

CYBR410: Systems Assurance

College of Graduate and Continuing Studies, Norwich University

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Course Description

3 credits

This course focuses on the design considerations involved with the security of site design. The course will also provide an understanding of the Levels of Trust and system accreditation/certificate processes. Life cycle management of software, hardware, and physical plant, from planning through destruction will be examined and reinforced using case studies. Additionally, understanding of the variety of security systems involving computers and networks and an ability to evaluate vulnerabilities will be discussed.

Course Outcomes

Prior to this course students have developed some level of understanding of both information assurance and management of information assurance. This course is used to take an in-depth view of the Risk Management Framework that assures information systems for use in both government and private organization's enterprise architecture. Students will read and understand current policy and then through case studies will evaluate if organizations have effectively implemented the security controls.

Students who complete the course will be able to:

1. Interpret and explain the laws, policies, regulations and executive orders that influence the decisions based on risks to information systems in organizations both private and public.
2. Analyze and evaluate the security controls in use for assuring information systems for both governmental and private sector uses.
3. Break down and describe the six steps of the Security Life Cycle of the Risk Management Framework.
4. Evaluate and critique organizations current policy and whether they have met the intent of the Risk Management Framework effectively.
5. Interpret and explain the Evaluation Assurance Levels.

Weekly Outline

The weekly breakdown of your course is:

Week	Topic	Readings	Assignments
Week 01	Introduction to NIST and FISMA. Introduction to Federal Information Security fundamentals including policies and laws that affect the Systems Assurance.	Chapters 1 & 2 of Gantz; Library readings	Week 1 Discussion; Quiz 1; First research paper
Week 02	Thinking on Risk, Systems and Success Factors	Chapters 3 - 5 of Gantz; Library readings	Week 2 Discussion; Quiz 2

Week 03	Planning and Initiation of the Risk Management Framework	Chapters 6 & 7 of Gantz; Library readings	Week 3 Discussion; Quiz 3; Second research paper
Week 04	Understanding the use of Security Controls: Incorporating RMF Steps 3 through 6	Chapters 8 & 9 of Gantz; Library readings	Week 4 Discussion; Quiz 4
Week 05	Understanding the resulting products of the Risk Management Framework	Chapters 10 - 12 of Gantz; Library readings	Week 5 Discussion; Quiz 5; Third research paper
Week 06	Analyzing Risk Management and Continuous Monitoring	Chapters 13 & 14 of Gantz; Library readings	Week 6 Discussion; Quiz 6
Week 07	Continuity of Operations planning, initiation, and execution	Chapters 16 of Gantz; Chapter 8 of Enterprise Architecture; Library readings	Week 7 Discussion; Quiz 7
Week 08	Submission of Final Network Design Case Study and class discussion/critique of papers		Discussion of Final Network Design Project Case Study; Submission of Final Network Design Project Case Study

Required Textbooks

All Required Reading assignments are listed by week on the [Required Readings](#) page. Textbooks are:

- **Gantz, S. D., & Philpott, D. R. (2012). *FISMA and the risk management framework: The new practice of federal cyber security*. Syngress, Elsevier.**
- **NIST. (2002, October). *Applying the risk management framework to federal information systems*. National Institute of Standards and Technology: Computer Security Division, Computer Security Resource Center: U.S. Dept of Commerce.**
(appears in Weekly Resources as lectures)

In lieu of a writing handbook, we strongly recommend that students use the [Purdue Online Writing Lab](#) as a primary writing resource. Your instructor will provide additional writing guidance.

Grading Criteria

You will be provided a weekly commentary/lecture and have [required readings](#) and discussion assignments. There will be a number of written assignments, which are explained thoroughly in the list of assignments. Participation in discussion topics/groups will be evaluated as well. A total of 1000 points available in the course distributed across the components listed below, with both points and percent of final grade indicated.

As a student in this course, you have a number of responsibilities that will affect the level of learning you achieve. These responsibilities include:

1. Working actively to create a challenging and useful learning experience for yourself, your discussion group and the class as a whole.
2. Encouraging and supporting the learning of each member of the class in all activities.
3. Preparing and participating fully in discussions as well as group and/or class activities.

4. Completing all assigned work on time or making prior arrangements if an absence of late submission is unavailable.

All written academic work must be submitted by the deadline specified in the assignment and late submissions must be telephonically discussed with the instructor. Written work must be formatted in accordance with the Publication Manual of the American Psychological Association (6th Edition) and will be graded in accordance with the APA Guidelines for Written Work as detailed in the respective rubric.

Discussion Groups

In this course, you will be assigned to a small discussion group (if class size permits). Each week your group will discuss at least one question; all questions will be graded. You are expected to contribute *a minimum of at least three posts* to each question every week. The quality of your posts and those of your fellow students will create a lively discussion and ensure that a high level of learning takes place.

Your **first** post should be substantive (approximately 150-250 words) and it should be made by **Tuesday** (the earlier you make your initial posts, the more your classmates, and you, will have to work with). Your deadline for first post is Wednesday night after which time you will lose points for the week. It should answer the question using your own experience, if appropriate, and, very importantly, it should refer to the readings of that week, using correct APA citations. You should all conduct additional readings and research beyond the readings and resources provided for each week in order to completely answer the discussion question.

Your **second** two posts should be responses to posts made by your fellow group members. This is a minimum requirement as you are expected to respond to more posts in order to have a lively discussion. Responses such as, "Good point," or, "I agree," are not sufficient. Your response posts should be substantive –ask questions, point out additional thoughts, spur deeper insights and thoughts, etc. Posts should build on the course content and add momentum to our collective learning. Disagreement and critical feedback are part of an academic classroom, as is respect for the diversity of opinion. Above all, respect for each other as learners is paramount. Challenging, disrespectful, abusive, or profane language will not be tolerated in any form.

