94806

Privacy In the Digital Age
Fall 2018 - Mini 1
Monday and Wednesday - HBH 1204 - 3:00-4:20PM

Carnegie Mellon University | Heinz College

Instructor:
Anne Connell
aconnell@cmu.edu
Office CIC 3223

TA:
Gilbert Resendez
gfr@andrew.cmu.edu
TEXTBOOKS

All readings (both required and recommended) are available on Canvas.

COURSE DESCRIPTION

Privacy is a complex and multi-faceted concept. This course combines technical, economic, legal, psychological, ethical, and policy perspectives to present a holistic view of its role and function in the digital age.

Advances in technology have led to worries about “the reasonable expectation of privacy” since Warren and Brandeis wrote their seminal article on the subject at the end of the 19th century. These worries have continued and evolved as the technology of communication has been seen as a technology of surveillance. The modern world of computers, cell phones, CCTV-camera, and the Internet of Things offer unprecedented opportunities for tracking everything everyone does.

At the same time, policy around the right to privacy and indeed the definition of what privacy means have evolved in different ways in different countries. European laws attempt to protect the privacy of the individual from corporations, while U.S. law tries to protect the privacy of the individual from the government. Corporations doing business in multiple jurisdictions find themselves subject to conflicting and sometimes contradictory rules and regulations, while users find it difficult to know what rights they have with respect to their interactions. The GDPR Regulation that came into force May 25, 2018, substantially tightens and toughens requirements on businesses storing, sharing, sending and receiving data of EU citizens, but what does this mean for the U.S.? We will discuss these topics:

- Technological aspects: privacy concerns raised by Internet, wireless communications, tracking techniques and data mining; privacy enhancing technologies and non-attribution and anonymous protocols, etc.
- Economic aspects: economic models of the market for privacy, financial risks caused by privacy violations, the value of customer information, etc.
- Legal aspects: laissez-faire versus regulated approaches, US versus EU legal safeguards, etc.
- Managerial implications: the emerging role of Data Privacy Officers, compulsory directives and self-regulative efforts, etc., and
- Policy aspects: trade-offs between individual privacy rights and societal needs

The course will address different angles of the privacy debate, and we will try to connect and contrast each angle to the others. The approach of this class therefore somewhat privileges breadth over depth, while offering tools and directions for more focused analysis, in order to give you a broad and varied understanding of privacy problems in a networked digital society. For this reason, this class also provides some preparation and introduction for/to other courses you may take at the Heinz School.

Finally, the intention of the class is not to scare you into believing that every instance of information disclosure is a privacy invasion. Instead, the goal is to educate you about the kinds of information that may be gathered about individuals, and to help you determine the individual and societal trade-offs associated with accepting or avoiding its collection and/or use. Since privacy is a very subjective and contextual feeling, what may be a privacy invasion for you in one setting may not be in another. The challenge we present to you in this course is to understand the difference.
OBJECTIVES

The main objective of this course is to provide an informed and critical view of the role and value of privacy in the digital age, and understand how policy is made in the areas of technology, both within the U.S. and elsewhere, and to understand how to approach the capabilities of the technologies that policies are trying to govern. We will also look at different models of governance, some of which are very different from those that are traditionally thought of, including the role of code in the governing of technology. Because privacy is a complex and multi-faceted concept, the course aims to present and combine technical, economic, legal, and policy perspectives.

GRADING

Due to the interdisciplinary nature of the course topic, students will be expected to work with each other and learn from each other's perspectives and backgrounds. Individual papers should be written by and worked on individually, but everything else in the class is designed to encourage group discussion, interaction, and participation. The course consists of a combination of readings, assignments, and class discussions. Assignments include homework assignments and a final project. Specifically, your grade will depend on the following components:

- Class attendance and participation: 20%
- Homeworks: 40%
- Final Project: 40%

1. Class attendance and participation include, in addition to your attending Monday and Wednesday classes, your participating in class discussions about the readings and topics listed in this syllabus. The readings listed in the schedule of classes should be completed prior to the class for which they are listed. Readings indicated as "recommended" are not required. They are there to provide additional resources if your choice of project requires a deeper dive into a specific area.

