

Maryland in Europe Graduate Programs
Bowie State University

Computer Concepts INSS 510

14 June – 3 August 2003

Stuttgart

Weekends: 14/15, 29 June; 19/20 July; 2/3 August

Time: 9:00 to 17:00

Instructor: Manfred Trostmann
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Germany
Email Address: mtrostmann@faculty.ed.umuc.edu
Consultation: Every weekend day a class is meet: 16:00 – 18:00
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Course Description: *Prerequisites: Undergraduate programming and college algebra, or permission of the instructor.* Provides an overview of basic computer concepts as they apply to MIS professionals. Emphasis is on basic machine architecture including data storage, manipulation, the human-machine interface including the basics of operating systems, algorithms and programming languages. In addition, the basic concepts of data organization including data and file structures are examined. Emerging trends in computer technology and their impact on organizational information systems are also discussed.

Course Goals/Objectives:

Goals: Upon completion of the course, participants should:

1. Understand basic principles of computer architecture
2. Understand major operating system concepts, including the interrelationships between operating systems and computer hardware
3. Understand concepts of programming languages
4. Understand computer logic and data representation
5. Be conversant with the terminology describing computer hardware and software
6. Understand how computer peripherals work
7. Understand basics of network architectures
8. Understand new developments in computer technology

Objectives: At the conclusion of this course the student will be able to:

1. Define the basic terms and processes related to computer systems architecture
2. Discuss components of an operating system
3. Describe the mechanisms by which an operating system manages hardware and software resources

4. Describe progression of operating system development
5. Define the relationship between application and system software
6. Describe the various types of programming languages
7. Describe the processes of translating and executing a program
8. Describe the process for developing applications
9. Describe basic methods of data representation
10. Describe the characteristics of data storage technology and how it influences the performance of computer systems
11. Describe the use of buffers and caches to improve computer system performance
12. Describe the use of data compression to improve computer system performance
13. Describe the concepts of file systems
14. Describe the characteristics and implementation of input and output devices
15. Describe the basic concepts of communication protocols
16. Summarize the advantages and disadvantages of distributed computing systems
17. Describe the technological trends in computer development
18. Discuss ethical issues in computing
19. Research current topics in computing

Text: Englander, Irv. (2003). *The Architecture of Computer Hardware and Systems Software: An Information Technology Approach* (3rd ed.), International Edition. John Wiley and Sons, Inc., ISBN 9-780471-36897.

Grading Information: Grades for this course will be assigned as follows:

Please feel free to modify the following for your own breakoffs, but maintain the grades of A, B, C, F(a), and F(n)

A	93% +	C	70 – 79%
B	80 – 92%	F	Below 70% F(a) or regular non-attendance F(n)

Course Requirements.

Midterm Examination:	30%
Final Examination:	40%
Project:	30%

Project Description:

The class will be organized into teams for the project completion, but only one student could also form a team. Both team and individual grades will be awarded for the project. If you prefer to work within a group try to form one. The maximum number of members should be three. The purpose of the project is to give the student an opportunity to bring the information and concepts learned in the course to bear on the topic of student's interest. The students themselves determine the subject of their projects and form their teams. Projects they might have at their home or work are a good starting point. The selection and definition of the subject is part of the project. The students have to submit their ideas and proposals to the instructor and he will give the approval for the final definition of the project.

For those students who have no idea, the subject of the project will be assigned by the instructor.

Course Schedule: The course is set up with 16 modules, each module corresponding to a regular weekday meeting or a half day on a weekend.

Module	Topics	Assigned readings/assignments due
1	Computer Systems	Chapter 1 / 29 June 03
2	Number Systems and Data Formats	Chapters 2 & 3 / 29 June 03
3	Integer Data	Chapter 4 / 29 June 03
4	Floating Point Numbers	Chapter 5 / 29 June 03
5	A Model of a Computer	Chapter 6 / 19 July 03
6	The CPU and Memory	Chapter 7 & 8 / 19 July 03
7	Input/Output and Peripherals	Chapters 9 & 10 / 19 July 03
8	Computer Systems, Clusters, and Networks; Examples of Systems MIDTERM	Chapters 11 & 12 / 19 July 03
9	Operating Systems	Chapter 13 / 2 August 03
10	Operating Systems	Chapter 14 / 2 August 03
11	Operating Systems	Chapter 15 / 2 August 03
12	File Management	Chapter 16 / 2 August 03
13	Programming Tools	Chapter 17 / 3 August 03
14	Examples of Operating Systems	Chapter 18 / 3 August 03
15	FINAL	
16		

Academic Policies: Please refer to the UMUC Maryland in Europe Graduate Catalog, available online at http://www.ed.umuc.edu/visit/pubs/catalog/grad_02-03.pdf or from your local Education Center, for information on the following:

Academic Integrity

Course Load

Exception to Policy

Grade Appeal Process

Make-up Examinations

Nondiscrimination

Students with Disabilities

CODE OF CIVILITY

To promote a positive, collegial atmosphere among students, faculty, and staff, Maryland in Europe has developed the following Code of Civility:

Respect

Treat all students, faculty, and staff with respect and in a professional and courteous manner at all times and in all communications, whether in person or in written communication (including e-mail).

Kindness

Refrain from using profanities, insults, or other disparaging remarks.

Truth

Endeavor to cite only the truth and not knowingly misrepresent, mischaracterize, or misquote information received from others.

Responsibility

Take responsibility for our own actions instead of blaming others.

Cooperation

Work together with other students, faculty, and staff in a spirit of cooperation toward our common goals of seeking and providing quality education.

Privacy

Strive to uphold the right to privacy and not talk about others.

Nondiscrimination

Respect the differences in people and their ideas and opinions and reject bigotry.

About Your Instructor: Manfred Trostmann got his Diploma in Electrical Communication from the Rhenish-Westphalian Technical University AACHEN and in Electrical Engineering from the University of Applied Sciences at Cologne. After working for DIGITAL EQUIPMENT CORPORATION (DEC) and Mobil Oil he managed the computer center of the University of Frankfurt and built the network for this university.

He has been teaching for University of Maryland for 15 years and belongs to the graduate faculty where he is teaching several classes in the MIS program in Germany.