For more information about what is expected in regard to discussion postings, please review the Weekly Discussion Rubric and Discussion Guidelines in the Resource area of this classroom.

Assignments

Responding punctually displays your maturity as a student, and will prepare you for either a higher level of education or professional career. Late submissions are accepted only on discretion of the instructor within a week of the assignment.

Weekly Quizzes

Using the LMS, there will be seven sets of weekly quizzes (each individual quiz will cover a week's assigned readings). These open-book, automatically graded quizzes will test for concepts and technical vocabulary and must be completed in 30 minutes or less. These quizzes open on Friday mornings (00:05) in the week when the material being tested is presented and close at the end (23:55) of the Saturday night.

All quizzes and exams are timed and will automatically submit when the time runs out - even if the student is not finished. Each quiz and exam will be open for 2 days and the student will have one attempt.

If the student will have any trouble with the quizzes or exams (scheduling, amount of time, etc.) make sure to contact the instructor immediately. If the student has any problem with any of the questions in the quizzes or exams they should note the question number and copy the **entire** text of the question and send the instructor an email explaining the problem. For example, if there is a spelling mistake that would make an otherwise correct answer wrong or the textbook not agreeing with the answers.

Research Papers

- For the first research paper the student should pick an organization and discuss the risks to information systems for that organization.
- The second research paper should compare the two different paradigms for certification and accreditation: Vulnerability Focused versus Risk Based.
- The third research paper should discuss the increased complexity of using cloud based, contracted service (i.e. IaaS, PaaS, SaaS, etc.) and the utilization of the Risk Management Framework.

Network Design Project

Students will write a 3,000 ± 500 word research paper/ case study using current affairs (± 5 years). Students should critique an organization's use of the Risk Management Framework and deconstruct where the organization made ultimately negative decisions which significantly impacted the organization through improper implementation of security controls for information systems. This could be through policy, technical controls, or procedures. The student will design a new implementation that would correct the issues the organization has developed and reduce the risk in the organization.

Students must post their topic proposals in the ungraded discussion group for consideration by the instructor and discussion by other students. Although ungraded this discussion allows the entire class to help offer suggestions on the topic. Topics must be approved by the instructor to ensure topics are not too broad or too narrow. Once approved the students will post to an assignment dropbox a rationale and a brief outline for the instructor to offer suggestions on individual papers and this outline will be included in the grading of the Network Design Project Case Study.

Late Paper Submission

It is important that writing assignments and discussion posts be completed on time. Extensions of deadlines will be given only for serious extenuating circumstances. In the absence of such extensions, assignments may be downgraded for lateness at the discretion of the instructor.

Submission Deadlines

Discussions officially close on Saturday of each week at 11:55 PM Eastern time. Posts submitted after that time will not be graded.

Exams are due on their assigned dates at 11:55 PM Eastern time.

Research papers and the Final Paper are due on their assigned dates at 11:55 PM Eastern time.

Extra Credit Submissions

Extra credit submissions and the length of such submissions require advanced approval by your instructor. Instructors are not required to use the grading rubric, or provide rubric scores. Instructors do not have to provide the same level of formal feedback on extra credit submissions as they do on essay assignment, but should provide whatever level of useful feedback is appropriate.

The **maximum** grade based on word-count is 0.005 credit/word, or 5 points per 1,000 words. Thus a student who agrees to submit a 2,000-word essay on a specific topic approved in advance may have **up to 10** points added to the "Extra Credit" column in the grade book. These points are added to the total points accumulated.

Extra credit assignments cannot be used as a substitute for missed research papers. The way to obtain credit for missed research papers is to request permission to submit the paper late.

Grades

The following table shows the graded assessment types contained within this course and the assigned weighting to determine the final course grade.

Note that the Final Design Project comprises 45% of the grade.

Graded Activity	Total Points	% of Grade
Discussions (8 x 25 points)	200	20%
Weekly Quizzes (7 x 20 points)	140	14%
Research Papers (3 x 70 points)	210	21%
Final Network Design Project Paper	450	45%
TOTAL	1000	100 %

Letter grades for the course will be based on the following grading scale:

Letter Grade	Percentage	Grade Point
A	93-100%	4.0
A -	90-92.9%	3.7
B +	87-89.9%	3.3
B	83-86.9%	3.0
B -	80-82.9%	2.7
C +	77-79.9%	2.3
C	75-76.9%	2.0
C -	73-74.9%	1.7
D +	70-72.9%	1.3
D	67-69.9%	1.0
D-	63-66.9%	0.7
F	0-62.9%	0.0

For complete information on the Grading Policy for Bachelor Degree students, please refer to the [CGCS Online Catalog](#) (Sub-Section of Catalog on "Grades.")

Academic Honesty and the Norwich University Honor Code

A student must submit work that represents the student's own original analysis and writing. Copying another's work is not appropriate. If the student relies on the research or writing of others, the student must cite those sources. Words or ideas that require citations include, but are not limited to all hardcopy or electronic publications, whether copyrighted or not, and all verbal or visual communication when the content of such communication clearly originates from an identifiable source. While students are encouraged to seek editing

feedback, extensive revisions of one's work by another person is considered a lack of academic honesty, as it is representing another student's work as one's own.

For more information see:

[Academic Dishonesty](#)

[Academic Integrity](#)

[Norwich University Honor Code](#)

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Section 504 of the Rehabilitation Act of 1973/ADA

Please consult [Appendix H: University Policy - Section 504 of the Rehabilitation Act of 1973/Americans with Disabilities Act \(ADA\)](#) for instructions on obtaining an accommodation.

Disclaimer: Please note the specifics of this Course Syllabus are subject to change. Students are responsible for abiding by any such changes. Your instructor will notify you of any changes.