

**GRADUATE SCHOOL OF COMPUTER AND INFORMATION SCIENCES NOVA
SOUTHEASTERN UNIVERSITY**

Course Syllabus

**DISS 725: The System Development Process (3 credits)
DISS 825: The System Development Process Project (4 credits)
Summer Institute 2003
July 13-December 11, 2003**

Instructor:

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Course website can be linked to through the instructor's webpage

DISS 725-System Development: Course Description:

The course concentrates on system development life-cycle models and strategies for all application development phases. Techniques, methods and tools for the analysis and specification of information systems, design principles, as well as measurement and quality factors are included. Classic, contemporary and emerging design methods and tools, validation and verification process, integration and acceptance testing, and reliability measurement are studied. Approaches to project estimating and planning, managing change and innovation, and facilitating computer and communications security are also discussed.

DISS 825-Project in System Development Process: Course Description:

Students pursue a research design, implementation, simulation study or project related to system development process(es). Projects may vary from paper/research projects to actual definition, design, implementation or development of a present or proposed system.

Source Material:

1. Required text and recommended texts
2. Reproduced Class Notes and Handouts

Required Text:

Pfleeger, S.L. (2001). *Software Engineering: Theory and Practice*, (2nd Ed). Upper Saddle River, NJ: Prentice-Hall

American Psychological Association (2001). *Publication Manual of the American Psychological Association* (5th Edition). Washington, DC: Author.

School of Computer and Information Sciences. *Dissertation Guide* (2002). Ft. Lauderdale, FL: Author.

Note: The Dissertation Guide is available from the GSCIS web site and is required reading for the course. All students must be familiar with its contents. All assignments must conform to

GSCIS format and guidelines as detailed in the Dissertation Guide. Failure to follow this will result in a reduction in assignment grades.

Recommended Text:

Highsmith, J. (1999). Adaptive Software Development: A Collaborative Approach to Managing Complex Systems. Dorset House: New York. ISBN: 0-932633-40-4

Beck, K. (1999). Extreme Programming Explained: Embrace Change. Addison-Wesley: Boston. ISBN 0-201-61641-6

The student should visit the class web site for additional information regarding references, Internet resources and current class information. These sites and links are intended to be a dynamic reference source for the class.

INSTRUCTIONAL METHODS

The class utilizes both GSCIS Cluster and Computer-Based Distance Learning concepts and facilities. All assignments must be submitted through NSU's Electronic Student (ESET). All correspondence must be conducted via NSU's E-Mail facility.

The class consists of mandatory GSCIS Cluster sessions and asynchronous Forums assignments. The student is responsible for all scheduled and assigned readings as well as all material presented in Forums discussions.

DISS 725: System Development – 3 credits**COURSE OUTLINE**

1. Introduction:
 - Introduction to Software Engineering
 - Software Development Processes
2. Development Process and Phases
 - System Requirements
 - System Analysis and Design
 - Subsystem and System Test
 - System Implementation and Maintenance
3. Process Issues
 - Planning and Project Management
 - Process Prediction
 - Process Assessment
 - Process Quality
 - Process Improvement

COURSE ASSIGNMENTS:

The student will be required to complete a detailed literature search and annotated bibliography, a review and critique of a high quality peer reviewed article, and research and author two high quality research papers from the course topics listed below. The Professor will provide specific information during the class meetings on the first day of class. Details will be posted on the course website.

Assignment 1: Literature Search & Annotated Bibliography: Students will be required to perform a thorough literature search in several areas of the System Development Process. In addition, annotated bibliographies will be required for selected articles.

Assignment 2: Article Review/Critique: Students will select one high quality peer reviewed article from assignment one and write a review and critique of the article. Points to be covered in the paper will be provided to the student.

Assignment 3 & 4: Research Papers: Students will be required to write two high quality research papers. The first paper will be on the SDLC and the second paper on any system development process topic as listed below. An Idea Paper must precede each research paper. The Idea Paper is required to secure agreement on topic, scope and magnitude of each paper. The Idea Paper should define: 1) the research topic or problem and, 2) the research approach. The **two-paragraph Idea Paper** will be submitted via ESET for comment and/or approval. Idea Papers must be approved by the instructor prior to continuing the research.

