TIM 50 - Business Information Systems

Introduction (Lecture 1)

Instructor: Terry Allen
UC Santa Cruz
9/26/2011

Most slides - and the better part of most other slides - are by Professor John Musacchio

TIM 50

Course Parameters:
- Monday and Wednesday 5:00-6:45 PM
- Stevenson Acad 150

- WEB PAGE:
  (write this down, go home, and bookmark it!)
  http://courses.soe.ucsc.edu/courses/tim50/Fall11/01
TIM 50

Instructor
- Terry Allen (terry_allen@hotmail.com)
  - Office Hours:
    - Monday and Wednesday, 7:00 p.m. to 8:00 p.m. (if necessary),
    - And Tuesday, TBD
    - Office# is also TBD

TAs
- TBD
  - Office Hours:
- Huascar Sanchez (hsanchez@soe.ucsc.edu)
  - Office Hours:

What is this class about?

Get the "big picture" of the business environment that you will enter in the future.

1) what are business processes
2) information systems used by companies to run their businesses
3) how they are connected
About this class: in a nutshell

**Business Processes**
- are the tasks or activities that companies use to produce goods or/and services

**Information Systems**
- computers, web, software
- support/enhance business processes.

What is this class about (example)?

- **Supply Chain Management (SCM)**
More Examples

- Customer Relationship Management (CRM)

Some Examples

- Supply Chain Management
- Customer relationship Management
- Inventory Control
- Transaction Processing
- ...
What is an information system?

- First let us answer: what is a system?
  - Interrelated components
    - Input
    - Processing
    - Output

What is an information system?

- Information system
  - A combination of people, hardware, software, networks...
  - ...that collects, transforms, and disseminates information in an organization.
What is Information Technology?

- It's the technology you use to create an Information System
  - Computer Hardware, Software, Networks, etc...

Status quo of businesses today

Global competitive environment operations (globalization)
- global competition
- information revolution
- knowledge worker
Global competition

- Design, manufacturing, materials, assembly, service, etc.
  - Examples: Nike, Apple
  - In different parts of the world
  - Why?
- Increased competition
  - Global markets vs. local
  - Pressures to be more efficient and effective

Information revolution

- Increased use of IS to create, deliver and use information
  - data, documents, voice, video
  - Global enterprise needs to share information quickly
    - Design, forecasts, material availability, etc.
    - Monitoring, Manage, Communicate
- Is IS the cause or result of globalization?
Knowledge worker

- Increasing dependence on information to do their work
- Create, acquire, process, synthesize, disseminate, analyze and use information
- Who are knowledge workers
  - Sales executive, production managers, product manager, financial analyst
- Use structured and unstructured information

Knowledge worker II

Knowledge work is non-routine, non repetitive
- Understand data and impact of work on others and impact of others’ work; big picture

Task workers: routine, structured tasks
- Customer service representatives, accounting clerks, insurance claims processor

Key skills
- Strategic thinking: big picture, process view
- Information literacy: find and use needed information
- Communication and collaboration: project team
Courses Objectives

- The objectives of ISM 50 are to understand
  - The needs of businesses
  - The role of information systems in supporting those needs
  - How information systems are designed
  - How information technology is evolving
  - How changes in technology can enable new ways of doing business.

Information Systems Management 50

- What it is not:
  - A programming class
    - (Though some simple programming may be required for some assignments and/or projects)
  - A detailed focus in any particular technology.
    - (A survey of IS technology landscape and its relation to business problems)
Who Should Take it?

Q: Are you considering a career in marketing, finance, accounting or start your own business? Have no idea what you want to do?

- ISM Majors, and those thinking of an ISM major
  - A survey of the ISM major.

- BME Majors
  - Seeking a basic understanding of technology and its role in solving business problems.

- CS, CE, and other engineering majors
  - Those seeking a higher level overview of what technologies are used for.

Course Pre-requisites

- No specific programming language knowledge required, though useful
- We will assume you know word-processing and PowerPoint
  - PowerPoint is easy to learn
  - We will assume you are motivated and eager to learn!
- Come to class having done the reading!
What comes first?

- Do business needs drive the design of technology?
- ...Or does the technology drive the design of a business?
- Both!

