change during the semester.

15. UOG Expected Student Learning Outcomes (December 2008)

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ILO-2: Mastery of quantitative analysis
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16. Computer Science Program Learning Outcomes

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- Identify and analyze system requirements, criteria and specifications.

CS PLO-5: Demonstrate technical competence in Systems:
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UNIVERSITY OF GUAM
COLLEGE OF NATURAL AND APPLIED SCIENCES
COURSE SYLLABUS

1. **COURSE / INSTRUCTOR INFORMATION**

Course Number and Title: **CS360 Introduction to Operating Systems**
Semester: Spring 2016
Class Hours: 8:10 – 11:50 AM, Friday
Classroom: Computer Science Lab (Warehouse B2)
Course Homepage: https://campus.uogdistance.com/

Instructor: Dr. Frank Lee; Office: Warehouse B6
Telephone: 735-2826; E-Mail: flee@uguam.uog.edu
Office Hours: 10:00 – 12:00 PM (M, W); 11:00 -12:00 PM (T, Th).

2. CATALOG COURSE DESCRPTION / PREREQUISITE

This course covers the following concepts: Operating system and services, file systems, memory management, process management, concurrent processes, communication, semaphores, monitors, deadlocks, resource management, processor and disk scheduling, security and protection systems. It includes labs in Windows, MS-DOS, Unix, or Linux. Prerequisite: CS202.

3. INTENDED STUDENT LEARNING OUTCOMES (LEARNING OBJECTIVE)

The learning objectives of this course are to teach students the following concepts and skills:

- The history and importance of operating system (OS) in a computer system
- The five major tasks of OS (i.e. process management, memory management, file management, I/O device management, and network management)
- Computer security and system management
- MS-DOS, Windows, Unix and/or Linux Operating Systems

Matrix for SLO, PLO, and ILO (See #13 and 14 below):

Course SLOs:	**Program Learning Outcomes (PLOs)**	**University Learning Outcomes (ILOs)**	**Method of Assessment**
CS360 SLO-1: Upon successful completion of this course, students will be able to describe the history and importance of the operating system (OS) in a computer system.	**CS PLO-4**	ILO-5	Class discussions, homework, and exams
CS360 SLO-2: Upon successful completion of this course, students will be able to completely describe the five major tasks of an OS (i.e. process management, memory management, file management, I/O device management, and network management).	**CS PLO-5**	ILO-3 ILO-5	Homework, programming assignments, exams and projects
CS360 SLO-3: Upon successful completion of this course, students will be able to describe the roles and importance of computer system management and security.	**CS PLO-4** **CS PLO-5**	ILO-3 ILO-5	homework, exams and projects.
CS360 SLO-4: Upon successful completion of this course, students will be able to describe the features, strengths, and weaknesses of different operating systems, such as batch, interactive, real-time, embedded, and parallel systems.	**CS PLO-4** **CS PLO-5** **CS PLO-6**	ILO-1 ILO-3 ILO-5	Homework and exams.
CS360 SLO-5: Upon successful completion of this course, students will be able to install, configure, and manage the MS-Windows, UNIX and Linux Operating Systems. Simulate and optimize some component parts of each OS.	**CS PLO-4** **CS PLO-5** **CS PLO-6** **CS PLO-7**	ILO-1 ILO-2 ILO-3 ILO-5	Homework, labs, projects and exams.

4. CONCEPTUAL STRUCTURE OF THE COURSE

This course blends operating systems theory and practice in a well-organized way. Its two-part approach explores operating systems theory and development in the first section, and discusses the three most widely-used operating systems (MS-DOS, Windows, and UNIX) in the second. Students will appreciate the many examples and illustrations found within the text. Specific topic coverage includes:

- Operating System Structure
- Processes
- Threads
- CPU Scheduling
- Process Synchronization
- Main Memory
- Virtual Memory
- File System Interface
- File System Implementation
- Mass Storage Structure
- I/O System
- Protection
- Security
- The Linux System
- Windows 7