Additional details and requirements for these assignments will be posted to the class web page.

All work must be the individual effort of the student. Collaborative work may be undertaken only when specifically approved by the instructor. The words or ideas of others, where used, must be properly credited according to accepted standards for professional publications.

COURSE ASSIGNMENTS AND SCHEDULE

Assignment	Due Date	Weight (%)
1. Literature Search & Annotated Bibliography	8/17/03	25
2. Article Review	9/7/03	25
3a. Idea Paper – Research Paper 1	9/21/03	0
3b. Research Paper 1	10/17/03	25
4a. Idea Paper – Research Paper 2	11/2/03	0
4b. Research Paper 2	11/30/03	25

Note: All Idea Papers must be approved prior to starting the Research Paper. I encourage all students to submit their idea papers in advance of the due date to allow time for reword if the initial Idea Paper is not approved. No extra time will be given for the Research Paper if the Idea Paper is not initially approved.

Research Areas:

Seven research areas are available to the student:

- 1) SDLC (software development life cycle) – **Required for Research Paper 1;**
- 2) System requirements;
- 3) Planning, managing and operation of a project;
- 4) Unit and system test;
- 5) Quality and reliability;
- 6) Process assessment and improvement; and,
- 7) Maintenance and support.

Paper 1 on the software development life cycle must be submitted first.

Assignment Format:

The research papers should be formatted as noted in the GSCIS dissertation guide and should include:

- Title Page to include Class Name and Number (e.g. DISS 725 Spring 2003), Student Name, and Assignment Name/Topic and Number.
- A Certification of Authorship.
- Reference List (complete citations in proper order).
- Include appendices, glossaries, etc., as appropriate.

- New Times Roman, 12 point, double space, standard margins as noted in Dissertation Guide.
- Body length of approximately 15 - 20 pages, not including the cover, reference pages, appendices, excessive white space, tables and figures.
- Page length of approximately 55-58 lines
- APA and GSCIS format.

DISS 825 - PROJECT

Project Approach:

The student is responsible for proposing an appropriate and original project related to the system development process. Keep in mind that the amount and quality of work and the level of work must be consistent with that required for a typical four-credit doctoral-level course.

Students are expected to do their own work. Collaborative work may only be undertaken when specifically requested and/or approved by the instructor. The words and ideas of others, where used, must be properly credited according to accepted standards for professional publications.

Project Schedule:

The project will be completed in three stages with the due dates as follows:

Idea Paper	8/24/03
Project Proposal	10/15/03
Project Report	12/7/03

Project Idea Paper:

The student should insure that adequate resources, information and relevant skills are available before committing to the project. The Idea Paper is structured to assist the student in this area.

The Idea Paper (body) should be about six pages, double-spaced. Approval of the Idea Paper is an iterative process until student-instructor agreement is reached. As such, timely submission and feedback are critical.

Use the following as a guide. Clearly label each section with the appropriate heading or subheading.

1. Goal

What is the problem to be investigated? What is the paper's goal? Clearly explain what you hope to accomplish (not how). This deliverable must be measurable so it can be determined if the stated (or modified) goal was met.

2. Barriers and Issues

A short description of the problem(s) and the barriers that must be overcome and/or issues that must be resolved to complete the proposed project. If none, state so.

3. Relevance

What is the relevance of the project to system development and/or software engineering? Define the areas of system development or software engineering that will be emphasized. Clearly state any limitations in coverage. List pertinent references.

4. Plan and Approach

- Provide a more detailed description of what you hope to accomplish.
- Describe the techniques, methods, tools and facilities you plan to use.
- Explain how you plan to implement your project. d. Describe the form of the deliverables, e.g., documents, tools, reports, simulation, etc.

5. Milestones

List the major phases of the project. Define the (realistic) approximate dates when each major phase of the project will be completed. This is intended to provide you with a guide on when you need to complete each projected task and ensure that you keep on track in your timetable to complete the assignment.

The student will receive prompt feedback as to the appropriateness and approval of the project described in the Idea Paper.

Project Proposal:

- The Project Proposal is an expanded version of the Project Idea Paper and should follow the general format of the Preliminary Proposal as defined in the Dissertation Guide. In addition, it may contain appendices containing supporting documentation, graphs, charts, etc.
- The Project Proposal (body) should be about 20 pages, double-spaced.
- The Project Proposal will be integrated into the final Project Report.