Course Organization

- Top Down (Roughly)
  - IT Terminology and IT History
  - Businesses and their needs
  - Technological Applications
  - Technology concepts
  - Important “building block” Information Technologies
    - Databases
    - Networks
- Case Studies Throughout
Reader 1 (pages from):

- **Author:**
  - David Messerschmitt, Professor of EECS, UC Berkeley

- **Focus on**
  - Technological concepts in computing and communications.
  - Applications.
  - Top down organization, like our course

Reader 2:

- **The reader contains**
  - Chapters 1 & 2 from “Management Information Systems” by James O’Brien
  - Case Studies

- **Both readers are available at the Bay Tree Bookstore**
Case Studies (in Reader 2)

- Examples of Businesses using Information Technology
- Illustrate the concepts we learn in the class
- The case studies are mostly from the Harvard Business School
  - Designed to stimulate classroom discussion in MBA classes

Supplementary Book

Essentials of Business Processes and Information Systems
Simha R. Magal, Jeffrey Word

Use case studies
Class Webpage

http://courses.soe.ucsc.edu/courses/tim50/Fall11/01

Contains
- General Class information
- Announcements
- Link to online forum
- Link to detailed description of class:
  http://courses.soe.ucsc.edu/courses/tim50/Fall11/ism50outline.html
  - Syllabus
  - Homework
  - Requirements/Guidelines for business paper, database project
  - Important dates

Syllabus (Tentative) ON Web Page

<table>
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<tr>
<th>Class #</th>
<th>Topics</th>
<th>Reading</th>
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<td>1</td>
<td>Class Introduction</td>
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<tr>
<td>2</td>
<td>IT History and Background</td>
<td>IT Management from 1960-2000 (reader pp 1-26)</td>
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<td></td>
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<td>Chapter 1 - Section II of O'Brien (reader pp 47-60)</td>
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<td>3</td>
<td>Competing with IT Cash Flows</td>
<td>Chapter 2 - Section I of O'Brien (reader pp 69-77)</td>
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<td>Cash Flow Handout</td>
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<td>4</td>
<td>Competing with IT (Cont'd)</td>
<td>Chapter 2 - Section II of O'Brien (reader pp 78-90)</td>
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<td>5</td>
<td>Business Processes, Frito-Lay Case</td>
<td>Frito-Lay Case (93-103 + figs)</td>
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<td>6</td>
<td>Enterprise Applications, Information Access Terms</td>
<td>Messerschmitt Ch 2.3 (38-50)</td>
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<td>Messerschmitt Ch 3.1-3.3 (59-82)</td>
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<td>Enterprise Applications (cont'd) Cisco Case</td>
<td>Cisco Case (114-124 + figs)</td>
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<td>E-commerce</td>
<td>Messerschmitt Ch 3.4-3.6 (83-98)</td>
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<td>Alibris Case (133-143 + figs)</td>
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<td>9</td>
<td>IT Concepts</td>
<td>Messerschmitt Ch 4 (107-132)</td>
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<td>Client Server Computing</td>
<td>Messerschmitt Ch 5 (139-154)</td>
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<td>Sun-N Tier Case (145-164 + figs)</td>
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<td>11</td>
<td>MIDTERM</td>
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Syllabus (cont’d)

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<th>Class #</th>
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<td>Modularity and Layering</td>
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<td>Computer and Comm. Industry</td>
<td>Messerschmitt Ch 7 (198-226)</td>
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<td>Database Management</td>
<td>Messerschmitt Ch 11.1 - 11.2 (325-335)</td>
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<td>Messerschmitt Ch 15.1 - 15.2 (415-425)</td>
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<td>15</td>
<td>Database Management Cont’d</td>
<td>MySQL Database Case (179-199 + figs)</td>
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<td>16</td>
<td>Networking</td>
<td>Messerschmitt Ch 18 (493-512)</td>
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<td>17</td>
<td>Networking (Cont’d)</td>
<td>Akamai Case (213-228 + figs)</td>
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<td>18</td>
<td>Applications and the Organization</td>
<td>Messerschmitt Ch 9 (273-289)</td>
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<td>19</td>
<td>Application Architecture</td>
<td>Messerschmitt Ch 10 (293-321)</td>
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<td>20</td>
<td>Application Architecture (Cont’d)</td>
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<td></td>
<td>Wrap Up, Final Review</td>
<td>American Airlines Case (165-171 + figs)</td>
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FINAL EXAM

