A. OVERVIEW

This course is a comprehensive introduction into project management. It will survey project management concepts as applied to information technology: principal topics include project selection, planning and business strategy; project scheduling, costs and control; interpersonal, leadership and managerial skills; quality, risk and change management. The general content of the course is focused on modern project management knowledge and the application of that knowledge. Specifically the content of this course is focused on the people, managerial and leadership skills necessary to deal with information technology projects.

This course is for all students who have an interest in project management. This course is for those who have an interest in learning about self-management and in improving their interpersonal skills. It is for those who are currently in individual technical roles who are considering making the transition to a management role at some point in the future and who need a fuller understanding of the skills required. It is for those who have been managing for some time and who wish to update their skills. Students benefiting from this course would include:

- Individual contributors interested in the concept of project management and related leadership and managerial skills.
- Individual contributors interested in making the transition to project managers.
- New and experienced managers desiring to learn modern project management concepts.

B. METHODS

This course provides an overview of modern project management concepts using a variety of methods.

- Lectures
- Mini-Lectures + Trigger Stimuli
- Teacher-Centered Questioning
- Teacher-Centered Class Discussions
- Term Papers
- Technology-Based Presentations (Video Clips)
- Case Studies
- Critical Thinking Discussion
- Laboratory Projects
- Independent Study/Research Projects
- Small Group Work Teams
- Student Journals

C. GOAL

The primary goal of this course is to provide the latest project management concepts and knowledge that can be applied to technical professionals in such a way that organizational effectiveness will be maximized.
D. OBJECTIVES

1. To understand the concepts of project management.

2. To understand the triple constraint and how it is applied.

3. To understand the project management phases.

4. To understand project management tools.

5. To understand that the tasks and services that project managers perform are uniquely different from those of others in an organization.

6. To understand the five functions that project managers perform:
   - Planning
   - Organizing
   - Staffing
   - Directing (leading and motivating)
   - Controlling

7. To understand the three roles of project managers in an organization:
   - Interpersonal role
   - Informational role
   - Decisional role

8. To understand and apply the three managerial skills
   - Conceptual skills
   - Human relations or interpersonal skills
   - Technical skills

9. To understand that the effectiveness of project managers is judged by the results that they obtain for the organization by using the resources available to them.

10. To understand that effective project managers are able to discern differences between situations and to apply methods whose appropriateness is contingent upon the dominant factors in each situation.
E. LECTURER

Ralph Brueggemann
HOME: 513/871-8477
BUSINESS: 513/558-0735
E-Mail: Ralph.Brueggemann@uc.edu
Web Site: http://homepages.uc.edu/~brueggrf/

F. TIME

Saturday: 1:00 - 3:30 PM

G. PLACE

Rievschl 423A

H. EXAMINATIONS

- Mid Term: May 1
- Final: June 5

Each examination will address ½ of the course. The mid-term examination will address the first ½ and the final examination the second ½ of the course. Both examinations will be comprehensive, covering the text and lecture.

I. TEXT


J. MAKE-UP EXAMINATIONS

1. Prior Approval

Students who are unable to make a scheduled examination should get prior approval from the instructor.

2. Unforeseen Events

If a student cannot attend an examination due to an unforeseen event, such as an illness, the instructor should be contacted as early as possible so that alternate arrangements can be made.

3. Make-up exam sessions

Make-up exam sessions are held in French Hall on selected Saturdays. Please contact the instructor.
K. EVALUATION

The composition of the course grade is as follows:

1. The student will work on 3-6 person teams to develop a **project**. 30%
   (Defined latter in syllabus)

2. Select one of the following projects: 10%

   a. Prepare a Term Paper that is up to 5 pages in length, typed and double-spaced. The student will need to submit an outline by the mid-term week. The paper will be evaluated based on content (50%), clarity (25%) and format (25%). The following are alternative topics:

      - Describe and Evaluate a Project Management Project
      - Describe and Evaluate an Information Technology Company relative to their Project Management
      - Describe and Evaluate a Leader, Manager or Coach that has applied Project Management.
      - Critique Case Study from Chapters
      - Pick a Relevant Topic (**Must be approved**)  

   Or

   b. Prepare a **project plan** using a project management software tool. There are a wide variety of tools available. Students familiar with spreadsheets may consider this as a substitute. Students will need to select a project that has at least 35 tasks.

