Syllabus revised 4/22/2019

This syllabus is specific to the Summer 2019 Section B01 offering of IT 499. Additional information will be made available to registered students via the Blackboard course management system no later than the day of the first class.

University Policies

The University Catalog is the central resource for university policies affecting student, faculty, and staff conduct in university affairs. Unless explicitly noted, any conflict between the policies in the University Catalog and the content of this document is unintentional. Please notify the author to resolve any such conflicts.

Please note that the Academic Year runs from the Fall semester of one calendar year through the Spring and Summer semesters of the following calendar year. Please be sure to select the correct archived Catalog if appropriate.

Schedule

<table>
<thead>
<tr>
<th>Section</th>
<th>Instructor</th>
<th>Campus</th>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>B01</td>
<td>Prof. Lyons</td>
<td>Online</td>
<td></td>
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</tbody>
</table>

Section: B01
Instructor: Prof. Lyons

Lecture mode: **Online, asynchronous**
Students may attend online lectures in real time, and/or watch recording of the online sessions.

Exam mode: **In-person, on campus** or **remote proctored**
Mid-term exam: Friday, June 28, 6:30 p.m. on the Fairfax campus
Final exam: Friday, July 26, 6:30 p.m. on the Fairfax campus

*NOTE: Exam dates, times, and locations are subject to change.*
Course Description

From the University Catalog:

**IT 499: Special Topics in Information Technology.** 3 credits.

Topics of special interest to undergraduates. Notes: May be repeated if topics are substantially different. Offered by Info Sciences & Technology. May be repeated within the term for a maximum 6 credits.

**Recommended Prerequisite:** 60 credits.

**Registration Restrictions:**

Enrollment is limited to students with a major, minor, or concentration in Applied Information Technology, Applied Science, Individualized Study, Information Technology or Infmtn Tchngy Entrepreneurship.

Washington Consortium level students may **not** enroll.

Students with the terminated from VSE major attribute may **not** enroll.

**Schedule Type:** Lecture

**Grading:**

This course is graded on the Undergraduate Regular scale.

**Additional Course Details:** Title varies by section and/or semester

For this offering:

**IT 499: Cybersecurity Incidents and Responses.** 3 credits.

Analysis of significant cybersecurity incidents, from the Morris worm to the present day, and the responses to them. Students will develop case studies using open-source information, determine the root causes of incidents, and decide whether the responses were appropriate. Response analysis will include the role of local, state, national, and international organizations.

**Registration Restrictions:**

**Required Prerequisites:** IT 223\(^B\).

\(^B\) Requires minimum grade of B.

Students in majors other than Information Technology who are not required to take IT 223 for their major should contact the instructor to determine if they have appropriate prior studies for this course.
Prerequisites

The required grade must be achieved in the prerequisite course before a student is qualified to take this course. The prerequisite course must be completed prior to, not concurrently with, this course.

Students in majors other than Information Technology who are not required to take IT 223 for their major should contact the instructor to determine if they have appropriate prior studies for this course. Where appropriate a waiver of the prerequisite requirement may be granted.

This requirement will be strictly enforced. Any student enrolled in the course who has not meet the prerequisite requirements (or received a waiver) by the start of the semester will be dropped from the course and the student will be responsible for any consequences of being dropped.

Rationale

Tools are not inherently good or evil – that depends on the people who use them. Cyber tools offer extraordinary benefits to individuals, organizations, and society at large, but also expose those entities to risks from accidents, and from malicious actors. As designers, developers, operators, and users of information systems we need to understand how those systems can fail, be misused, or be attacked to ensure we can use them appropriately and protect them as much as is practical. This course examines in detail selected incidents and allows students to develop understanding of issues related to cybersecurity in current and emerging systems.