Evaluation

- Exams (35%)
  - Midterm
  - Final
- Pop Quizzes (5%)
- Participation in class & online forum (10%)
- Oral Presentation / News Folios (5%)
- Business Paper (25%)
  - Proposal
  - Final Paper
- Database Assignment (10%)
- Weekly Homework (10%)
Evaluation

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• Exams

- Midterm (15%)
  - Wednesday, November 8, 8:00-9:45
- Final (20%)
  - Friday, December 8, 8:00-11:00

EXAM DATES ARE (very close to) FINAL

- Closed book

- A mix of multiple questions, short answers and 1 or 2 essays
- Computation
- One or two analytical questions
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• Pop Quizzes

- 3 quizzes, unannounced times
- Simple questions pertaining to the reading assigned for that day
- Only your top 2 quizzes will count
Evaluation

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• Participation

- We will have a lot of classroom discussion over the course of the quarter.
  - especially when we read case studies!
- This is an opportunity for you to
  - think through ideas
  - give feedback
  - learn from your classmates
- We will evaluate your participation
• Classroom Participation

- You earn 1 participation point in each class session in which you make an intelligent comment.
  - Participating more than once in a class session is encouraged, but does not earn more points.
- You also earn 1 participation point when posting intelligent comments in online discussions (forum)
  Discussion forum should begin operating next week!
- For full participation credit (10%), you need to earn 8 participation points over the quarter.

ID please...

- Please say your name every time you speak. Your fellow students (also) will thank you when they have to interact with you.
  - Also, email us a picture of yourself, a file named after you as follows FirstLast.jpg
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•Presentation/Folio

You will be assigned 

*either*
• Oral Presentations

- 5 minutes in length
- Assigned to present one of the following:
  - Summary of the case study we will discuss in class that day.
  - Recent news story involving business and information systems.
  - Your group’s business paper project

- PowerPoint Presentation.
  - E-mailed to me by 9pm the night before

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Presentation Evaluation

- Content of presentation
  - Did the case summary outline the most important aspects of the case study?
  - Was the news story relevant, and furthermore where the points most relevant to the class discussed?

- Delivery:
  - Organization
  - Voice Articulation
  - Professionalism
  - Timing
  - Eye Contact
  - Enthusiasm
Presentation Tips

- Ask the following question: Who is my audience and what is my major message?
- Don’t try to say too much for five minutes
- Avoid jargon – explain technical concepts with simple examples.
- Avoid reading from the slides
- Act interested!

Folios

- There are too many of you to have everyone give a presentation 😊
- Those who are not assigned a presentation will do a “news folio.”
- Task:
  - Collect 3 news articles that are relevant to the class
  - print/copy them
  - For each article, write a 200 word description of how the article relates to issues discussed in class.
- Due dates:
  - Article 1 - October 10
  - Article 2 - November 1
  - Article 3 - November 15

Hardcopies - drop in class
Presentation /Folio Summary

- You will be assigned *either* a news folio or an in-class presentation
- In either case this will be worth 5% of your grade.

Need Presentation Volunteers!

- Wednesday 9/28: 2 News Stories
- Monday 10/3: 2 News Stories
- Wednesday 10/8: 2 News Stories
- The rest of this quarter’s presentation assignments will be announced next week
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Write a paper about a company of your choice.

Pick a company for which information systems played a key role in making that company successful

- How did information systems help make the company successful?

Paper Organization

- Up to your group (Work in groups of 3 to 4)
- Chronologically, by topics, or some combination of both.

The paper should answer questions like:

- What industry does the company compete?
- What is the competitive environment like?
  - "Porter model" (competitors, substitute products, buyers, suppliers, new entrants...)
- How did your company use IT to gain a competitive advantage?
• Business Analysis Paper III

- How does the company use IT to support or enable its business processes and competitive strategies?
  - What technologies in particular does it use?
  - How much of the company’s success do you attribute to its use of IT and/or the company’s early adoption of IT into their business processes?

- Detailed Business Paper Guidelines will be posted on the website

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Citing Sources

- Plagiarism is illegal and cheating and will not be tolerated!!!
- More than thirty words verbatim must be cited.
- Any facts or figures that are not your own must be cited.
  - e.g. eBay’s revenues in US Revenues in 2002 were $1.39 billion [1].
Citing Sources

You must cite your sources in the body of the text!!!!

e.g.:
“Semiconductors have found a place in virtually every electronic device in existence. This helps explain why the industry was able to reach $200 billion in sales before a slump brought the figure back down in 2001” [1].

