

**Weatherhead School of Management**  
**Case Western Reserve University**  
**MIDS 411: Advances in Information Technology**  
Spring 1998  
(TH 6:00 - 8:00 p.m.)

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**COURSE OBJECTIVES AND APPROACH**

**Emerging Technologies:**

As we move into the 21<sup>st</sup> century, Information Technology (IT) is penetrating into every aspect of business organizations, changing the face of the competition. The most successful firms are often those that best leverage IT and IT-related assets. Wal-Mart came to surpass Sears in large part because of better use of IT from the store level back to supply chain management. Federal Express Customers tracked 800,000 packages in January 1997, via the World Wide Web, and the company is aiming for 100% electronic transactions.

These successful case studies clearly demonstrate the importance of skillful deployment and management of IT in critical operations of their business. A large part of such successful deployments depends on a clear understanding about what can and can't be done with IT. In this course, we will survey six "key" emerging technologies that will likely have significant impact on organizations: a) digital document and library, b) heterogeneous database and data mining, c) group support technology, d) telecommunication, e) user interface, and f) personal computing and the Internet.

**Virtual Team Project:**

Virtual team is an extreme case of the IT-enabled organizational structure. In a virtual team structure, face-to-face meetings among the team members are minimized, while the majority of the work will be done in an electronic space created using advanced telecommunication networks and group support technologies. We will learn about the virtual project team by working in such an environment throughout the semester with students from another university. Students will use a variety of advanced information technologies to communicate with virtual teammates. At the end of the semester, we will collectively share our experiences in virtual team environments to make our own conclusions about such technology-intensive work environments.

**Target Audience:**

This course is aimed at IS managers who are in a position to make evaluations of potential IT applications in managerial functional areas. Those interested in becoming IT-based management support consultants are encouraged to take the course. Students who are interested in taking this course should have taken an introductory class to IS or should be able to demonstrate an equivalent level of knowledge. No programming background is required, albeit preferred.

### **Instructional Modes:**

This course has two major components: in-class learning activities and out-of-class learning activities. The in-class learning activities will be largely driven by students' participation and panel discussions among industry experts and leading researchers from other universities in the topical areas who will be brought into the classroom via videoconferencing. In addition to traditional in-class learning activities, students will engage in expanded learning activities through the virtual team project. The course workload is intended to be slightly above average among business electives.

### **Course Objectives:**

- To acquire basic technical knowledge and terminology about six "key" emerging technologies.
- To experientially learn different telecommunication technologies in virtual project team environments.

### **REQUIRED COURSE MATERIALS**

- CWRU Note for the class.
- *The Digital Economy* by Don Tapscott, 1996, McGraw-Hill, ISBN: 0-07-062200-0
- A Lotus Notes account (will be assigned in the class) and some kind of Lotus Notes manual(s).

### **COURSE CONDUCT**

This course is designed to encourage active student participation in construction of knowledge -- both inside and outside of the classroom -- through IT-enabled collaborative learning among students. There will be primarily two different kinds of students learning activities: in-class and out-of-class.

#### **In-class Activity**

The course will discuss six different emerging information technologies and how they would affect the way people conduct their business. For each topic, the class will spend two weeks.

#### A. First class of the topic

For the first class of each topic, a student team will conduct a survey research of the topic, presenting the current status of the technology and speculating how the technology and its

business applications would evolve over the next five to ten years. Following the student team presentation, the class will engage brainstorming and discussion about the topic through Group Systems and Lotus Notes which will allow active construction of knowledge through dialogues among students, moderated by the instructor.

### B. Between the first and the second classes of the topic

Following the first class of each topic, students are expected to carry on the discussion about the topic through Lotus Notes database. Lotus Notes allows different-time-different-place communication. The results of this electronic discussion will be made available to the guest speaker who will speak about the technology in the second class of the topic (see below).