   Or

   c. Prepare a student journal. You are required to take class notes, handouts, and summaries of in class discussion and related projects and organize them into a notebook by sections. You have complete control over how you organize the material.

      The student journal **must** include information about some aspect of an event or set of events in the students’ lives and how that event related to the course. The student must describe what value the course provided and how the course value (what was actually learned) applied to this event.

      The student journal will be evaluated based on completeness (50%) and organization and format (50%)

   Or

   d. Pick a relevant (Must Describe or Apply Project Management) Independent Study project (**Must be approved**)
K. EVALUATION (Continued)

3. Examination(s)

   a. Mid Term 30%
   b. Final 30%

   The exams will be comprised of multiple-choice questions that are based on both the
textbook and the lectures and discussion.

4. Grade Weight Summary

   a. Team Project (K1) 30%
   b. Project of your choice (K2) 10%
   c. Mid Term 30%
   d. Final 30%

L. MODEL AGENDA

A typical class will be comprised of the following events;

1. Presentation of agenda and goals.
2. Review of prior week key ideas.
3. Class material.
4. Discussion and student interaction to pursue specific areas of interest and
   encourage further thought and involvement.
5. Questions.
6. Post class review for student support.

M. Resources

Blackboard will be used for all course materials. Please make sure that you review it
periodically. Changes to the syllabus will be posted to Blackboard.

http://Blackboard.uc.edu

It is recommended that you bring a zip disk or diskette to class to save sample projects that are
completed during class.

N. Attendance Policy

You are expected to attend each class. If you are unable to attend, please notify the
instructor.
O. **Academic Dishonesty and Classroom Rules**

Academic dishonesty will be dealt with in accordance with the *Student Code of Conduct*.

The use of PCs during the class is only permitted during workshops and computer-based exams.

*In a studio setting, the use of PCs during a lecture will result 1-point reduction for each occurrence if unrelated to course work. The use of laptops for note taking is acceptable.*

During computer-based exams, the use of any written materials or electronic resources will results in a grade of F.

P. **TERMINOLOGY**

1. Management is the establishment and realization of goals through the cooperative efforts of all concerned persons.

2. Project Management is the coordinating, facilitating and taking responsibility for the successful completion of a project.

3. A project is a planned work activity, with an objective, to be accomplished to specifications, within a stated time frame, which will consume resources.
## COURSE ASSIGNMENT SCHEDULE

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>DATE</th>
<th>ASSIGNMENT</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Introduction to Project Management</strong></td>
<td>April 3</td>
<td>Projects in Contemporary Organizations</td>
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<tr>
<td></td>
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<td>Strategic Management and Project Selection</td>
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<td><strong>Secondary topics:</strong></td>
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<tr>
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<td>Project Management Concepts and Terminology</td>
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<td>Trends</td>
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<td>Business Strategic System Planning</td>
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<td>Software Engineering/Development</td>
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<td><strong>2. Project Management</strong></td>
<td>April 10</td>
<td>The Project Manager</td>
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<td>Project Organization</td>
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<td><strong>Secondary topics:</strong></td>
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<td>Management Schools</td>
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<td>Analysis (Interviewing), Design and Implementation</td>
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<td>Staffing, Recruitment and Employment Law</td>
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<td>Organizational Effectiveness and Behavior</td>
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<td>Organizations-Organizational Design</td>
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<td>Division of Labor-Job Design (Enlargement and Enrichment)</td>
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<tr>
<td><strong>3. Project Management</strong></td>
<td>April 17</td>
<td>Project Planning</td>
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<td>Conflict and Negotiation</td>
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<td>Fundaments of Management</td>
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<td>Delegation</td>
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<td>The Software Life Cycle</td>
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<td>Organizational Conflict and Stress Management</td>
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<td>SUBJECT</td>
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<td>4. Project Management</td>
<td>April 24</td>
<td>Budgeting and Cost Estimation Chapter 7</td>
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<td><strong>Secondary topics:</strong> Perception Communication Software Estimating Methods-Top Down, Bottom Up</td>
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<td>5. Mid-Term Examination</td>
<td>May 1</td>
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<td>6. Project Management</td>
<td>May 8</td>
<td>Scheduling Chapter 8</td>
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<td><strong>Secondary topics:</strong> Project Communication Management Uncertainty of Project Completion Time, Toward Realistic Time Estimates</td>
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<td><strong>Exercises</strong> Terminology Worksheet Exercise. Activity Network and Critical Path Exercise. Gantt Chart Exercise</td>
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<td>7. Project Management</td>
<td>May 15</td>
<td>Resource Allocation Chapter 9</td>
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<td><strong>Secondary topics:</strong> Determination of Critical Paths on Activity Networks Gantt Chart Exercise on Crashing The Structured Walk Through Project Reporting Project Meeting Management</td>
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</table>
### COURSE ASSIGNMENT SCHEDULE