To get your full class attendance and participation grade it is sufficient to:

- Come to class
- Read articles/chapters and participate in the discussion
- An assigned small group of students each lecture will lead a discussion on the readings for the first few minutes of class

2. There will be three homework assignments. Homework assignments will be distributed online. Homework assignments should be submitted via Canvas on the day when they are due. Homework assignments consist of short report related to different parts of the course: 1) data privacy 2) privacy technologies 3) privacy regulation. Homework assignments will be graded based on the clarity and validity of your arguments and analysis. You can use the Objectives Rubric attached at the end of this syllabus as a guideline to these criteria.
Some tips for completing the assignments:

1. Think about the problem presented and described in the exercise.
2. Collect information about it.
3. Think about the problem again after you have studied the information collected.
4. Give a coherent structure to your ideas: Keep in mind clarity, concision, intellectual rigor, novelty, critical thinking, and analytical discussion.
5. Write down your ideas, remembering to cite collected information in a properly formatted bibliography using a proper citation scheme, such as the Chicago Manual of style (http://www.chicagomanualofstyle.org/tools_citationguide.html). You are of course welcome to use any other proper format. Each source must include at least: name title, date, and publication such as journal or book. Please note: while Wikipedia is a wonderful source of information it is NOT considered a proper source and should therefore not be cited in your work. Citing information in lectures is also not a proper source, you should reference the readings instead.
6. Edit and proofread your text.

Please check the schedule of HWs in the latter part of this document, and avoid scheduling meetings that conflict with your ability to submit the HW in time. While I understand that many of you may be interviewing soon for jobs, allowing students to submit HWs at a later time than the rest of their classmates would create unfair advantages. Hence, postponing HWs will not in general be allowed (and in the very exceptional circumstances in which it may be, the HW grading would be subject to heavy penalty, calculated based on the number of days the HW submission was delayed).

3. The final project is a research project in which you try to address and answer an interesting question related to or inspired by one of the topics covered in class in greater detail. The final project must be a group effort with a minimum of 2 to a maximum of 4 students in each team. The primary output of your research will be a paper as well as a presentation to the class. For instance, you may explore:

- An empirical study based on primary or secondary data (data that you mined/scraped/otherwise collected from the Internet).
- An experiment showing how easy it is for your own privacy to be invaded using a platform, device, web service, etc., that stores your data.
- An analysis of a current privacy attack vector (phishing, data breaches, malware, social engineering/deception, etc.).
- A novel privacy protection -- or invasive -- app or tool of your design.
- An analysis of the privacy implications/trade-offs emerging privacy laws

You will find out that the homework assignments and the final project build on one another: the HWs are designed to make you think about particular angles of the privacy debate which will turn useful in the completion of your project—and, hopefully, in other courses as well.

You are encouraged to think about a project which builds upon one of the homework assignments.
On the other hand, as a general rule try and avoid projects of these types:

- Surveys of attitudes that simply consist in asking people their opinions about some privacy sensitive issues.
- Literature reviews of what other people have studied/found our regarding certain privacy issues.

You can see the final project as a sort of small-scale research effort. To complete a good final project, you must come up with an interesting research question and a methodology, and produce some quantitative and/or qualitative results based on that methodology. The research question should at least strive to be novel and interesting, and the methodology should be sound and appropriate to investigating that question. Therefore, literature reviews or reviews of a certain field are discouraged unless they are extensive, exhaustive, and novel.

The project ideally, should be an original idea that you research (with proper citations of existing literature) within the constraints of a mini (that is, 7 weeks) course. It is suggested that you to focus on a specifically defined topic rather than a broad field of inquiry, e.g. “Re-identification of anonymous Instagram (FINSTA) accounts using HTTP data” is much better than “Privacy in social networks”).

Your final project document should include the discussion and motivation for the research question you chose to investigate, a review of the relevant literature, a description of your methodology, and the analysis of your results. On average, a good final project document would be around 20 pages long and should be properly formatted according to academic guidelines using proper references and citations, structure and section titles, etc.

Around mid-way through the course, you will be asked to select one specific idea and provide a proposal for your final project. The proposal should include your proposed topic, the research question you plan to investigate, your suggested methodology, your hypothesis and expected results, and an initial bibliography. The instructor and TA will give you feedback and suggestions based on your proposal. A list of possible project topics will be discussed in class but you are strongly encouraged to propose your own topics to the instructor early enough in the course so to receive appropriate feedback.

The final project will be graded based on creativity, novelty, and originality, as well as on how well you conduct research, your calculations and evaluations, the completeness of your work, your ability to draw conclusion, and the clarity and presentation of your work. You can use the Objectives Rubric attached at the end of this syllabus as a guideline to these criteria.) In addition, students will be expected to present their results to the rest of the class during the last days of the course.

