

## USING THE COMPLEXITY OF CLIMATE CHANGE TO TEACH INTELLIGENCE ANALYSIS

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### ABSTRACT

Climate change and related topics are ideal subjects for teaching intelligence analysis in higher education. This article describes how Edith Cowan University's Intelligence Program examines climate change through the prism of a complex and fuzzy problem. Student takeaways include a deeper understanding of the nature of climate change and its implications for national security and enhanced analytical skills.

*Keywords: climate change information universe, climate security, fuzzy problem*

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Climate change is an emotionally charged and fiercely contested contemporary challenge impacting communities locally, nationally, and internationally. The impact of climate change intersects national security, law enforcement, economic, environmental, and social domains in various ways, of an almost infinite array of complex problems that can be used to teach intelligence analysis. The climate change information universe is broad, deep, and easily accessible to students using readily available information searching technologies. The politicized and contested nature of the climate debate ensures students are challenged with disinformation, propaganda, and information overload, which tests their intelligence analysis skills to the highest level. This article provides a brief insight into how climate change teaches intelligence analysis to undergraduate students at Edith Cowan University (ECU). It should be noted that climate change is not part of the taught curriculum; instead, it provides a means by which a wide range of analytic skills are developed and practiced.

### EDITH COWAN UNIVERSITY

Established in 1991, ECU's purpose is "to transform lives and enrich society through education and research" (Edith Cowan University [ECU], 2016). In 2020, ECU had 31,409 enrolled students. The Bachelor of Counter-Terrorism, Security and Intelligence was established in 2007 and currently sits under the School of Science. As of May 2021, 299 students are enrolled in the degree (61% male, 39% female). The degree aims to bring together key aspects of national and international security, emphasizing contemporary security issues (ECU, 2021). This degree consists of 16 core units/courses and an eight-unit/course major selected by the student.

The intelligence program makes up four of the core units/courses. Students commence their course of study with *Intelligence Foundations* (SCY 1117), which introduces students to the

concept of intelligence as a support to decision making, and *Applied Intelligence* (SCY 2120), which introduces students to intelligence analysis and writing intelligence assessments on authentic, current, and complex topics. In their third (final) year, students complete *Intelligence Analysis* (SCY 3107), which considers intelligence analysis from a strategic perspective, and Counterintelligence (SCY 3506), which is a capstone unit/course that ensures students can demonstrate understanding of the intersection of security and intelligence in addition to the defensive and offensive nature of counterintelligence as a discipline.

### **CLIMATE CHANGE: A COMPLEX STRATEGIC SECURITY PROBLEM**

Climate change has been an enduring authentic intelligence problem that has been at the center of ECU's intelligence program since 2007. The problem of climate change provides a unique focal point in the intelligence program that demonstrates the intersection of national security and criminal issues as contemporary real-world intelligence problems. In SCY 1117 and SCY 2120, the issue of climate change is regularly addressed within the context of limited nationally focused problems, most notably climate-induced water scarcity. Climate-induced water scarcity sees national security interests intersect with the criminal in the Australian context as various stakeholders exploit valuable water resources. Climate change is primarily addressed in the unit/course *Intelligence Analysis* (SCY 3107) as a complex strategic security problem.

#### **Applied Intelligence (SCY 2120)**

Applied Intelligence (SCY 2120) is a core unit/course undertaken in the students' second year of study and is their first introduction to intelligence analysis. The unit focuses on contemporary real-world problems that are at the fore of community attention. In addition to completing two full intelligence assessments, students are required to complete a weekly assessment task that contributes toward an intelligence portfolio. Weekly assessment tasks enable students to be exposed to a wide range of intelligence problems, many of which are perennial in the Australian context. Tasks within the climate change orbit include water scarcity and water theft, environmental action, and impacts of major weather events from a criminal or national security perspective. Including these issues ensures students can understand that the intelligence remit is much broader than terrorism and law enforcement.

#### **Intelligence Analysis (SCY 3107)**

*Intelligence Analysis* (SCY 3107) is a third-year, first-semester unit focused on intelligence analysis methodologies commonly used in the strategic environment. The student cohort is a mixture of on-campus and online, and all in-class sessions are recorded and uploaded to the university's learning management system. Specific modules focus on defining the question (diagnosing the problem); environmental scanning; strategic shocks; long-term strategic forecasting; and managing the uncertainty associated with information gaps, information overload, or misinformation.