Project Report:

- The Project Report is the final deliverable and represents the student's effort to propose, define and/or answer the goal/problem stated in the Idea Paper and the Project Proposal.
- After the Idea Paper and then the Project Proposal have been approved, any substantive changes must be coordinated with the instructor.
- The Project Report (body) should be about 40-50 pages, double-spaced.
- The student is encouraged to use the general structures and format defined in the latest GSCIS Dissertation Guide.

Grading Criteria for Course and Project:

All papers will be graded to the following criteria:

- Content (85%). Technical content, realistic assumptions and plausible conclusions. Doctoral level effort and content.
- Structure (10%). Logical approach to the problem/topic. Appropriate division of the paper by chapter headings. Structure also includes proper citations, reference sections and appendix, as required.
- Syntax (5%). Spelling, punctuation, grammar, etc. Note: I will not make corrections to papers for syntax defects. As a doctorate student you are expected to have mastered the English language and able to write a scholarly paper at the doctorate level.

In addition, student grades will be determined based upon performance in meeting the following requirements:

- Deliverables submitted reflects the required content and knowledge at a doctoral level.
- Compliance with specified course and project assignment requirements.
- Organization of deliverables.
- Scholarship (citations and reference list where appropriate).
- Scholarly writing style.
- Timely submission-See Late Submission policy below.
- A student may not do additional work or repeat an assignment or examination to raise a grade.

Grade Scale:

A	A-	B+	B	B-	C+	C	C-	F
100-94	93-90	89-87	86-84	83-80	79-77	76-74	73-70	69- below

Submission and Feedback:

All assignments will be submitted via GSCIS' ESET facility. Comments, suggestions and announcements will be provided via Email to the student's NSU account. Individual course status and grades will be provided via ESET. Additionally, the student is encouraged to actively participate in all FORUMS class discussions.

COURSE RULES:

Late Submission:

No extensions for assignment submission will be granted. All late submissions of assignments, regardless of the reason, will be penalized as noted below.

*Late submission of any assignment will be penalized by 2 % of the total course grade for each week of delay for a maximum of 4% for each assignment/submission. **No assignment will be accepted if submitted in excess of two weeks past the scheduled due date.*** The last assignment is due as scheduled and will not be accepted after the cutoff date.

General:

- Assignment product may be submitted only one time; multiple submissions are not permitted.
- Course requirements must be completed and posted on or before the specified due date and delivery time deadline.
- Due dates and delivery deadlines are defined as 11:59 PM in Fort Lauderdale, Florida on the date the course requirement is due.
- No course requirement products will be accepted after the last day of the semester unless an incomplete contract has been accepted.
- Students living in distance time zones or overseas must comply with the course delivery times stated above.
- Civility is required in public and private course communication.
- Work products submitted previously or developed for the workplace prior to this course may not be substituted for credit unless specifically approved by the Professor.

- Intellectual property referenced or directly cited in course products must be documented using the guidelines of the APA and GSCIS dissertation guide.
- The Professor reserves the right to make changes as may be required to this syllabus. Changes will be made to the online version of the syllabus. The online version of the syllabus is the ultimate source of the requirements for this course. Any changes made to the syllabus will be communicated to the student via email or postings to the class forum.

Class Forums:

The Professor and students will set up forums for the course for use. All students **MUST** check the forum for important information posted by the Professor. I recommend that you do this at least three times a week (every other day). Students' failure to receive important information posted on the forum is their responsibility and will not be acceptable as an excuse.

GSCIS Policy

Class attendance is MANDATORY at all class meetings. In addition, all GSCIS Policies as defined in the NSU Student Handbook, Program Catalogues, etc. also apply. In particular, attention should be drawn to the following:

1. Standards of Academic Integrity (For complete policy, see Code of Student Conduct and Academic Responsibility, p. 45. Also see the sections on student misconduct, p. 10, and the NSU Student Handbook.)