Course Applicability

This offering of the course may be applied as:

- a substitute for any course in the Information Security (INFS) concentration of the Information Technology major;

- the fifth course for any concentration of the Information Technology major;

- a substitute for IT 353, IT 357, IT 369, IT 462, or IT 466 in the NSA/DHS Center of Academic Excellence in Information Assurance/Cyber Defense Education Criteria Certificate;

- a Technical Focus course in the Applied Science major, the Information Technology minor, or in the Information Technology Undergraduate Certificate;

- an elective in any major, minor, or certificate, subject to approval from the department offering the program.

Students in programs offer by departments other than Information Sciences and Technology should confirm with an academic advisor from their department that this course may be applied to their program.
Objectives

On successful completion of this course, students will be able to:

– Describe selected cyber security incidents, including historical and recent events.

– Explain the root causes of incidents and draw conclusions as to common causes.

– Distinguish between accidental failures and malicious misuse or attacks against information systems.

– Give examples of appropriate and inappropriate responses to selected incidents, and draw conclusions as to best practices for responding to cybersecurity events.

Faculty and Staff

Course Coordinator:
  Michael X. Lyons

Instructor:
  Section B01   Michael X. Lyons

Teaching Assistant:
  To be assigned – see Blackboard

Administrative support:
  Department of Information Sciences and Technology
  Fairfax campus
  5400 Nguyen Engineering Building
  Email:  bsit@gmu.edu
  Phone:  703–993–3565
References

Textbooks

There are no required textbooks for this course.

Grading

Grades will be awarded in accordance with the Mason Grading System for undergraduate students. See the University Catalog, Academic Policies, AP.3.1 Undergraduate Grading for more information.

The grading scale for this course is:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
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<tbody>
<tr>
<td>97 – 100%</td>
<td>A+</td>
</tr>
<tr>
<td>93 – 96%</td>
<td>A</td>
</tr>
<tr>
<td>90 – 92%</td>
<td>A-</td>
</tr>
<tr>
<td>87 – 89%</td>
<td>B+</td>
</tr>
<tr>
<td>83 – 86%</td>
<td>B</td>
</tr>
<tr>
<td>80 – 82%</td>
<td>B-</td>
</tr>
<tr>
<td>77 – 79%</td>
<td>C+</td>
</tr>
<tr>
<td>73 – 76%</td>
<td>C</td>
</tr>
<tr>
<td>70 – 72%</td>
<td>C-</td>
</tr>
<tr>
<td>60 – 69%</td>
<td>D</td>
</tr>
<tr>
<td>0 – 59%</td>
<td>F</td>
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</tbody>
</table>

* Grades of "C-" and "D" are considered passing grades for undergraduate courses, but those grades may not be applicable as prerequisite grades or towards graduation, depending on the program and the Catalog Year. See the University Catalog for more information.

Raw scores may be adjusted by the Instructor to calculate final grades.

Final grades will be based on the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Lecture responses</td>
<td>10%</td>
</tr>
<tr>
<td>Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Mid-term exam</td>
<td>30%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
</tr>
</tbody>
</table>

Lecture responses

Following each lecture students will be given a fixed period of time in which to post a response to a topic posted by the Instructor. These responses are intended to expand on the lecture content and to encourage students to keep up with the lecture material on a weekly basis.

There is no "grace period" for these responses – any response submitted late may not be graded at the sole discretion of the Instructor.
Assignments

Individual work will be assigned throughout the semester. Each assignment is to be prepared and submitted as specified by the Instructor. Each assignment will count towards the final grade - there are no "optional" assignments.

Mid-term exam

Students are required to attend an exam session (to be scheduled and announced in Blackboard) in person, or to arrange for a proctored exam.

The mid-term exam will be based on topics addressed in Lectures 1-5, and will be “closed book” - no reference materials other than those provided with the exam paper will be permitted. Mid-term exams will be returned to students.

Final exam

Students are required to attend an exam session (to be scheduled and announced in Blackboard) in person, or to arrange for a proctored exam.

The final exam will be based on topics addressed throughout the entire course and will be “closed book” - no reference materials other than those provided with the exam paper will be permitted. Final exams will be retained by the Department of Information Sciences and Technology and will not be returned to students.