End Note:

Citing Sources

- The easiest way to lose points on your paper is to not cite sources!

- Guide on class website to help you cite your sources correctly.

- Talk to the TA or Instructor if you have questions.
Suggested sources of Information

- **Company website**
- **10K report**
  - (This is the annual report public companies file with Security and Exchange Commission.)
- **ABI/Inform article database**
  - A database of articles from magazines like “Business Week” and economics journals/newspapers.
  - Find it at: [http://library.ucsc.edu](http://library.ucsc.edu)
  - Click on “article database” on left margin.
  - Click on “Proquest Newspapers”
  - **Try this tonight!** And let us know if you have problems
- **Industry specific publications**
  - Example: Aviation Week
- **Books**
- **Good Magazines (The Economist)**
- **Consulting groups: Forrester, Gartner, ...**

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**Business Analysis Paper Preferences**

*** Due Monday October 3rd ***

- You are encouraged to try to form your own groups.
  - **However**, we want a mix of
    - Engineers and non-engineers
    - Experience levels
  - **So, we may modify the groups.**
- **As a group, turn in 3 things:**
  1. List of your proposed group members.
  2. List of companies you would like to study.
  3. Suggested person to do the 5 minute presentation on your group’s project.
    - **If you don’t have someone in mind to work with, turn in the above 3 things as an individual.**
Business Analysis Paper Preferences

*** Due Monday October 3\textsuperscript{rd} ***

- At least \textit{two} of your preferred companies must be from this list (yes, your list of preferred companies must contain at least that many names):
  - Southwest Airlines
  - Federal Express
  - Home Depot
  - Wal-Mart Stores
  - Charles Schwab
  - Amazon
  - eBay

- At least \textit{one} of your preferred companies must be \textit{absent} from the list above (yes, your list of preferred comp---oh, you get the idea)

With your preferences in mind, we will make the final company assignments to the groups.

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Business Paper Proposal

- As a group write a 2-3 page description of what you plan to investigate in your business paper!

- Show that you've done some research!

- Cite some facts, and some technologies and or strategies that you've heard about the company that you would like to investigate further.

- Remember to cite your sources properly!!!!

- **PROPOSAL DUE: October 28**
- **FINAL PAPER DUE: December 8**
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• Database Assignment

- Learn and Use database software

- An opportunity for “hands-on” experience without having to use advanced programming.

- Assignment will be done individually

- We will give you the details of the assignment sometime after the midterm.

- Database Tutorial later in the quarter
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Weekly Homework

- Approximately once every week or two.
- They will be announced and posted on the class webpage.
- Usually,
  - Questions from the textbook
  - Questions pertaining to Case Study Readings
- However, Homework 1 is to make a resume and cover letter!
- Individual hardcopies!!!
Homework 1

- Turn in **Both:**
  - A Resume
  - And Cover Letter
  - Due 10/2 (1 week from today)

**Resume should be:**
- One page (unless you have an incredibly rich and diverse background)

**Focus:**
- Education, Experience, Skills and Abilities
- What can YOU do for an employer?

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**Personal Resume Criteria**

- **Appealing look** (fonts, format, margins)
- **No Spelling mistakes**
- Avoid irrelevant information from too far in the past
- **One Page**

- It takes time to build a good resume...
Building Your Resume

Some things employers might look for:

- Academically Qualified.
- Well Rounded (include extra curricular activities)
- Summer Internships, or Part-time work During School
- Professional Presence (Society Memberships)
- Interested and Understanding of Employer’s Area.

Educational Content

- Degrees held or degrees you are currently working on.
  - Name of the university.
  - Degree Type and Program
  - (Expected) Completion date
  - GPA

- Include High School degree?
  - Maybe if you are a freshman or sophomore.
Work Experience Content

- Reverse Chronological Order
- Provide Complete Information
  - Company Name
  - Location (city and state)
  - Employment dates (from - to)
    - e.g., 1999 to Present if still employed
  - Job Title
  - Major responsibilities
  - Major accomplishments

Sample

BRAD A. KANG
Local address: 4123 Hargraves Hall • College Park, MD 20742 • (301) 314-5844
Permanent address: 9239 Belvior Court • Hyattsville, MD 20782 • (202) 537-4177
E-mail address: skstudent@umd.edu

OBJECTIVE
To obtain a co-op, summer, or part-time position in biomedical engineering or biotechnology.