Throughout the semester, students evaluate a range of authentic fuzzy problems. Fuzzy problems are realistic and complex, although “multiple solutions exist and some may be better than others, they all exact trade-offs—maximizing some values while undermining others—and present risk and uncertainty” (Lahneman & Arcos, 2017, p. 973). As climate change is one of the world’s most significant fuzzy problems (Bruyninck, 2018; Intergovernmental Panel on Climate Change, 2014; Sun & Yang, 2016), there has been increasing focus in the SCY 3107 unit about the local, national, and international impacts of climate change and climate security. This includes class discussion and case study exercises about assessing the effects of increasing temperatures, rising sea levels, and decreasing food biodiversity and water security on remote islands in the Pacific Ocean. The unit also includes a case study on the impact of political, economic, and security factors, plus the compounding issue of glaciers melting due to climate change on Afghanistan’s natural environment, agricultural industry, and access to water and sanitation.

### **ASSESSMENT OF SCY 2120 AND SCY 3107**

SCY 3107 contains three assessments: a background brief (worth 20% of the unit), a strategic intelligence assessment (50%), and a recorded presentation on indicators and warnings (30%). The assessments are all linked to a single theme. Since 2019, the assessments have directly linked climate change and climate security, focusing on food security in the Horn of Africa and water security in the Mekong Basin.

In the 2021 iteration of the unit, students were asked to prepare a strategic intelligence assessment about water security in the Amazon Basin over the next five to ten years and assess the implications for the countries in the Amazon Basin (Brazil, Peru, Colombia, and Bolivia), the immediate region (South America), and the rest of the world. This has involved students researching and analyzing complex, interrelated, and often cyclical factors such as the impact of a growing and increasingly urban population on water supply, the impact of climate change on the frequency and severity of natural disasters, and the implications of governments implementing policies that may have economic benefits but have severe environmental consequences in the form of rapid deforestation and increased pollution of the waterways. SCY 2120 and SCY 3107 consistently receive positive feedback from students. Although there were no questions in the official ECU unit review process about the specific content of assignments and class exercises, anecdotal feedback indicates students think highly of, and learn a lot from, the complexity of the assignments in both units.

### **FUTURE VERSIONS OF SCY 2120 AND SCY 3107**

ECU plans future versions of SCY 2120 and SCY 3107 to include more in-depth case studies and intelligence-assessment tasks relating to climate change and climate security. One of the case studies currently being developed for the SCY 3107 focuses on how misinformation has impacted the amount of climate change skepticism and discussions about responding to climate change. There are also plans to collect more specific feedback from students studying the intelligence program about how their knowledge and analytical skills have changed by completing the units.

## **CONCLUSION**

Climate change and climate security are complex and fuzzy problems that have significant implications at the local, national, and international levels and are authentic problems being analyzed by intelligence analysts worldwide. Climate change as an overarching concept allows lecturers to engage students in topical and relevant intelligence problems that may be focused on developing intelligence products supportive of policy decision making through to the more applied products that support tactical and operational decision making. More importantly, climate change is a global issue uniquely suited to the open-source information limitations that constrain student information collection. Therefore, these are ideal topics for students studying intelligence analysis.

## REFERENCES

- Bruyninck, H. (2018). *Understanding and acting on the complexity of climate change*. European Environment Agency. <https://www.eea.europa.eu/articles/understanding-and-acting-on-the-complexity>
- Edith Cowan University. (2016). *ECU Strategic plan 2017-2021: World ready*. [https://www.ecu.edu.au/\\_\\_data/assets/pdf\\_file/0007/730555/ECU-Strategic-Plan-2017.pdf](https://www.ecu.edu.au/__data/assets/pdf_file/0007/730555/ECU-Strategic-Plan-2017.pdf)
- Edith Cowan University. (2021). *Bachelor of Counter-Terrorism, Security and Intelligence*. <https://www.ecu.edu.au/degrees/courses/bachelor-of-counter-terrorism-security-and-intelligence>
- Intergovernmental Panel on Climate Change (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. [https://www.ipcc.ch/site/assets/uploads/2018/02/SYR\\_AR5\\_FINAL\\_full.pdf](https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf)
- Lahneman, W.J. & Arcos, R. (2017). Experiencing the art of intelligence: Using simulations/gaming for teaching intelligence and developing analysis and production skills, *Intelligence and National Security*, 32(7), 972-985. <https://doi.org/10.1080/02684527.2017.1328851>
- Sun, J. & Yang, K. (2016). The wicked problem of climate change: A new approach based on social mess and fragmentation. *Sustainability*. 8(12), 1312. <https://doi.org/10.3390/su8121312>