<table>
<thead>
<tr>
<th>SUBJECT</th>
<th>DATE</th>
<th>ASSIGNMENT</th>
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<tbody>
<tr>
<td>8. Project Management</td>
<td>May 22</td>
<td>Monitoring and Information Systems Chapter 10</td>
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<td>Project Control Chapter 11</td>
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<tr>
<td>Project Auditing*</td>
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<td>Project Termination*</td>
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<td>Self Effectiveness (7 Habits)</td>
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<td>Team Building</td>
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<td>Human Behavior; Individuals and Groups: Their Needs</td>
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<td>Values (A base for leadership (integrity, fairness, sharing, equity))</td>
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<td>The boy who cried wolf.</td>
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<td>Interpersonal Skills and Communication</td>
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<td>Change Management</td>
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<td>Leadership, Leadership verses Management (Vision Story (Girl Drawing))</td>
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<td>Quality Improvement Programs, Quality Management</td>
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<td>Risk Management</td>
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<td>9. Project Management</td>
<td>May 29</td>
<td>Project Auditing Chapter 12</td>
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<td>Project Termination Chapter 13</td>
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<td><strong>Secondary topics:</strong></td>
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<td>Managerial Effectiveness, Motivation</td>
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<td>Creativity</td>
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<td>Pygmalion Effect, Aesop’s Fable P/PC Balance (Goose and Golden Egg)</td>
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<tr>
<td>10. Final Examination</td>
<td>June 5</td>
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</table>
Purpose

The purpose of this project is to help the student learn about project management by actually participating in a live project. This project is designed so that the student can track, in practice, what the course presents in concepts and application. This project will also help the students prepare for the examination on the text and the lecture material.

The team will be evaluated as group. The evaluation is based on whether or not the project team as a group meets the requirements. The instructor will determine this.

Process Requirements

Roles

- Team Members.
  - The Instructor will select a customer for each team
  - The Team should select its own Project Manager.
  - The Team should select a Project Auditor/Historian who will prepare the Audit Report.

Project Requirements

A final written report will be required. This report will include the following:

- Project Description
- Project Justification
  - Business Case
- Project Specification
  - Project Scope
  - Project Goals and Objectives
- Project Cost
- Project Planning and Scheduling
  - Project Master Plan (Software Development Plan)
    - The project plans is a set of project action plans.
  - Project Master Schedule
    - The Project Master Schedule is a high level Gantt Chart
  - Work Breakdown Structure
    - Detailed Schedules
      - Gantt Charts and/or
      - Network Diagrams
- Lessons Learned-Audit Report (Separately Produced)
  - Evaluate How the Team Met the Objectives

These requirements are the basis for completing the project.
Team Project-Project Guidelines

Project Team

The project team organization must be cross-disciplinary rather than functional. This means the team needs to work together. This means the team members should not work independently in parallel.

Customer

The instructor will assign a customer that will be selected from the students. This person will typically be a senior. The customer will take responsibility for writing the project description. The customer will participate in the project team.

Project Manager

The PM should give periodic progress reports to the class when requested. The PM should give a final oral report (5-10 minutes). It is acceptable to have co-project managers.

Evaluation

If there is an unequal sharing of the work, the individual members not sharing in the workload will receive at least a one-letter grade reduction. A form is included later in the syllabus for this purpose. All evaluations will be provided to the instructor. The project team will be evaluated as follows:

- The project team members including the customer actor will evaluate the Project Manager.
- The PM will evaluate each team member.
- The instructor will request that the class evaluate the other teams during the presentation of the project.

Project Auditor/Historian

The Project Auditor/Historian is responsible for monitoring and documenting the project teams’ and PM’s activities and procedures and compare and contrast them with the “theory” of good project management as detailed in the textbook and lectures. This person is not a member of the project team and does not work on the project itself. This person will provide a project report and oral commentary. This report will serve as the Lessons Learned, Audit Report mentioned above.