Each student is responsible for maintaining academic integrity and intellectual honesty in his or her academic work. It is the policy of the school that each student must:

- Submit his or her own work, not that of another person
- Not falsify data or records (including admissions materials)
- Not engage in cheating (e.g., giving or receiving help during examinations, acquiring and/or transmitting test questions prior to an examination)
- Not receive or give aid on assigned work that requires independent effort
- Properly credit the words or ideas of others according to accepted standards for professional publications.*
- Not use term paper writing services or consult such services for the purpose of obtaining assistance in the preparation of materials to be submitted in courses or for theses or dissertations
- Not commit plagiarism (*Webster's* defines plagiarism as "stealing or passing off ideas or words of another as one's own" and "the use of a created production without crediting the source.")*

*When using the exact words of another, quotation marks must be used for short quotations (fewer than 40 words), and block quotation style must be used for longer quotations. In either case, a proper citation must also be provided. When paraphrasing (summarizing, rewriting, or rearranging) the words or ideas of another, a proper citation must be provided. *The Publication Manual of the American Psychological Association, Fifth Edition*, contains standards and examples on quotation methods (pages 117 and 292) and on citation methods (pp. 207–214).

Extreme caution must be exercised by students involved in collaborative work to avoid violation of this policy.

See Catalog for *Policy on Acceptable Use of Computing Resources*, and *Policy on the Use of Material in Web Pages*.

2. Writing Skills

Each student must demonstrate proficiency in the use of the English language in all work submitted for this course. Grammatical errors, spelling errors, and writing that does not express ideas clearly will affect your grade. The professor will not provide remedial help concerning writing problems that you might have. Students who are unable to write correctly and clearly are urged to contact their program office for sources of remedial help.

3. Communication by Email

Students must use their NSU email accounts when sending email to faculty and staff and must clearly identify their names and other appropriate information, e.g., course or program. When communicating with students via email, faculty and staff members will send mail only to NSU email accounts using NSU-recognized usernames. Students who forward their NSU-generated email to other email accounts do so at their own risk. GSCIS uses various course management tools that use private internal email systems. Students enrolled in courses using these tools should check both the private internal email system and NSU's regular email system. NSU offers students Web-based email access. Students are encouraged to check their NSU email account daily.

4. The Temporary Grade of Incomplete (I)

The temporary grade of Incomplete (I) will be granted only in cases of extreme hardship. Students do not have a right to an incomplete, which may be granted only when there is evidence of just cause. A student desiring an incomplete must submit a written appeal to the course professor at least two weeks prior to the end of the term. In the appeal, the student must: (1) provide a rationale; (2) demonstrate that he/she has been making a sincere effort to complete the assignments during the term; and (3) explain how all the possibilities to complete the assignments on time have been exhausted. Should the course professor agree, an *incomplete contract* will be prepared by the student and signed by both student and professor. The *incomplete contract* must contain a description of the work to be completed and a timetable. The completion period should be the shortest possible. In no case may the completion date extend beyond 30 days from the last day of the term for master's courses or beyond 60 days from the last day of the term for doctoral courses. The *incomplete contract* will accompany the submission of the professor's final grade roster to the program office. The program office will monitor each *incomplete contract*. If a change-of-grade form is not submitted by the scheduled completion date, the grade will be changed automatically from I to F. No student may graduate with an I on his or her record. The grade of I does not apply to master's thesis or doctoral dissertation registrations.

5. Grade Policy Regarding Withdrawals

Course withdrawal requests must be submitted to the student's program office in writing (via postal mail or email) by the student. Requests for withdrawal must be received by the program office at least three weeks prior to the last day of the term. Program offices will publish specific withdrawal deadline dates for each term (see Academic Calendar on page ii of the catalog). Withdrawals sent by email must be sent from the student's assigned NSU email account. Requests for withdrawal received after 11:59 p.m. est on the withdrawal deadline date will not be accepted. Failure to attend classes or participate in course activities will not automatically drop or withdraw a student from the class or the university. Students who have not withdrawn by the withdrawal deadline will receive letter grades that reflect their performance in the course(s). When a withdrawal request is approved, the transcript will show a grade of W (*Withdrawn*) for the course. Students with a history of withdrawals risk dismissal. Depending on the date of withdrawal, the student may be eligible for a partial refund. For a complete list of withdrawal deadline dates, please see the academic calendars located at: http://www.scis.nova.edu/NSS/pdf_documents/AcadCal.pdf