Please note that exams may be re-scheduled to compensate for disruptions in the semester schedule and students are required to be available throughout the exam period including the scheduled Make-up Day.

Students are expected to submit work as scheduled by the Instructor. Any assignment submitted after the due date-time but within 24 hours of it will be graded with a penalty of 25% of the available credit. Any assignment submitted more than 24 hours late will not be graded. Exceptions to the submission time requirement may be made at the sole discretion of the Instructor.

A student with an exam conflict (or other circumstance that would justify rescheduling an exam under Mason policy), must notify the Instructor no later than 2 weeks prior to the scheduled exam. A student in an online section who wishes to take a proctored exam at another location must notify the Instructor no later than 3 weeks prior to the scheduled exam and the student will be responsible for making appropriate arrangements in accordance with Mason Policy 3004.

Any student arriving more than 15 minutes late for an exam may be prohibited from taking the exam at the sole discretion of the Instructor.

Each student is required to present a current Mason ID in order to take an exam or other in-person assessment. No other form of identification is accepted. See the Mason ID Web page for information on obtaining a card.

Mid-term and final grades will be posted to PatriotWeb, which is the only mechanism for students to obtain those grades. A student with a "hold" on his/her PatriotWeb account will be unable to access grades until the hold has been removed by the Registrar.
Schedule

The lecture schedule will be posted and updated as the semester progresses. Students will have the opportunity to identify specific incidents they wish to explore.

Important Dates

Please see the Spring 2019 Semester Calendar for important dates, including the last days to add and drop courses.

Religious Holidays

A list of religious holidays is published by University Life. Any student whose religious observance will conflict with a scheduled course activity must notify the Instructor by the end of the second week of the semester in order to make alternative arrangements.

Attendance Policy

Students are expected to attend every online session in real time, and/or to promptly review recordings of the online session, such that they experience each session in its entirety.

Mason policy AP.3.10 requires students to take exams at the scheduled time and place, unless prior approval is granted by the student's academic dean or director. An unexcused absence from an exam will result in a score of zero (0) for that exam. Please note that exams may be re-scheduled by the Registrar to compensate for disruptions in the semester schedule and students are required to be available throughout the exam period including the scheduled Make-up Day.

Communications

Registered students will be given access to a Blackboard section for this course. Blackboard will be used as the primary mechanism (outside of lectures) to disseminate course information, including announcements, lecture slides, homework and other assignments, and scores for homework and exams. Some announcements may be sent via Blackboard to students' Mason email accounts.

Communication with the Instructor on issues relating to the individual student only should be conducted using Mason email, via telephone, or in person - not in the public "Discussions" forums on Blackboard. To protect student privacy any communication related in any way to a student's status must be conducted using secure Mason systems – if you use email to communicate with the Instructor you MUST send messages from your Mason email account. Students must activate and monitor their Mason email accounts to receive important information from the University, including messages related to this class. Students are advised to use Blackboard, Tools, Send Email, Select Users to originate email messages to an Instructor.
All course materials (lecture slides, assignment specifications, etc) are published on Blackboard in Adobe® Portable Document Format (PDF). This allows users of most computing platforms to view and print these files. Microsoft® Word (or a compatible word processing application) is required for preparing assignments – it is available on computers in the Mason open labs.

This offering will use several tools available through Blackboard. Students are responsible for obtaining Internet access and a compatible platform. Appropriate computers are available on campus in open labs.

**Privacy**

Instructors respect and protect the privacy of information related to individual students. For information on student rights and privacy under the Family Educational Rights and Privacy Act of 1974 (FERPA) please see [FERPA at Mason](#).

As described above, issues relating to an individual student will be discussed via email, telephone or in person. Instructors will not disclose protected information identifiable to an individual student with other students (or anyone without a need to know) without prior permission of the student.

Homework, quizzes, mid-term exams and other assessable work will be returned to each individual student directly by the Instructor (or by a faculty member, staff member, or Teaching Assistant designated by the Instructor, or via another secure method). Under no circumstances will a student's graded work be returned to another student.

