Assignment List: 1 Semester Example

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| Week | Topic/Lecture | Assignment Type  (Group/Individual) | Brief Assignment Description | Full Assignment Description |
| Week 1 | Topic 1: Lecture 1 | Individual | Report and Presentation | Find and summarise three ways in which Artificial Intelligence has been used to support the Sustainable Development Goals. Develop 2-3 slides and come to class ready to present these projects to your peers. Include the following, at a minimum:   * Name of the project * Link * Who is involved? * Who are the stakeholders? * Which SDG does it impact? * How is Artificial Intelligence used? * What is the impact/how is the deployment evaluated?   Summary (300-500 words)  Students should record their 5-minute presentation and submit along with written materials. |
|  | Topic 1: Lecture 2 | Individual (NG) | Reading | Selected Reading: First two chapters of “Artificial Intelligence and International Affairs: Disruption Anticipated”  by Jacob Parakilas, Hannah Bryce, Kenneth Cukier, Heather Roff, Missy Cummings |
| Week 2 | Topic 5: Lecture 1 | Individual | Report and Presentation | \*See Lecture in Formatted Overview\*  Follow the same process as in class for an SDG area of choice. Prepare 5-6 slides and a written report covering all questions in sufficient detail and with all supporting references. |
|  | Topic 5: Lecture 2 | No Assignment | N/A | N/A |
| Week 3 | Topic 6: Lecture 1 | Group | Initial Research Briefs | Each group is responsible for identifying 3 potential questions, and completing an Initial Research Brief for each.   * Can be extensions of previously completed assignments. * Can be based on partners who presented in class. * Can be based on AI for Good Foundation project library. * Or an entirely new set of ideas.   Develop 2-3 slides on each potential idea, and present the one that your group believes is the most likely to be feasible, impactful, and interesting. |
|  | Topic 6: Lecture 2 | Group | Ongoing Project Plan | Each group is responsible for meeting with their mentors for at least 1 hour per week, and developing an Initial Exploration Document (using the provided template, or similar) to be presented in week 7, as well as the Project Plan, which will be submitted at the end of the semester. The Initial Exploration Document should be submitted for feedback to mentors/teaching assistants with sufficient time for integration of feedback before presentations. This is a significant assignment, and foundational to the success of the projects. Each student should spend 10-15 hours working on these tasks. |
| Week 4 | Topic 2: Lecture 1 | Individual | Report and Presentation | Choose a topic that you are passionate about, and identify who are the main research groups involved in its exploration? Who is funding this research and what are (plausibly) their expectations of the research results? How much funding comes from different sources? Do the scientific results point to a diversity of effects, or do results align with the agendas of the funding parties?  Put together a report presentation (a few slides + 300-500 word summary) that answers the questions above, with relevant links to first-party information sources, and your overall conclusion as to how trustworthy the results are from a procedural perspective. |
|  | Topic 2: Lecture 2 | Individual | Report and Presentation | \*See Lecture in Formatted Overview\*  Find a similar statement to those explored in class, and perform the exercise independently.   * Map out as many linked claims as possible that you can find in the broad cross section of the media. * Link each claim to relevant/cited scientific studies. * For each study, do the data, methods, and research results support the claim fully? * Should the claim be strengthened or qualified? * What is the overall takeaway from doing this exercise?   Come ready with 2-3 slides and 300-500 word write-up to present your exploration to the class.  Reading: “Popper” by Bryan Magee. This book explores the evolution of thought around scientific method, falsifiability, and in particular how the work of Karl Popper interacted with this topic and the topic of knowledge in society. At 100 pages, it’s the perfect couple of hours of reading to prepare students for the class discussions. |
| Week 5 | Topic 3: Lecture 1 | Individual | Report and Presentation | Select a detailed sub-goal of the SDGs. Analyse its potential impact on other SDG areas and metrics. Identify relevant studies that quantify or evaluate the relationship. Develop 3-4 slides of presentation materials to lead a class discussion around this topic. Submit a 1-2 page brief, which offers summary, analysis, and possible ways to reconcile the issues identified. |
|  | Topic 3: Lecture 2 | Individual | Reading | Readings from “Causality” by Judea Pearl, and “Causal Inference” by Scott Cunningham. |