5. FORMAT AND ACTIVITIES IN THE COURSE

- PowerPoint lectures
- In-class discussions
- Homework
- Research Projects
- Three Exams

6. REQUIRED AND RECOMMENDED TEXTS AND/OR STUDY GUIDES

REQUIRED TEXTBOOK: Operating System Concepts Essentials
AUTHORS: Silberschatz, Galvin and Gagne
PUBLISHER: Wiley, 2010
ISBN: 978-0-470-88920-6

7. ADDITIONAL MATERIALS, RESOURCES AND/OR EQUIPMENT

- A **USB flash memory stick** to store your labs, homework, projects, etc.
- Any user's manual for Unix, MS-DOS and Linux.

8. LIST ASSIGNMENTS, TERM PAPERS, EXAMS, ETC.

- Homework.
- Research projects.
- Programming.
- First, Second and Final Exams.
- **You must spend at least 4 extra hours per week to do homework.**

9. METHODS OF EVALUATION AND GRADES

Evaluation Methods:

Class attendance: 10%, Project: 10%, Homework: 10%, Programming: 10%,
First Exam 20%, Second Exam: 20%, Final exam: 20%

Note: No late submissions will be accepted.

Grades: 90-100: A, 80-89: B, 70-79: C, 60-69: D, 0-59: F

10. COURSE POLICIES

- Class attendance is **mandatory**. Students have to sign-in for each class.
- There are no make-up exams, unless with the consent of instructor.
- Late labs and homework assignments with receive late-penalties.
- **Cheating policy**: Students shall be guilty of violating the honor code if they:
  1. Represent the work of others as theirs.
  2. Use or obtain unauthorized assistance in any academic work.
  3. Give unauthorized assistance to other students.
  4. Modify, without instructor approval, an examination, paper, record, or report for the purpose of obtaining additional credit.
  5. Misrepresent the content of submitted work.

11. SPECIAL NEEDS (EEO/ADA):

Accommodation: If you a student with a disability who will require an accommodation to participate in this course, please contact me privately to discuss your special needs. You will need to provide me with documentation concerning your need for accommodations from EEO/ADA Office. If you have not registered with the EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY).

12. COURSE CALENDAR OR SCHEDULE

Week	Textbook	Homework	Remark
1	Course introduction & Student information collection		
2	Chapter 1	Homework 0 (DOS Lab)	
3	Chapter 2	Chapter 1 Homework	
4	Chapter 2		
5	Chapter 3	Chapter 2 Homework	
6	Chapter 4	Chapter 3 Homework	
7	Chapter 5	Chapter 4 Homework	
8	**3/7 (Monday)**	**Chamorro Heritage Day (no class)**	
	3/8 (Tuesday)	**Charter Day (no class)**	
		Chapter 5 Homework	**First Exam (Chapters 1-5)**
9	Chapter 6	Chapter 5 Homework	
10	**3/21 – 3/26**	**Spring Break (no classes)**	
11	Chapter 7	Chapter 6 Homework	
12	Chapter 8	Chapter 7 Homework	
13	Chapter 9	Chapter 8 Homework	
14	Chapter 10	Chapter 9 Homework	
		Term Project Proposal due	**Second Exam (Chap 6-9)**
15	Chapter 11	Homework10	
16	Chapter 12	Homework11	
17		Homework12	
	5/13 (Friday)	**Project Presentation**	
18	**5/16 (Monday)**	**Final Exam (comprehensive) due**	
	5/16 (Monday, 8 AM)	**Project report, PowerPoint file and programs due**	

Note: This class schedule is subject to change during the semester if necessary.

13. UOG Expected Student Learning Outcomes (December 2008)

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:
ILO-1: Mastery of critical thinking & problem solving
ILO-2: Mastery of quantitative analysis
ILO-3: Effective oral and written communication
ILO-4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO-5: Responsible use of knowledge, natural resources, and technology
ILO-6: An appreciation of the arts & sciences
ILO-7: An interest in personal development & lifelong learning

14. Computer Science Program Learning Outcomes

CS PLO-1: (GE) Demonstrate competence with Windows and basic MS Office applications especially MS WORD, EXCEL, and PowerPoint.