EDUCATION
University of Maryland
B.S., Biological Resources Engineering December 2005

Virginia Polytechnic Institute & State University
Chemical Engineering coursework

EXPERIENCE

Engineering Co-op & Career Services Office
Peer Assistant
- Critique engineering student resumes.
- Provide information to engineering employers.
- Present introductory job skill workshops and orientation sessions.
- Maintain office databases and employer information files.

University of Maryland
Design Team Leader – Engineering Design 2004
- Managed a team of 5 students to work within project constraints and deadlines.
- Designed, fabricated, and evaluated a design prototype according to design specifications.
- Submitted prototype chosen to compete in the final design competition.
- Prepared and formally presented preliminary and final design package using Pro Engineer,
  Adobe Photoshop, Microsoft Excel, and Microsoft PowerPoint.
Sample

The O. Himmel Company (OHCO) Carnegie, PA
Chemist/Lab Technician
- Formulated new and improved existing epoxy printing inks used for protecting, coating, or decorating glass surfaces.
- Conducted tolerance experiments on OHCO products for resistance to ultraviolet degradation, solubility, melting and freezing points.
- Independently filled product orders of up to 50 pounds and coordinated shipping itinerary.
- Continued work during academic calendar breaks.

COMPUTER SKILLS

- Engineering Applications: AutoCAD-R13, Pro Engineer, TRS3D
- Language: C++
- Applications: Mathematica 5, Microsoft Office, Min Tab 11, Web Browsers
- Platforms: Windows 98/NT/2000/XP, Linux

ACTIVITIES

- Society of Plastic Engineers: Student Member 2002 - 2003 academic year

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Cover Letter

- A letter of introduction, to accompany resume.
- Include brief description of background

- Write it as if you were applying to take the class, or pretend like you are applying to a job.

- Format it as a business letter.
Cover Letter

Jane Smith
Chief Information Officer
ABC Corporation
Scotts Valley, CA 95000

September 21, 2005

Dear Ms. Smith:

I am writing to apply for the position of Web Architect at ABC Corporation. I feel especially well qualified for this position because of my extensive coursework in both programming and in information systems I have had as a Information Systems Management (ISM) student at UC Santa Cruz. I have also had experience designing the website of XYZ corporation … … I have enclosed a copy of my resume. Please contact me if you have any questions about my background. I look forward to hearing from you.

Sincerely,

Bob Brown

TO DO:

By Thursday (9/28):
- Read "IT Management from 1960-2000" in reader
- Read:
  - Chapter 1, Section II, of O’Brien book (this material is also in your Reader 2)
  - Chapter 1, Introduction, of Messerchmitt book (or Reader 1)

By Tuesday (10/03):
- Send me (cc: TA) your photo
- Business Paper Preferences
  - Group members, Companies, and suggested person to give presentation
  - Turn in as a group
- Resume & Cover Letter
  - Turn in individually
Some Terminology from Messerschmitt

Definitions

- **An application**
  - a software program that provides direct and specific value to a user or organization
  - Ex. Microsoft Word

- **A networked application**
  - distributes programs across 2 or more computers which collaborate in realizing an application.
  - *Ex. Distributed Database*
Definitions

- **Information Technology**
  - the suite of technologies that manage the storage, communication, and manipulation of information.

- **Infrastructure**
  - part of the information technology shared by many applications
    - Hardware - computers and the network
    - Software - operating system, middleware

Definitions

- **Middleware**
  - software falling between the operating system and the application.
    - For example, software components, applications based XML, or Web services
History of Computing

- **Centralized**
  - A few big mainframes to automate business functions such as payroll and accounting

- **Time-Shared**
  - Terminals added so many could access mainframe

- **Decentralized**
  - PCs on every desk

- **Networked**
  - Applications could be geographically distributed

Definitions

**Legacy Applications**

- Applications implemented in the technology of yesterday.
Next time

- Read “IT history from 1960-2000” (found in Reader 2)
  - Read Chapter 1 --section II of O’Brien (found in reader)
- Read Chapter 1 - Messerchmitt
  - (also found in Reader 1)