Instructors, Teaching Assistants, and staff will take care to protect the privacy of each student's scores and grades.

**Disability Accommodations**

[Disability Services](#) works with disabled students to arrange for appropriate accommodations to ensure equal access to university services. Any student with a disability of any kind is strongly encouraged to register with Disability Services as soon as possible and take advantage of the services offered.

Accommodations for disabled students **must** be made in advance – Disability Services cannot assist students retroactively. Any student who needs accommodation should contact the Instructor no later than the first class.

If a student has an accommodation that allows the student to take an exam in the Disability Services Testing Center, the Instructor will determine the date and time of that exam – the student **must not** contact Disability Services to schedule the exam until the Instructor has advised the date and time.
Campus Notifications

Students are encouraged to subscribe to the Mason Alert system to receive notifications of campus emergencies, closings, and other situations that could affect class activities.

Each classroom has a poster explaining actions to be taken in different types of crisis. Further information on emergency procedures is available at the Emergency Management Web site. In the event of a possible emergency, students are encouraged to dial 911.

Other Resources

Mason provides many useful resources for students – see Students - George Mason University. The following resources may be particularly useful:

- The Writing Center
- The Academic Advising Center
- The University Libraries
- Counseling and Psychological Services
- University Career Services

Students in online sections may benefit from these resources:

- Online Learning Resources
- University Libraries - Mason Online

Academic Integrity

All members of the Mason community are expected to uphold the principles of scholarly ethics.

The IT major has been designed to achieve several specific outcomes. One of those outcomes is: “An understanding of professional, ethical, legal, security, and social issues and responsibilities.”

Graduating students are bound by the ethical requirements of the professional communities they join. The ethics requirements for some of the communities relevant to IT graduates are available via the following links:

- ACM Code of Ethics and Professional Conduct
- IEEE Code of Ethics
- EC-Council Code of Ethics

On admission to Mason, students agree to comply with the requirements of the Mason Honor Code and System. The Honor Code will be strictly enforced in this course. Honor Code cases are heard by a panel of students – students who meet the requirements are encouraged to nominate themselves to serve on the Honor Committee.
Any use of the words or ideas of another person(s), without explicit attribution that clearly identifies the material used and its source in an appropriate manner, is plagiarism and will not be tolerated. The Instructor reserves the right to use manual and/or automated means (including such services as SafeAssign) to detect plagiarism in any work submitted by students for this course, and to direct Teaching Assistants and/or other faculty and/or staff members to do likewise in support of this course.

For this course, the following requirements are specified:

- All assessable work is to be prepared by the individual student, unless the Instructor explicitly directs otherwise.

- All work must be newly created by the individual student for this course for this semester. Any usage of work developed for another course, or for this course in a prior semester, is strictly prohibited without prior approval from the Instructor.

Students may seek assistance with assigned work (and are encouraged to do so if they feel the need), provided:

- The directions for the assigned work do not prohibit such assistance.

- Such assistance is explicitly acknowledged in the submitted work, clearly identifying the person(s) giving assistance and the nature of the assistance given.

- Any individual work to be submitted is prepared entirely and exclusively by the student submitting it. Students are expressly prohibited from sharing any individual assessable work for this course in any manner with other students (except students assigned as Teaching Assistants or Undergraduate Peer Mentors to this course and the student's section), unless all students involved have had their work graded and returned by the Instructor, or the Instructor has explicitly approved such sharing.

Another aspect of academic integrity is the free exchange of ideas. Vigorous discussion and debate are encouraged in this course, with the firm expectation that all aspects of the class will be conducted with civility and respect for differing ideas, perspectives, and traditions. When using online tools to communicate, students are expected to follow the conventions of Netiquette. Mason values diversity: through the Office of Diversity, Inclusion, and Multicultural Education (ODIME), Mason seeks to create and sustain inclusive learning environments where all are welcomed, valued, and supported.

Students are encouraged to ask for clarification of any issues related to academic integrity and to seek guidance from the Instructor, other faculty members, academic advisors, or the Office for Academic Integrity.