CS PLO-2: Demonstrate technical competence in Programming:
- Analyze problems and create algorithm/heuristic solutions.

CS PLO-3: Demonstrate technical competence in Programming:
- Develop these using computer-programming methodologies in several programming languages.

CS PLO-4: Demonstrate technical competence in Systems:
- Identify and analyze system requirements, criteria and specifications.

CS PLO-5: Demonstrate technical competence in Systems:
- Design and implement human sensitive/compatible computer based systems using appropriate tools, methods and techniques.

CS PLO-6: Demonstrate technical competence in Systems:
- Effectively manage, organize, and retrieve all forms of information.

CS PLO-7: Demonstrate technical competence in Systems:
- Evaluate system design solutions and their risks.

CS PLO-8: Demonstrate technical competence in Databases:
- Be able to design and implement a functional database.

CS PLO-9: Demonstrate technical competence in Networks:
- Be able to design, install, administer, and maintain a computer network.

CS PLO-10: Demonstrate technical competence in Networks:
- Be able to setup, install, and use two different operating systems and be able to program client-server applications for them.

CS PLO-11: Develop socially, professionally, and ethically utilize these technical skills to construct robust, secure, beneficial (commercial, educational, social) systems i.e. NO Spam, Phishing, Hacking, Deceptive, Fraudulent, Criminal, or Terroristic systems.

* Technical Competence means to be able to design, implement (build/code, test, debug), communicate effectively (in written, oral, and numerical forms), individually, and as part of a team.

CS365
COMPUTER ARCHITECTURE
UOG, Spring 2016

Instructor: Dr. Carl Swanson
Office: **SCI 226** Tel: 735-2827/25

Hours: MTWTh: 3:20-4:00pm; 5:50-6:40pm.

TEXTS. CS 365 Class Notes

DESCRIPTION: Over the semester, this course will look at a wide variety of computer architectures from several different viewpoints, primarily to identify and understand the principal parts of computer processors and storage systems, all within the PSM (Processor, Switch, Memory) framework. Both CISC and RISC ISP's, along with several unusual multi-processor designs will be studied.

During the course of the semester, students will construct an assembler to generate binary operation codes and operands. They will then input this into a software simulator of a basic CPU constructed during the second half of the semester.

Grading:

Content:		Evaluation:	
Homework	20%	90% -100% =>	A
Quizzes	25%	80% - 89% =>	B
Mid-Term	20%	70%-79% =>	C
Final Project	35%	60%-69% =>	D

Tentative Course Calendar is attached, but subject to change at instructor's discretion according to the needs of the class.

DISABILITY ASSISTANCE:

If you are a student with a disability who will require some accommodation to participate in this class, please contact me privately to discuss your specific needs. You will need to provide me with documentation from the University of Guam's EEO/ADA Office concerning your need for accommodation(s). If you have not yet registered with the EEO/ADA Office, please do so immediately by calling 735-2244/2243/2971 to coordinate your request for accommodation.

CS 365 –STUDENT LEARNING OBJECTIVES

2016.01.21

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

1. *Identify and describe all the major components of computer systems and CPU's.*
2. *Calculate and compare the duration of basic operations with machine cycles.*
3. *Describe the basic steps of a complete machine cycle and the common ways to speed up processor execution.*
4. *Describe how to construct CPU components from logic gates utilizing .the basic concepts of digital electronics.*
5. *Compare and contrast RISC vs. CISC, and single vs. multi-core CPU architectures.*

CS/CIS Program Learning Objectives:

I. Demonstrate competence with **Windows** and basic **MS Office** applications especially MS WORD, EXCEL, and PowerPoint.

II. Demonstrate t**echnical competence*** in **Programming**:
Analyze problems and create algorithmic/heuristic solutions.
Develop these using computer-programming methodologies in several programming languages.