NOTE: The Project Auditor/Historian and the Customer will be the same person.
Project Requirement

Each team will implement an e-business web application. This will be a retail function that utilizes the web. You can choose the specific retail area to be implemented.

Generalities

The project should have a dollar value. There should be at least 3 persons involved. The duration should be at least 6 months.

Project Concept Conceived by Team

The team can conceive of a hypothetical project.

Project Concept Related to Work Situation

The project must not contain any proprietary information. The project must not have been already implemented.
REFERENCES


- Software Project Management, Walker Royne, Addison Wesley, 1998


- How to Manage a Successful Software Project, John Wiley and Sons, Sanjiv Purba, David Sawh, and Bharat Shad, 1995


- The Implementation of Project Management, Project Management Institute, Addison-Wesley, 1982.


- Dr. Deming, Rafael Aguayo, Carol Publishing, 1990.

- Quality is Free, Philip B. Crosby, Mentor, 1979


- The Seven Habits Of Highly Effective People, Stephen R. Covey, Simon and Schuster, 1989.


- First Things First, Stephen R. Covey, A. Roger Merrill and Rebecca R. Merrill, Simon and Schuster, 1994.


REFERENCES

- A Great Place to Work, Robert Levering, Random House, 1988
REFERENCES

- The 100 Best Companies to Work For in America, Robert Levering and Milton Moskowitz, Doubleday, 1993.
Artifacts Set

Requirements Set

- Vision document
- Requirements model(s)

Design Set

- Design model(s)
- Test model
- Software architecture description

Implementation Set

- Source code baselines
- Associate compile-time files
- Component executables

Deployment Set

- Integrated product executable baselines
- Associated run-time files
- User manual

Management Set

Planning Artifacts

- Work breakdown structure
- Business case
- Release specifications
- Software development plan

Operational Artifacts

- Release descriptions
- Status assessments
- Software change order database
- Deployment documents
- Environment
Sample Work Breakdown Structure

1.0 Inception
   1.1 Conception
   1.2 Project Selection
      Cost Benefit Analysis
   1.3 Planning
      Software Development Plan
         Project Action Plan
         Work Breakdown Structure (Tri-Level)
   1.4 Budgeting, Cost and Time Estimating
      Business Case (cost, schedule and profit expectations)
   1.5 Scheduling
      Project Master Schedule
         Gantt Chart
         Network Diagrams
   1.6 Software Requirements
      Vision Document
         Requirements Definition
         Project Scope
   1.7 Preliminary Software Description
      Executable Architecture Prototype

2.0 Elaboration
   2.1 Software Architecture Description
   2.2 Resource Allocation

3.0 Construction
   3.1 Monitoring and Control
   3.2 Software Implementation
      Detailed Design
         Detail Design Document
         Code
         Software
         Test
            Test Plan
            Test Cases
            Unit Test
            Test Report
            Integration Test
            Test Report
            Acceptance Test
            Quality Review
            Installation
            Software User Manual

4.0 Transition (Termination)
   3.1 Evaluation
   3.2 Audit
      Audit Report
   3.3 Termination/Completion
Action Plan
(Task Analysis Form, Work Statement)

Task Name: ________________________________________________________________

Task Number: ____________________ Deliverables:________________________

Specification:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Task/Sub Tasks:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Predecessors:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Key Constrains and Assumptions:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Resources Required:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

People:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Equipment:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Time
Earliest Time: _____________________ Latest Time:_________________________

Time Estimate:
Must Start ________________________ Must Finish:_________________________

Optimistic: To-Most optimistic time to complete a task
Pessimistic: Tp-Most pessimistic time to complete a task
Most Likely: Tm-Most likely time to complete a task

Weighted Average Time = (To + 4(Tm) + Tp)/6

Cost Estimate: $ ____________ (Direct Costs + Indirect Costs) * Days)
Sample Work Statement Type 1

Purpose: The purpose of this form is to request any development work.

Project Name: __________________________________________________________

Project Number: ______________ Deliverables:________________________

Specification:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Task/Sub Tasks:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Predecessors:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Key Constrains and Assumptions:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Resources Required:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

People:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Equipment:
______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

Time
Earliest Time: _____________________ Latest Time:________________________

Time Estimate:
Must Start ________________________ Must Finish:________________________

Cost Estimate: $ ____________ (Direct Costs + Indirect Costs) * Days)
Sample Work Statement Type 2

Purpose: The purpose of this form is to request any development work.