Note: final projects can be turned into independent studies, theses, or published articles. More generally, the skills needed to complete a proper project and further emphasized below—for instance: the proper way to cite sources will turn out to be useful to you in the completion of other Heinz/CMU courses, your final projects or Theses, and your future careers.
IRB approval for projects

If your research/project/case study involves experiments or surveys or other activity involving human subjects, or personal information about human subjects, you will need to understand concepts such as informed consent, human subjects’ protections, and IRB (Institutional Review Board) regulations before running your study. Most likely, you will also need approval for your study. Most typically, your study will follow under the “exempt” category, which requires you filling out a form with CMU IRB and using the SPARCS platform. Please check CMU IRB site:

- https://www.cmu.edu/research-compliance/human-subjects-research/
- https://www.cmu.edu/research-office/sparcs/

And check especially their exempt review forms and consent forms:

- https://www.cmu.edu/research-compliance/human-subjects-research/guidance-forms.html

Some tips about the final project

- You should start thinking about the final project very soon as this course only lasts seven weeks.

- I have uploaded to the Canvas some projects from previous years that you can use as examples of interesting topics and analyses.

- You may find ideas for possible project topics by “glancing ahead” at the course’s readings throughout the various weeks.

- You may also find ideas by checking websites such as EPIC (consumer rights advocacy group: http://www.epic.org/)

- IAPP Privacy consortium: http://www.privacyassociation.org/);

- Or by perusing additional, academic papers available at http://infosecon.net/workshop/bibliography.php).

- Style guides are suggested rules for document formatting and reference notation. The use of a style guide is not required, but highly recommended if you intend to one day publish your work. (Even if you don’t, it makes formatting much easier). The ACM style guide, for example, popular in computer science literature, can be found at (current version): https://www.acm.org/publications/proceedings-template-16dec2016

- These are actual MS Word templates that can be downloaded and edited directly. An APA style guide, common in social science is described at: http://psychology.vanguard.edu/faculty/douglas-degelman/apa-style/
In order to offer some guidance for this research process, I have also uploaded to Canvas a very rough draft document titled “How to do research” and another document about making a literature review. These documents include a list of tips/hints/suggestions aimed at students who start a Master or a Dissertation research, but should also be useful for smaller projects like your privacy final project. For instance, the document offers information (as well as links to other resources) on how to:

- find and select an attractive research topic,
- find information and look for references on that topic,
- avoid plagiarism,
- create a bibliography,
- write a literature review,
- organize your paper, and
- write a research document.

Here is a rough timeline to guide you through the preparation of the final project:

After the first three weeks of the course, start brainstorming about the possible project topics. Think about which topics you are interested in; which topics are still worth studying (i.e., they have not yet been thoroughly covered already; which topics are actually doable in the short time-span of a Mini; which topics may be of value to your future work/study at Heinz and to your future career. Send an email to me and to Gilbert to discuss your ideas and get feedback.

A NOTE ABOUT CITATIONS IN YOUR HWS AND PROJECTS

It is important to cite (in fact, properly cite) all sources in your HWs and final projects. Citations and references help you build on existing work so you don’t have to repeat what is already known, demonstrate your awareness of current literature, and support your arguments. They also help avoid you accidentally copying people’s work. Proper citations and quotations allow you to avoid passing off someone else’s work as your own: “[w]hether done accidentally or maliciously this is considered plagiarism and the academic equivalent of a crime. Proper use of quotations and citations will easily avoid this issue.”

ADDITIONAL RESOURCES

For additional assistance with the written or oral communication assignments in this class, you can visit the Global Communication Center (GCC) at CMU. GCC tutors can provide instruction on a range of communication topics and can help you improve your papers and presentations. The GCC is a free service, open to all students, and located in Hunt library.

You can make tutoring appointments directly on the GCC website: [http:// www.cmu.edu/gcc](http:// www.cmu.edu/gcc). You may also visit the GCC website to find out about communication workshops offered throughout the academic year ([http://www.cmu.edu/gcc/workshops/index.html](http://www.cmu.edu/gcc/workshops/index.html)).
FINAL ADVICE

**Take care of yourself.** Do your best to maintain a healthy lifestyle this semester by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful. If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at http://www.cmu.edu/counseling/. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

ABOUT READINGS AND CLASS DISCUSSIONS

Classes will be a combination of lectures, required readings, and discussions:

- **Lectures**: I will cover and extend the material and the topics covered in the readings.
- **Discussions**: we will also discuss together those topics. It is important that you know the readings before class.
- **Mini-presentations**: A couple of students for each set of readings will lead a discussion on the reading for the first few minutes in class.