III. Demonstrate **technical competence** in **Systems**
Identify and analyze system requirements, criteria & specifications.
Design and implement human sensitive/compatible computer-based systems using appropriate tools, methods and techniques.
Effectively manage, organize, and retrieve all forms of information.
Evaluate system design solutions and their risks.

**** Technical Competence** means to be able to: design; implement (build/code, test, debug); communicate effectively in written, oral, and numerical forms individually, and as part of a team.*

Course SLOs:	**Program Learning Outcomes (PLOs)**	**University Learning Outcomes (ILOs)**	**GE QR Learning Outcomes**	**Method of Assessment**
CS365 SLOs 1-5 (above)	**CS PLO's- I, II, III (above)**	**ILOs-1, 2, 3, ILOs-5, 6**	**QR-1, 2, 3 QR-4, 5, 6**	Homework assignments, quizzes and tests.

WHERE, for the ILO's of the University:

UOG Expected Student Learning Outcomes (December 2008)

Some of the expected fundamental knowledge, skills, and values that the University of Guam student will have demonstrated upon completion of any degree are:

ILO1: Mastery of critical thinking & problem solving
ILO2: Mastery of quantitative analysis
ILO3: Effective oral and written communication
ILO4: Understanding & appreciation of culturally diverse people, ideas & values in a democratic context
ILO5: Responsible use of knowledge, natural resources, and technology
ILO6: An appreciation of the arts & sciences
ILO7: An interest in personal development & lifelong learning

AND, for Quantitative Reasoning:

GE QR Learning Outcomes:
UOG students will be able to apply analytical and quantitative reasoning (QR) to address complex challenges and everyday problems by:

1. Interpreting information presented in a mathematical and graphical form;
2. Representing information in a mathematical and graphical form;
3. Effectively calculating using quantitative data;
4. Analyzing quantitative information in order to scrutinize it and draw appropriate conclusions;
5. Evaluating the assumptions used in analyzing quantitative data
6. Communicating quantitative information in support or refutation of an argument.

Tobacco-free/Smoke-free campus:

UOG is a tobacco-free, smoke-free, e-cigarette free and betel nut free campus. Thank you for not using the above products on campus, and for helping make UOG a healthy learning and living environment.

Academic dishonesty:

All assignments and tests must be your own work. The term "plagiarism" includes, but is not limited, to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Plagiarizing in your essay or cheating on tests will be punished with a mark of 0. If a plagiarized essay is not replaced with original work I will assign you a grade of F for the course. There will be no make up for tests. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml— but be careful when paraphrasing not to change the meaning of scientific information. Answers you write on the tests must come only from in your head or the information supplied in the test papers; anything else is cheating. The term "cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes (including electronic), getting information from another person via any kind of communication;
(2) dependence upon the aid of sources beyond those authorized by the instructor in

writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the University faculty or staff. If you need to use an electronic translator, you must discuss this with me in advance.

CS 365 CALENDAR

W #	*Starting Date 2016*	*Lecture Topic*
1	***1/22***	***Preliminaries; Concepts Survey***
2	***1/27***	***Review HW 8. SW Basics— VT1785***
3	***2/03***	***Early DP Strategies— VT 1786***
4	***2/10***	***von Neumann Architecture — 1 Control Unit, ISA, ALU***
5	***2/17***	***von Neumann Architecture — Ii Memory Systems***
6	***2/24***	***ISA—Instruction Set Architecture I***
7	***3/03***	***ISA—Instruction Set Architecture II***
8	***3/10***	***Digital Logic — 1: Basics, Combinatorial Circuits***
9	***3/17***	***Digital Logic — Ii: Sequential Circuits***
10	***3/23***	***SPRING BREAK***
11	***3/31***	***Digital Logic — Iii: the basic ALU***
12	***4/07***	***Interconnection Networks***
13	***4/14***	***RISC vs. CISC***
14	***4/21***	***Parallel Programming***
15	***4/28***	***Data Flow and Systolic Arrays***
16	***5/05***	***Future Horizons***
17	***5/12***	**Presentations**
18	***5/19***	**FINAL EXAM Happy Vacation!!**