### C. Second class of the topic

For the second class of each topic, a guest speaker or a panel of experts on the topic will be brought into the classroom via videoconferencing. As the guest speaker talks through the videoconferencing, students will be asked to type in their questions or comments into a Lotus Notes database, which will be posted on a web page for the guest speaker. The guest speaker can pause any time during the talk to address the issues raised by the students.

## **GRADING**

The final grade for the course will be determined as follows:

- Exam 30%
- Class Participation 30%
- Team Presentation and Report\* 20%
- Virtual Team Project\* 20%

\* denotes group assignments.

Final letter grades are *not* determined according to a “curve” that specifies in advance the proportion of people to receive each grade. Instead, letter grades are determined according to the percentage of possible credit achieved by each student, computed by adding together scores for individual grading components multiplied by their percentage indicated above. This “criterion-based” grading is done to promote a cooperative climate in which assisting one’s classmates and/or studying in groups, which I strongly encourage, does not adversely affect one’s own letter grade. The course is graded using the letter grades A-F. Those earning 90% or more of the available credit will receive an A. Those earning 80% or more will receive a B. Those earning 70% or more will receive a C. Those earning 60% or more will receive a D. An incomplete will be given only for cases in which the student is unable to complete some parts of the course requirements due to verified illness or family emergencies, and must be completed within one academic semester to prevent the grade from being automatically converted to an F.

*The grade cutoff points may be adjusted downward, thereby raising student grades, if the final distribution of grades is unfavorably low.*

Exam: One in-class, open-book and open-note exam will be given. Exam will consist of several open-ended short essay questions. Absence from an exam will result in a grade of zero unless the exam is missed due to an illness. Make-up exams will only be provided in cases of verified illness or family emergencies.

Class participation: The class participation grade will reflect my judgment of the quality and quantity of students' contribution during and between class sessions over the course of the semester. Much research has found participative and active learning to be highly effective in terms of student learning and retention. There are few assigned readings for each topic. Also, there might be some additional readings that guest speakers might want you to read. You are expected to study the assigned course readings for a given day before coming to class. Students should be prepared to be called upon to discuss issues covered in the assigned readings.

Another important aspect of class participation is written participation using Lotus Notes throughout the semester. As noted earlier, students are expected to engage in continuous dialogues between the first and the second weeks of the topic. This continuous dialogue will carry over to a discussion with guest speaker(s) in the second class of the topic. As such, it is imperative to have active and meaningful electronic discussion through Lotus Notes between the classes. Your level of written participation (i.e., the number of your postings) and the quality of your written contribution will be evaluated by me at the end of the semester to determine your class participation. Verbal in-class participation and electronic written participation will be equally weighted for the final class participation grade.

Criteria for class participation credit include attendance, punctuality, level of preparation, professionalism, answering questions, discussing readings, and contributing to group activities. Tardiness disrupts the flow of class activities and often leads to having to repeat announcements or instructions. Entering and leaving the room during the class similarly distracts both students and instructors and conveys a disregard for the material being discussed. You should display your name cards throughout the semester to enhance interaction. I encourage you to engage in critical thinking, to challenge ideas without showing disrespect for others' ideas. Please use judgment when raising issues in class – do not waste the class's time on a personal matter – instead see the instructor or GA one-on-one. Effective participation has much more to do with the quality than with the quantity of your interaction. In other words, those who attempt to dominate air time for its own sake without contributing to the advancement of the discussion will *not* be rewarded for it. If for some reason on a particular day you were not able to prepare for that day's class, let me know at the beginning of the class and I won't call on you (to be used once during the semester without penalty).

If a student is unable to attend a class session, it is the student's responsibility to acquire the class notes, assignments, announcements, etc. from a classmate.

Team Presentation and Report: On the first day of the class, students will be randomly assigned into a team. Each team will then be assigned for one of the six technologies that we will study in this course. Each team has two responsibilities: a) conducting a survey research and presenting the results of their study in the first class of the topic and b) preparing white paper on the technology.