I have listed many readings in the following pages. Not all are required as required readings for the class. Note that over the course of this Mini we may not necessarily discuss each and every reading in class, neither will we cover in stringent detail each single reading. The “Also recommended” readings offer you a means to learn more, and extend your understanding of, the same topics that we will cover in the slides. These readings also offer you the means to deepen your analysis in your preferred direction. If you want to go deeper into any given topic, reading the “Also recommended” papers will be a first step; a second step will be to discuss with me your interests in specific privacy sub-topics, so that I may provide you additional references.

COURSE SEQUENCE AND TOPICS

There is no required text for this course. All reading material will be distributed on the Canvas site or will be available on the Internet. This material will be supplemented with technical, academic, and popular-press readings from the Internet.

Unless otherwise indicated, the readings are available from the course’s Canvas site. In the schedule below are simply indicated by the author’s name (which is also the file name used on Canvas).
Readings:

Monday, August 27 (no readings)

Discussion: What is meant by privacy, and what is the history of the policy around this concept? How is privacy dealt with in various countries, and how does technology interact with both what we think of as private and how we worry about privacy?

Note that the first two weeks of readings are particularly long, coalescing the discussion of the first week and providing background for the second week. If you did not have time to read everything before the second week, the expectation of being caught up by the third week is acceptable so you that you will have all the information required to complete Homework 1.

Wednesday, August 29

Lecture 2: Privacy Concepts - Security and Anonymity

- Warren and Brandeis, The Right to Privacy
- Daniel Solove, 'I've Got Nothing to Hide' and Other Misunderstandings of Privacy
- The CCG Blog, The Indian Supreme Court on the Right to Privacy: 63 Years of Progress
- Also recommended: Richard Posner, An Economic Theory of Privacy

Monday, September 3 (no class/readings - Labor Day Holiday)

Wednesday, September 5

Lecture 3: Privacy Intrusive Technologies

- New York Times article, 'How Companies Learn Your Secrets'
- Paul Ohm, Broken Promises of Privacy: Responding to the Surprising Failure of Anonymization
- Arvind Narayanan and Vitaly Shmatikov, Myths and Fallacies of "Personally Identifiable Information"
- Also recommended: Sweeney, k-anonymity: a model for protecting privacy

Monday, September 10

Lecture 4: Privacy Enhancing Technologies

- Sven Herpig and Stefan Heumann, Germany's Crypto Past and Hacking future. Links to an external site., Lawfareblog, April 13, 2017.
- About Tor, https://www.torproject.org/about/overview.html.en, Links to an external site.
- Also recommended: Kathleen Benitez and Bradley Malin, Evaluating Re-identification Risks with Respect to the HIPAA Privacy Rule

Homework 1: Currently there is a lack of understanding of online data deletion and retention, as well as expiration of user data. There are two major views on how online data deletion works: UI-Based and Backend-Aware. Write a paper that addresses the best way to communicate deletion based on components such as servers or "the cloud" and in what form. Also answer what is better for expiration of data - generic or controllable expiration periods? Papers should be a maximum of 3-4 pages in length, and should be turned in on via Canvas.

Homework 1 due Sunday, September 16th, 11pm via the Canvas Course Site. Also due: Post your Final Project ideas on the Final Project Discussion thread.
Wednesday, September 12

Lecture 5: Privacy Technologies - Encryption, Security, and Dissent

- Bruce Schneier, The Importance of Strong Encryption for Security. Links to external site. (Note: read Bruce Schneier’s blog regularly - one of the best experts on privacy).
- Wittes, Thoughts on Encryption and Going Dark, Part II, The Debate on the Merits
- Also recommended: An argument for Weak Encryption, Links to external site.

