Description:

Presents various intelligence analysis methods addressing basic topics, including: hypothesis generation and testing, substance-blind analysis of evidence and its credentials, chain of custody analysis, combination of evidence, divide and conquer paradigm for analysis, sources of uncertainty, competing hypotheses and analyses. Discusses case studies in various domains following a hands-on approach using educational analysis tools.

Expected outcomes:

• Understanding computational and qualitative approaches to intelligence analysis.
• Understanding the role of evidence analysis.
• Understanding computational and qualitative methods for structured argumentation.
• Practical experience with case-studies in various areas of intelligence analysis.
• Practical experience with analysis tools.

Prerequisites:

Admission into the MS-AIT degree program or permission from Instructor.

Instructional and Administrative Support:

Your course is managed by various persons as listed below. Office hours are listed on the Blackboard site of the course.

Course Instructor, Dr. Curtis Williams (cwilli90@gmu.edu): The course instructor is responsible for the delivery and grading of the course. Contact the course instructor for all the questions related to the course or your grades (except for the assignments graded by the GTA when you must contact the GTA first).

Course Coordinator: Dr. Mihai Boicu. The course coordinator is supervising the course delivery and course content. Contact the course coordinator by email (mboicu@gmu.edu) for the following reasons:

(1) Issues related to the course delivery: only after you contacted and tried to solve these issues with the GTA and course instructor; include all the prior correspondence and CC the course instructor and GTA as applicable.
(2) Issues related to the use of the course for the program (e.g. substitutions).
(3) Suggestions related to the course content.
(4) Advising related to the program, concentration and/or related courses.
Schedule:

The schedule is subject to change during the semester based on instructor decision.

- Week 1: Intelligence analysis as “connecting the dots”; Structured analytic techniques – a taxonomy of methods.
- Week 2: Decomposition and Visualization; Divide and conquer: a necessary approach to complex analyses.
- Week 3: Idea Generation; Evidence
- Week 4: Scenarios and indicators; Establishing the relevance of evidence by arguments.
- Week 5: Hypothesis Generation and Testing; Assessing the believability of evidence.
- Week 6: Cause and effect; Chain of custody; Midterm review
- Week 7: Project draft discussion; Midterm examination (take home – analysis problems)
- Week 8: Assessment of cause and effect; Recurrent substance blind combinations of evidence.
- Week 9: Challenge analysis; The major sources of uncertainty in masses of evidence.
- Week 10: Conflict management; Assessing and reporting uncertainty: some alternative methods.
- Week 11: Decision support; Competing hypotheses and analyses.
- Week 12: Improving structured analytic methods.
- Week 13: SPECIAL TOPICS; Project presentation
- Week 14: SPECIAL TOPICS; Project presentation; Final exam review
- Week 15: Final Exam consisting from the submission of the updated project paper integrating the feedback received during presentation and online discussion

Textbook:

2. REQUIRED: Tecuci, Schum, Boicu, Marcu: Introduction to Intelligence Analysis – A hands-on approach with TIACRITIS (provided in electronic format on the class web site)
4. Other online materials provided by the instructor

Grading:

The students will be assigned a grade as follow:

- Assessments and assignments (30%)
- Take home midterm exam (30%)
- Initial student analysis paper, online presentation and discussion and final submission (as final exam) (40%)
The grading scale for this course is:

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

**Hardware and Software requirements**

For all sections you must have a personal computer with internet connection.

For the online section you must have a personal computer with internet connection, with speakers and microphone. The course delivery was tested on Windows Vista and Windows 7, but it will probably work on other operating systems as well.

You will use different software packages during this class. You will receive installation requirements at the beginning of that week. However, you must try to perform the required operations as soon as possible in order to have the time to correct any potential technical problem that you might encounter.

**Course Delivery Methods**

The course will be delivered using various methods. You must have your MASON email account activated and you must check your email daily for announcements related to the course. You must have access to Blackboard Learning System and to know how to use its features.

For the online section, there are video presentations posted on the blackboard. You must have an environment in which you can watch these videos.

You will have several assignments and assessments to be performed each week. A summary of weekly requirements will be send at the beginning of the week.

**Exams**

There is a midterm exam and a final exam in the course. The exams are take-home but require complex analysis to be performed. However, they must present original work. If they match previous received solutions you may be required to re-take the exam in a supervised environment.
Copyright

There are many open assignments in the class that will be shared with the other students. Moreover other students will make comments to some of the assignments that will generate improved versions of the assignments. If no other license is specified, Academic Free License version 3.0 http://opensource.org/licenses/AFL-3.0 is assumed for all the course work.

Privacy

Instructors respect and protect the privacy of information related to individual students. Specific issues relating to an individual student will be discussed via email, telephone or in person. Instructors will not discuss issues relating to an individual student with other students (or anyone without a need to know) without prior permission of the student. There is no guarantee related to the security of email and telephone conversations.

Assessable work other than final exams will be returned to individual students directly by the Instructor (or by a faculty or staff member or a 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.

Faculty and staff will take care to protect the privacy of each student's scores and grades.

Because of the nature of this class, some work performed by the student will be published and discussed in the class. Other students will be able to make comments and suggestions related to the published work, without seeing the actual grade the student received for the work.

Disability Accommodations

The Office of Disability Services (ODS) 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 ODS as soon as possible and take advantage of the services offered.

Accommodations for disabled students must be made in advance – ODS cannot assist students retroactively, and at least one week's notice is required for special accommodations related to exams. Any student who needs accommodation should contact the Instructor during the first week of the semester so the sufficient time is allowed to make arrangements.

Honor Code

All members of the Mason community are expected to uphold the principles of scholarly ethics. Similarly, graduating students are bound by the ethical requirements of the professional communities they join. The ethics requirements for some of the communities relevant to Applied 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 System and Code\(^1\). The Honor Code will be strictly enforced in this course. Honor Code cases are heard by a panel consisting 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. Dean Griffiths has mandated a "zero tolerance" policy for plagiarism within The Volgenau School. The Instructor reserves the right to use manual and/or automated means (including such services as Turnitin.com) 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 acknowledged in the submitted work, clearly identifying the person(s) giving assistance and the nature of the assistance given.

- Any work to be submitted is prepared entirely an exclusively by the student submitting it. Students are expressly prohibited from sharing any 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.

Note: This syllabus contains fragments from general templates provided by the university and fragments extracted from Dr. Ioulia Rytikova template syllabus.

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\(^1\) Available at [http://catalog.gmu.edu/](http://catalog.gmu.edu/) and related Mason Web pages.