*Survey Research:* Use the Internet and go to the library. Identify key players in the field and study their products. Make your own “predictions” about the technology and recommendation to managers on how to best utilize the technology to increase their competitive advantage.

*Presentation:* Make an Arthur Andersen quality presentation. It should be professionally prepared and presented. Formal attire is required for the presentation. The presentation should be a mixture of technical and managerial briefing. Teams should be able to clearly present the current state of the technology (including key standards, key players and their products, and latest development in the field). Also, teams should be able to present the technical trends of the technology. Finally, teams should be able to advise the audience about the possible business applications of the technology.

*Report:* Each team is expected to produce a “white paper” on the technology they presented. The format of the report should be similar to that of presentation, i.e., a mixture of technical and managerial briefing. I encourage students to conduct a “PC-Magazine” type comparison among key products in the field, if possible. It also includes a glossary for technical terms used in the field. The final report should not exceed 2500 words double-space exclusive of the tables, exhibits, and any other appendices. All completed reports are due to me at the beginning of the class on April 23 and may be turned in at any time prior to that date. **Late project (for any reason) will be downgraded by 50% from the available grade.**

Each team member will evaluate the contribution of all team members (including him or herself). I expect all team members to be ethically fair, honest and professional in evaluating the contribution of their team members (i.e., clearly indicating extra efforts from team members or poor contributions as appropriate). 70% of the project grade will be adjusted based on the peer evaluation score.

Virtual Team Project: As part of experiential learning activities, students will engage in virtual team project with students from the University of Arizona throughout the semester. The presentation team will be divided into two teams and each sub-team will have its counterpart at Arizona. Teams will engage in a systems analysis and design project with their virtual teammates, communicating via Lotus Notes and Desktop Videoconferencing Systems. More detailed information will be available at the beginning of the semester.

## ADDITIONAL GENERAL POLICIES

### Grading Policy

It is important to recognize that a grade reflects another’s evaluation and judgment of your work. Different reviewers might evaluate a paper or exam differently. You are encouraged to meet me at anytime to discuss the strengths and weakness of your course work (i.e., to gain understanding of your performance). Grade appeals on course assignments and exams, however, are discouraged.

If you decide to appeal a grade, follow these steps:

1. Within seven days of receiving the grade, send me a written appeal. After seven days, I will not consider any grade appeals.
2. To file an appeal, prepare a written statement detailing why you are appealing your grade. Be sure to document your reasons by referring to grading standards, incorrect point calculations, etc.; stating simply that you feel you “deserve” a higher grade because you worked hard or based on a vague impression is not sufficient grounds for an appeal.
3. Submit the written statement together with the graded material.
4. I will consider your appeal and make a decision within a week.

Regarding final grades, changes will be considered only in cases of alleged “arbitrary and capricious grading,” which can be defined as “a. The assignment of a course grade to a student on some basis other than performance in the course; b. The assignment of a course grade to a student by unreasonable application of standards different from standards that were applied to other students that were in that course; or c. The assignment of a course grade by a substantial and unreasonable departure from the instructor’s initially articulated standards.” This policy is intended to assure that grading is consistent and fair to all students.

Two key ground rules apply: 1) you must appeal a grade within one week of the time the score for you exam, homework, or project is made available to you, and 2) class time will not be used to discuss grade appeals.

### **Academic Misconduct**

Academic misconduct is broadly defined as any act that violates the rights of another student or that involves misrepresentation of your own work. Scholastic dishonesty includes, but is not necessarily limited to, cheating on assignments or examinations; plagiarizing, which means misrepresenting as your own work any part of work done by another; submitting the same paper or substantially similar papers to meet the requirements of more than one course without the approval of all instructors concerned; depriving another student of necessary course materials (e.g., removing library materials that are not available on a check-out basis); or interfering with another student’s work. Evidence of misconduct will result in reduction of course grade and notification of the Weatherhead School of Management.

