

Nova Southeastern University
Graduate School of Computer and Information Sciences
Course Syllabus-revised 9/22/03
MMIS 640 – System Test & Evaluation- 3 credits
Fall 2003, September 22 – December 12, 2003, online

Instructor:

Frank W. Nasuti, Ph.D., CPA, CFE
Adjunct / Visiting Professor
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Note: The preferred method of communication to me is through email. I am listing my NJ home office number and fax for emergencies only, or if you cannot contact me by email for some reason. You SHOULD NOT call me to tell me that you cannot send an assignment in on time or for discussions that can be handled by email.

Office hours: Since this is an online course, there are no office hours. However, you may email me at any time to discuss anything that you like. I check my email daily, so I should respond to your email within 24 hours.

Instructor / Class Web Site: <http://www.scis.nova.edu/~nasutif>

Class Location and Format:

This class is an online course and will be conducted through the Internet, the World Wide Web (WWW) and through the NSU/GSCIS website.

The course forum environment must be consulted by students a minimum of three times each week. Weekly access and weekly written participation in the course forum is a course requirement. No online synchronous classes or activities are scheduled for this course. The course forum will be available throughout the term for peer to peer and student/ professor communications.

Class Hours: not applicable

Class Web Site: <http://www.scis.nova.edu/~nasutif>

Course Description:

An analysis of the verification and validation process. Methods, procedures, and techniques for integration and acceptance testing. Reliability measurement. Goals for testing. Testing in the small and testing in the large. Allocation of testing resources. When to stop testing. Test case design methods. Black box software testing techniques including equivalence partitioning, boundary-value analysis, cause-effect graphing, and error guessing. White box software testing techniques including

statement coverage criterion, edge coverage criterion, condition coverage criterion, and path coverage criterion. Test of concurrent and real-time systems.

Required Textbook(s):

Title:	SOFTWARE TESTING IN THE REAL WORLD - Required
Author:	EDWARD KIT
ISBN:	0201877562
Edition:	1995
Publisher:	ADDISION-WESLEY

Optional Textbook(s):

Title:	Just Enough Software Test Automation - Suggested
Author:	Mosley, D. & Posey, B.
ISBN:	0130084689
Edition:	1st
Publisher:	Pearson/Prentice Hall PTR

Required Software:

- Internet access using any ISP for access to the GSCIS and class website.
- I prefer that all assignments be written in a Microsoft Office product, including Word, Excel, and Powerpoint. You may also submit assignments in pdf format. If you do not have access to these products, send me a sample of the file for the product you have to see if I can open it and read it at least two weeks before the first assignment is due.

Exit Competencies:

Upon completion of this course, the student will develop a good understanding of the software testing process, including:

- The essentials of software testing;
- The state of the practice processes for software testing;
- A framework for improving the software testing process;
- What, when and how to test;
- An understanding of the different types of software testing;
- An analysis of the verification and validation process;
- Methods, procedures, and techniques for integration and acceptance testing;
- Reliability measurement;
- Goals for testing;
- Testing in the small and testing in the large;
- Allocation of testing resources;

- When to stop testing;
- Test case design methods;
- Black box software testing techniques including equivalence partitioning, boundary-value analysis, cause-effect graphing, and error guessing.;
- White box software testing techniques including statement coverage criterion, edge coverage criterion, condition coverage criterion, and path coverage criterion; and
- Testing of concurrent and real-time systems.

Course Outline:

1. Software testing process
 - The six essentials of software testing
 - The state of the art and state of the practice in software testing
 - Clean-sheet approach
2. Framework for test process improvement
 - Establishing a practical perspective
 - What, when and how to test
 - Critical disciplines: framework for testing
3. Testing methods
 - Verification testing
 - Validation testing
 - Controlling tasks, deliverables, and chronology
 - Software testing tools
 - Measurement
4. Managing test technology
 - Organizational approach to testing
 - Current practices, trends and challenges
5. Standards relevant to software engineering and testing

Grading Weights

Tasks/Assignments	Weight
Research Paper 1	40%
Research Paper 2	40%
Forum Participation	20%

Note: The level of forum participation will be discussed by me in the forum.