Monday, September 17

Lecture 6: Privacy and the U.S. Legal System

- Michael Froomkin (Sections II and III)
- Dipayan Ghosh, What You Need to Know About California’s New Data Privacy Law. Links to external site.
- Also recommended: Agre, Chapter 7

Wednesday, September 19

Lecture 7: Comparative Approaches to Privacy & Self-Regulation

- Kenneth Bamberger and Deirdre Mulligan, Privacy in Europe: Initial Data on Governance Choices and Corporate Practices. Links to an external site., Parts IV A 1 and 2a, B 1 and 2a, and C 1 and 2a.
- EU Court of Human Rights, Fact Sheet on the ‘Right to be Forgotten’ ruling. Links to an external site. (C-131/12).
- Kenneth Bamberger and Deirdre Mulligan, Privacy on the Books and on the Ground. Links to an external site., pp. 249-251.
- Also recommended: Samuelson, Privacy as Intellectual Property?

**Homework 2**: The Cyber Threat Intelligence Integration Center (CTIIC) is considering funding a project supporting development of the Tor browser (www.torproject.org). The Department of Justice opposes such a move, but the UN and various human rights organizations are strongly in favor. Install a Tor browser and use it for at least half your browsing during the week. Write a three to four-page evaluation describing the tradeoffs in using a Tor browser versus using a standard browser. Discuss which types of users will be likely to use Tor. Make a recommendation whether the government should fund Tor's development and why that would or would not be in the nation's interest. Note: you are free to choose a country other than the United States for this exercise.

**Homework 2 due Sunday, September 23rd, 11pm via the Canvas Course Site.**

**Also required**: Post your Final Project Topic and group members (if working in a group) Final Projects on the Final Project Discussion thread.
Monday, September 24
Lecture 8: Privacy and Economics - the Market for Privacy

- Alessandro Acquisti, Curtis Taylor, and Liad Wagman, The Economics of Privacy
- Alan Henry, Why You Should Care About and Defend Your Privacy: Links to external site.

**Homework 3:** We have talked about the balance between privacy and the development of technology. Is there a regulatory framework that will balance the two? If so, what is it; if not, why not? Has any government got it right? Is there a right way to define privacy regulation that may be implemented for the benefit of data subjects globally? If some government gets it right, what are the chances that other governments will agree and follow the same framework? Papers should be around 3-4 pages in length, and should be turned in on via Canvas.

**Homework 3 due Sunday, October 7th, 11pm via the Canvas Course Site.**

Wednesday, September 26
Lecture 9: Privacy and Economics - the Market for Data

- Thomas Lenard and Paul Rubin, Privacy and the Commercial Use of Personal Information (This is a long article)

Monday October 1
Lecture 10: Privacy and Online Social Networks

- Robert Wilson, Samuel Gosling, Lindsay Graham, A Review of Facebook Research in the Social Sciences
- Zeynep Tufekci, Why Zuckerberg's 14-year apology tour hasn't fixed Facebook: Links to external site. Notice link indicates 15-year instead of '14'
- Also recommended: Ralph Gross & Alessandro Acquisti, Information Revelation and Privacy in Online Social Networks

Wednesday, October 3
Lecture 11: Psychology and Behavior of Privacy

- Alessandro Acquisti, Laura Brandimarte, George Loewenstein, Privacy and human behavior in the age of information

Monday, October 8
Lecture 12: Corporate Privacy

- The HIPAA Privacy Rule: Links to external site.
- USPTO Privacy Impact Assessment Statement
- Pozen, Privacy-Privacy Tradeoffs
- Ella and Lewis, Employee Monitoring and Workplace Privacy Law

Wednesday, October 10
Lecture 13: Smart Cities and Privacy

- Albert Gidari, Smart Cities Are Too Smart for Your Privacy. Links to external site.
- Randy Billings, Smart Cities Come with Inherent Privacy Risks, ACLU Says. Links to external site.
- Laura Bliss, It's Time to Regulate ‘Smart City’ Technology, Too. Links to external site.
Monday, October 15 & Wednesday, October 17

There will be no required readings this week. The class sessions will be devoted to final project presentations. Based on submissions of project topics and group members, we will organize you into presentations over the two days and announce what groups will present on Monday or Wednesday.

Friday, October 20: Final Projects papers are due at noon via Canvas.

Final Project Notes:

For the final project students will prepare a presentation on a technology that raises a privacy issue. You may work in groups of no more than four members. Presentations will be ten minutes long, to be followed by a two minute Q&A. The presentation should cover the following issues:

- What is the technology?
- What privacy issues does it raise?
- How are these being handled?