### **Accommodation for Students with Disabilities**

Any student in this class who has a documented visual impairment, cerebral palsy, hearing disability or any other disability should contact the professor during the first week of class to discuss and arrange any instructional accommodation that may be necessary. Student who would like to serve as volunteer tutors, readers, or note takers for students needing special assistance are encouraged to contact the professor during the first week of class.

## **INSTRUCTOR BIOGRAPHY**

**Youngjin Yoo** is Assistant Professor in Management Information and Decision Systems department at the Weatherhead School of Management at Case Western Reserve University. He holds a Ph.D. in information systems from the University of Maryland. He received his MBA and B.S. in Business Administration from Seoul National University in Seoul, Korea. He joined Weatherhead School of Management in fall 1997. Dr. Yoo was selected as a participant to 16<sup>th</sup>

Ernst & Young/International Conference on Information Systems Doctoral Consortium representing the University of Maryland at College Park and was the recipient of 1995 Frank T. Paine Award for Academic Achievement in Maryland Business School. His research interests include the role of information technology in distributed group decision making and learning processes, the role of leadership in IT-facilitated teams, and virtual teams. The results of his research have been presented at several national and international research conferences, including International Conference on Information Systems, Americas Conference on Information Systems, and Hawaiian Conference on Systems Sciences. He also analyzed and designed information systems for several leading Korean companies such as Poong San Metal Co. (world's largest coin blank manufacturer), Korea Telecomm, and Korea Water Resource Cooperation. His work was also published at leading academic journals such as *Academy of Management Journal* and *Information Systems Management*. As a born-again Christian, he is a proud father of two boys. During his off-hours, he enjoys swimming, reading, and simulation games. By the way, he has an official black belt in Tae Kwon Do.

## TENTATIVE CLASS SCHEDULE

| Week | Date    | Topic   | Guest Speakers   |
|------|---------|---|--|
| 1    | Jan. 15 | First day of the class  |  |
| 2    | Jan. 22 | Digital library and Optical technology (I)  |  |
| 3    | Jan. 29 | Database (I)  |  |
| 4    | Feb. 5  | Digital library and Optical technology (II)   | <ul style="list-style-type: none"> <li>• Dr. Ed Fox, Virginia Tech</li> <li>• Dr. Roberta Lamb, CWRU</li> </ul>  |
| 5    | Feb. 12 | Database (II)   | <ul style="list-style-type: none"> <li>• Dr. Louiqa Raschid, Univ. of MD</li> <li>• Mrs. Babara Hope, Univ. of MD</li> <li>• D. Rakesh Agrawal, IBM</li> </ul>                     |
| 6    | Feb. 19 | Group Technology (I)  |  |
| 7    | Feb. 26 | Group Technology (II)   | <ul style="list-style-type: none"> <li>• Dr. Joe Valacich, Washington State Univ.</li> <li>• Mr. Peter Guay, Microsoft</li> <li>• Mr. Peter Rothstein, Lotus Inistitute</li> </ul> |
| 8    | Mar. 5  | Telecommunication (I)   |  |
| 9    | Mar. 12 | Spring break  |  |
| 10   | Mar. 19 | Telecommunication (II)  | <ul style="list-style-type: none"> <li>• Dr. Thomas Vagun, UUNET</li> <li>• A guest from Lucent Technology</li> </ul>  |
| 11   | Mar. 26 | User Interface (I)  |  |
| 12   | Apr. 2  | User Interface (II)   | <ul style="list-style-type: none"> <li>• Dr. Jerry Lohse, Wharton School</li> <li>• Dr. Kent Norman, Univ. of MD</li> </ul>  |
| 13   | Apr. 9  | Internet and PC (I)   |  |
| 14   | Apr. 16 | Internet and PC (II)  | <ul style="list-style-type: none"> <li>• Mr. Mark Abel, Intel Corp</li> <li>• Mr. Steve Lichtman, AMS</li> </ul>   |
| 15   | Apr. 23 | Discussion about Virtual Team Project <ul style="list-style-type: none"> <li>• Team Report Due</li> </ul> |  |