Schedule:

	Readings	Assignment 1 Forum Postings	Assignments 2-3 /Exams	Due Date
Week 1	Chapter 1-3	Forum-1: Introduce Yourself		9/28
Week 2	Chapter 4-6			10/5
Week 3	Chapter 7-9	Forum- 2		10/12
Week 4		Forum- 3:		10/19
Week 5	Chapter 10-12	Forum- 4 Post Forum 2-4 to ESET		10/26
Week 6	Chapter 13-14		Research Paper 1 on Software Testing	11/2
Week 7		Forum-5		11/9
Week 8	Special readings TBA	Forum-6		11/16
Week 9	Special readings TBA	Forum-7		11/23
Week 10		Post Forum 5-7 to ESET		11/30
Week 11	Special readings TBA		Research Paper 2 on Software Evaluation	12/7
Week 12		Forum-Final Posting		12/12

Instruction Methods and Tools:

- Internet (Required for online courses)
- Graduate Student Forum for instruction, discussions, participation, etc
- ESET for submitting assignments

Assignments are to be handed in through the ESET web-based utility. Please type each question first, and then the answer. Every submission must have a header that contains your name, usercode, and the assignment number. Each assignment must be handed in as one submission through ESET. They must be submitted through ESET by midnight of the date due (EST). Directions for submitting work through the Web-based Electronic Student (ESET) and directions for correct use of Forums can be

found on the CD-ROM given to all students or at the Online Orientation at:
<http://scis.nova.edu/Orientation/index.html>

- Nova Southeastern University Online Library (for research)

Forums

Assignment one is an ongoing assignment throughout the semester and used to communicate between the instructor and students for discussion of readings, assignments, etc.

Throughout the semester each student will be required to make two postings to the Forum:

1. A **primary** posting that responds to one of several chapters/topics selected by the Professor:
2. A **secondary** posting that is a short response to one of your peer's primary postings.

The steps required for successful completion of the forum posting will be:

1. Read the assigned chapters of the textbook.
2. Use your word processor to create your primary posting.
3. Save your postings as a word doc. You will need to submit them through ESET s directed in the schedule as one document for the previous three postings.
4. Copy and paste your primary posting into the correct discussion forum.
5. Post a secondary posting- a short response to one of your peer's primary postings.
6. On designated due dates, submit your three previous forum postings as one document with your name, course and GSCIS Id on the cover page..

Research Papers

Students will be required to write two graduate level research papers in the area of software testing and software evaluation. Details will be provided on the professor's website during the semester.

Grading Criteria:

Student grades will be determined based upon performance in meeting the following course requirements:

- Deliverable submitted reflects the required content and knowledge.
- Compliance with specified course assignment requirements.
- Organization of deliverables.
- Scholarship (citations and references list where appropriate).
- Scholarly writing style.

- Timely submissions- Assignments submitted after the due date deadline will be subject to a late penalty. The late penalty will be applied to submission beginning on the first day following the due date deadline. See Late Submission policy below.
- Each forum will remain open for two weeks; once a forum is closed it may not be contributed to.
- A student may not do additional work or repeat an assignment or examination to raise a final grade.

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.**
- No assignment will not 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.

Grading Scale:

A	A -	B+	B	B-	C+	C	C-	F
100-94	93-90	89-87	86-83	82-80	79-77	76-73	72-70	69-BELOW

Note that this grading scale does not contain a grade of "D". This reflects compliance with the SCIS grading scale that appears in the 2001 - 2002 SCIS Graduate School Catalog.

Class/Course Rules:

- Course postings and assignment product may be submitted only one time; multiple postings and assignment submissions are not permitted.
- Course requirements must be completed and posted or submitted on or before specified due date and delivery time deadline.
- Due dates and delivery time 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 this course time and time and due date deadline policy.
- Civility is required in public and private course communications.
- Work products submitted previously or developed for the workplace prior to this course may not be submitted for credit.
- Intellectual property referenced or directly cited in course products must be documented using the guidelines of the APA and GSCIS dissertation guide.

In addition students should refer to the school's catalog for all other academic policies. See http://www.scis.nova.edu/NSS/pdf_documents/Catalog_2002_2003.pdf

SCIS Policy:

- 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. SCIS 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