The presentation may be a group effort, and grading will be assigned partially on a group level and partially on an individual basis. I will ask each group to provide me with a brief memo describing how each member contributed to the group effort. In addition, each student or group will write a paper (of up to ten pages) discussing what and how privacy protections can be instituted in that situation. The paper should discuss what the barriers are to adopting privacy-enhancing solutions, and the likelihood of such solutions being implemented.

Final Project Ideas:

- Internet of Things.
- Smart Meters.
- Inter-Vehicle Communication.
- Regulation of surveillance technologies.
- Open sourcing of citizen-supplied data (e.g., London Transport Information).
- Regulation of private-sector data aggregators.
- The failure of P3P.
- Genomic testing by private parties (e.g., 23andMe).
- India’s proposed Data Protection Framework.
- A topic of your choice
<table>
<thead>
<tr>
<th>Performance Element</th>
<th>Sophisticated</th>
<th>Competent</th>
<th>Not Competent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Conduct Research</strong></td>
<td>Uses multiple sources, successfully locate appropriate and important information. When information is unavailable, explain the process done to try and locate the information.</td>
<td>Use multiple sources, successfully locate a few pieces of appropriate information but overlook at least one key piece of information. If not available, note that the necessary information is unavailable.</td>
<td>Use a source to locate some information successfully but overlook more than one key piece of information.</td>
</tr>
<tr>
<td><strong>Calculations and/or Evaluation</strong></td>
<td>Make all calculations and/or qualitative evaluations accurately. In-depth interpretation of results individually as well as an integrated whole. Makes logical assumptions but only when necessary and which are clearly explained.</td>
<td>Makes all calculations and/or qualitative evaluations accurately. Interpret results individually. Makes assumptions when necessary which are clearly explained.</td>
<td>Does not make all calculations and/or qualitative evaluations accurately. Limited interpretation of results OR make errors in calculations. Interpret results in isolation (individually). Makes illogical assumptions when not necessary or does not answer question because data is not readily available.</td>
</tr>
<tr>
<td><strong>Completeness</strong></td>
<td>Covers all questions. Proper discrimination used in including information on important related issues. No superficial information included. Includes all proper attribution. When information is not available, a report of research done is provided. Reference to previous answers when necessary in answering subsequent questions with little or no repetition.</td>
<td>Covers all questions making it clear what issue is being addressed. Includes attribution. Explains when information is not available to answer question. Refers to parts of previous answers when necessary in answering subsequent questions.</td>
<td>Covers most questions but may answer multiple questions together without distinguishing which question is being addressed. Includes unnecessary information. Does not include reference to research.</td>
</tr>
<tr>
<td><strong>Draw Conclusion</strong></td>
<td>Uses information to draw logical conclusion. Supports conclusion with well thought out calculations and facts. Distinguish what the important facts are. Relate Analysis to topics discussed in class or in current events.</td>
<td>Uses information to draw logical conclusion but the conclusion is not clearly supported by data or some data is not accounted for by the conclusion.</td>
<td>Draws no conclusion or draws a conclusion that is not logical. Does not support conclusion with research and prior argument.</td>
</tr>
<tr>
<td><strong>Clarity and Presentation of Written Expression</strong></td>
<td>Expresses ideas clearly in own words, being careful not to duplicate presentation of the references; direct quotes held to a minimum. No spelling errors. Grammatically correct. Written report has professional appearance using graphics when appropriate which are referred to and explained in write up.</td>
<td>Expresses in own words, not duplicating language of the references; a few direct quotes but not excessive reliance on the language of research. Very few spelling or Grammatical errors but ideas are still clearly understandable. Written report has neat professional appearance.</td>
<td>Relies heavily on the words of references to present the argument. Many spelling &amp; grammatical errors which interfere with readers' ability to understand. Written report does not appear professional. Includes no graphs, charts etc when appropriate or includes graphs and charts that are not referred to or are inappropriate.</td>
</tr>
<tr>
<td><strong>Conciseness and Organization</strong></td>
<td>Contains clearly developed ideas in a logical sequence. Completely answers all questions without unnecessary information. Refers to pertinent information already presented with little or no repetition of information.</td>
<td>Contains clearly developed ideas in a logical sequence. Completely answers all questions but may contain unnecessary information. Does not refers to pertinent information presented in earlier questions or part of analysis.</td>
<td>Is disorganized and difficult to follow. May not be complete. Repeats information unnecessarily.</td>
</tr>
</tbody>
</table>