Project Name: ________________________________

Project Number: ___________________ Deliverables: ____________________

Specification:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Task/Sub Tasks:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Predecessors:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Key Constrains and Assumptions:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Resources Required:

______________________________________________________________

______________________________________________________________

______________________________________________________________

People:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Equipment:

______________________________________________________________

______________________________________________________________

______________________________________________________________

Time

Earliest Time: _____________________ Latest Time: _____________________

Time Estimate:

Must Start ________________________ Must Finish: _____________________

Optimistic: To-Most optimistic time to complete a task

Pessimistic: Tp-Most pessimistic time to complete a task

Most Likely: Tm-Most likely time to complete a task

Weighted Average Time = (To + 4(Tm) + Tp)/6

Cost Estimate: $ ____________ (Direct Costs + Indirect Costs) * Days)
Sample Work Statement Type 3

Purpose: The purpose of this form is to request any development work.

Project Name: ______________________________________

Project Number: ____________________ Deliverables:________________________

Specification:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Priority: ___    ____     ____
High    Medium     Low

Key Constrains and Assumptions:
____________________________________________________________________
____________________________________________________________________

Resources Required:
____________________________________________________________________
____________________________________________________________________

People:
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

Equipment Required:
____________________________________________________________________
____________________________________________________________________

Time
Earliest Time: ____________________   Latest Time:____________________________

Time Estimate:
Must Start ________________________   Must Finish:____________________________

Cost Estimate: $ ____________ (Direct Costs + Indirect Costs) * Days)
## Evaluation Form

<table>
<thead>
<tr>
<th>Knowledge, Attitude and Skills</th>
<th>Competency Level 1</th>
<th>Competency Level 2</th>
<th>Competency Level 3</th>
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<tbody>
<tr>
<td><strong>Project Management</strong></td>
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<tr>
<td>Project planning</td>
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<td>Project estimating</td>
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<td>Project scheduling</td>
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<td>Project control</td>
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<tr>
<td>Managing the triple constraint</td>
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<td>Project configuration management</td>
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<tr>
<td><strong>Managerial/Supervisory</strong></td>
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<tr>
<td>Evaluates staff</td>
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<tr>
<td>Coaches, mentors, counsels</td>
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<td>Employee development and training</td>
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<tr>
<td>Encourages teamwork and group achievement</td>
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<tr>
<td>Leads change, initiates</td>
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<td>Empowers staff</td>
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<td>Encourages diverse staff</td>
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</table>
# Knowledge, Attitude and Skills

<table>
<thead>
<tr>
<th>Competency Level 1</th>
<th>Competency Level 2</th>
<th>Competency Level 3</th>
</tr>
</thead>
</table>

## Technical Knowledge

### Software Development
- Defining customer requirements
- Overall design/architecture
- Data structure design
- Algorithm design
- Component design
- Software construction/coding
- Software testing

## Technical Knowledge

### System Administration
- Desktop software
- Desktop hardware
- Server software
- Server hardware
- Troubleshooting
- Networking
<table>
<thead>
<tr>
<th>Knowledge, Attitude and Skills</th>
<th>Competency Level 1</th>
<th>Competency Level 2</th>
<th>Competency Level 3</th>
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<td>Negotiation</td>
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<td>Ability to think strategically</td>
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<td><strong>Interactive skills</strong></td>
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<td><strong>Organizational Success</strong></td>
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<td>Teamwork/cooperation</td>
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<td>Customer orientation</td>
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<td>Continuous improvement</td>
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<td>Creativity/innovation</td>
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<td>Flexibility/adaptability</td>
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<td>Vision and conceptual thinking</td>
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## Knowledge, Attitude and Skills

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### Making People Matter

- Leadership
- Respect for others
- Interpersonal skills
- Supports diversity
- Integrity, honesty and fairness
- Builds trust
- Recognizes others’ achievements/contributions
- Understands others’ perspectives
- Conflict management
- Positive attitude/desire

### Job Effectiveness

- Planning/organization
- Problem solving/judgment
- Makes effective decisions
- Takes responsibility
- Achieves results
- Communicates effectively
- Dependability/attendance
- Job/organizational knowledge
- Productivity