| Week 6 | Topic 4: Lecture 1 | Individual | Report and Presentation | Make a causal statement that (a) you reasonably believe to be true, (b) is related to the SDGs. Design a series (2-3) of potential interventions (given access to the relevant population, reasonable cash, computation, and storage resources) in order to validate the causal relationship between your chosen variables. Keep in mind the items covered in class, and produce a report (2-3 pages) and presentation that describe the causal relationship, summarise different views around the relationship, describe in detail the interventions, how you would go about determining that the causal relationship has been sufficiently established, and an overall conclusion. Come to class prepared to present. |
|  | Topic 4: Lecture 2 | Individual | Report | For a Sustainable Development Goal of your choice, research as many openly available data sets as you can find online or through other research portals available to you through university resources and subscriptions. For each data set, identify the following information:   * Who owns the data? * In what publications/studies has it been used? * Is it openly available for research purposes? * How many samples are included? * How does coverage compare to the breadth of the issue in the real world? * What attributes are included in the data set? * Are there key attributes that are missing? * Are the data detailed enough to be used as a basis for scientific research, or are they simply summary statistics of someone else’s research?   Every SDG is associated with hundreds of openly available data sets. Aim to identify at least 10. The more the better! |
| Week 7 | Midterm  (Topic 8) | Group | Presentation of Initial Exploration Document | Students prepare a 5 minute presentation on their Initial Exploration Document, which will be followed by a 5 minute instructor-facilitated discussion.  \*NOTE: there are no flipped classroom assignments in the 1 semester syllabus\* |
| Week 8 | Topic 7: Lecture 1 | Individual | Presentation | In September of 2020 the US Federal Government released a first draft “US Data Ethics Framework”, whose purpose was to guide federal agencies in the appropriate use of data while promoting the public good. Read the (brief) document and answer the following:   * To what extent does the “ethical data framework” require behaviours that are different to how we would hope US federal employees behave with respect to non-data work? * Are there topics missing from this framework in order to encourage inclusivity, fairness, and trust of the government's use of data on individual subjects? * Is it accurate for the document to distinguish aggregate data as being low-risk to individuals, relative to individual-level data? [Consider that the majority of policy decisions are at an aggregate level, but always have individual repercussions.]   Develop 2-3 slides and come ready to present your findings to the class. |
|  | Topic 7: Lecture 2 | Group | Project Deliverable | Core data collection and system design (storage, databases, infrastructure components, UX considerations, deployment plan) |
| Week 9 | Topic A | Group | Project Deliverable | Machine Learning development plan |
| Week 10 | Topic A | Group | Project Deliverable | Modelling, Infrastructure Development |
| Week 11 | Topic D | Group | Project Deliverable | Proof of concept deployment plan (recruiting a test population) |
| Week 12 | Topic G | Group | Project Deliverable | Evaluation and Project Report |
| Finals Week | N/A | Group | Project Plan  Presentation  All Deliverables | Final Presentations to stakeholders, and submission of project packet with all resources. |

Grading Schema

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| Percent of Total Grade | Individual or Group | Assignment Type | Peer or Instructor Graded | Grading System | Maximum Grade Points Possible |
|  |  | Reports (x7) | Peer | ✓-, ✓, ✓+  (1%, 3%, 5%)  5 points total possible per report, lowest report grade dropped | 30 |
| 60% | Individual | Presentations (x7) | Instructor | 2 points total possible per presentation, 1 bonus point a semester | 15 |
|  |  | Participation | Instructor | 15 points total possible, over course of semester | 15 |
|  |  | Initial Research Brief | Instructor | 3 points possible | 3 |
|  |  | Midterm: Initial Exploration Document and Presentation | Instructor | 10 points possible  (7 points for presentation, 3 points for Initial Exploration Document) | 10 |
| 40% | Group | Project Deliverable (x4) | Instructor | 4 points possible  (1 point per deliverable) | 4 |
|  |  | Evaluation and Project Report | Instructor | 3 points possible | 3 |
|  |  | Final (Presentation, Project Plan and All Deliverables) | Instructor, with input from judges and mentor | Presentation = 10 points possible  Project Plan= 5 points possible  Compiled Deliverables= 5 points possible | 20 |