WATER IN CENTRAL EURASIA: TRIBUTARIES OF CHANGE

WHITE PAPER

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The University of Pittsburgh, ranked by *US News and World Report* among the nation’s top 20 public colleges and universities, is a comprehensive research institution with multiple hubs driving humanities and international education. At Pitt, “humanities” and “the global” have a long history of mutual strengths: the Association of Public and Land-Grant Universities (APLU) honored the University of Pittsburgh with the Gold Level Award for Global Engagement in 2020. Pitt is also one of the four recipients of the 2017 Senator Paul Simon Award for Comprehensive Internationalization from NAFSA: Association of International Educators. Moreover, the 2016 Global Plan for Pitt calls for the University to “cultivate global-ready students,” and the University Center for International Studies (UCIS) serves as a matrix for the humanities’ intersection with the social sciences, (pre-) professional and STEM fields, and international education. UCIS hosts three U.S. Department of Education Title VI National Resource Centers (NRCs) and three Foreign Language and Area Studies (FLAS Fellowship) grantees, including the Center for Russian, East European, and Eurasian Studies (REEES) and the Asian Studies Center (ASC). UCIS also offers over 12 transcript-level undergraduate credentials.

Pitt’s Dietrich School of Arts and Sciences (Arts & Sciences), with nearly 500 faculty in 19 humanities departments and programs, has typically over 45,000 undergraduate student enrollments in over 1,000 humanities courses each semester. Through Arts & Sciences, the College of General Studies, the University Honors College, and UCIS, Pitt offers over 50 humanities-focused majors, minors, and certificate programs that enroll over 4,400 students annually. The University Library System supports these programs with extensive area studies and other humanities-related collections, accompanied by course and subject guides.

In addition to demonstrating strengths in humanities education, Pitt has created new synergies with initiatives on sustainability. The Business of Humanity® Project, a research and teaching collaboration between the Katz Graduate School of Business and the Swanson School of Engineering, is driven by concern for social and environmental sustainability, gender equality, and diversity—habits of mind that the humanities cultivate, making this partnership an excellent example for incorporating globally responsible management education into business curricula. The Swanson School’s Engineering for Humanity Certificate and the Sustainable Development Certificate in Global Studies, endorsed by the College of Business Administration, provide additional models for integrating thematically linked courses into curricula across disciplinary units.
Thanks to support from the National Endowment for the Humanities in 2018-2021, the University of Pittsburgh’s Center for Russian, East European, and Eurasian Studies (REEES) and the Asian Studies Center (ASC) designed a cluster of three undergraduate courses with linked experiential learning activities on the theme of **Water in Central Eurasia**. These courses provide holistic education for the twenty-first century through the interdisciplinary investigation of a real-world issue. The thematic concentration on water reflects the contemporary significance of natural resource management, which invites interdisciplinary inquiry and provides an investigative lens for studying Central Eurasia. This project is constructed along mutually supporting trajectories: encouraging students to think about water issues on an unfamiliar terrain and to explore a largely unstudied area of the world, while addressing an issue they know to be of global urgency—the need for clean, sustainable water sources.

**WHY CENTRAL EURASIA?**

Central Eurasia is at the crossroads of four distinct research and policy questions. First, past Silk Road oasis settlements—central to long-distance Eurasian connections since Neolithic times—were simultaneously nodes for epidemics, human mobility, geopolitical rivalries, and peaceful exchange, whether commercial, cultural, or technological. Second, today’s rapidly developing Central Eurasian countries are sites for competing plans of integration, as China, India, Russia, the E.U., and the U.S. vie over large-scale infrastructure projects to link the region’s vast resources to trans-regional supply chains. Third, as the longest-running American conflict, the U.S. war in Afghanistan has been environmentally impactful, historically significant, and culturally cataclysmic. And finally, located on the northern frontier of the Islamic world, Central Eurasia is also critical to global issues of migration, security and human rights, while highlighting the diversity of Muslim communities.

**WHY WATER?**

Stretching from the temperate zone to the Arctic and encircled by Russia, Iran, India and China, greater Central Eurasia sits within critically endangered lakes, aquifers and seas, flowing from rivers fed by snowmelt and rapidly melting glaciers in the region’s many mountain ranges. Far from any ocean, the region includes deserts and expanses of semi-arid grassland. Understanding this complex ecology—historically, the domain of scientific inquiry—is critically important for humanists, social scientists, business, and engineering specialists. The geography of water’s permanent or periodic adequacy determines where sedentary and nomadic pastoralists live with their herds and flocks, where land is cultivated, and where cities and routes of travel emerge. This has a huge impact on culture, history, aesthetics, and belief: when the location and quality of water changes due to climatic or human influences, the spatiality and nature of human activity are entangled with it.

To attract students from a broad range of majors across the humanities, social sciences, and pre-professional fields in business and engineering, the **Water in Central Eurasia** courses combined five key elements—interdisciplinary connections across the entire campus; high-impact experiential learning; no prerequisites to enrollment; the strategic fulfillment of general-education requirements; and the linking of seven relevant credentials offered through the University Center for International Studies, the Swanson School of Engineering, and the College of Business Administration. These five elements provided an unusually sturdy scaffolding for a new field of pre-professionalization for the next generation of young experts at the intersection of water research and Central Eurasian studies. The initiative’s success in creating highly visible curricular innovations was recognized in *Strategies for Recruiting Students to the Humanities: A Comprehensive Resource* (National Humanities Alliance, 2021) for modeling a new approach to elevating the profile of humanities education on campus.
CENTRAL EURASIA WATER PAST: Climate Change in the Preindustrial Era

Offered under a history course number, this course introduces students to debates around the very constitution of “Central Eurasia” along five analytic trajectories: as a set of topographical markers (the Aral Sea Basin); as a set of five post-Soviet nation-states; as a larger geographic expanse that stretches from southern Russia to northern China; as a distinct site of recurrent environmental challenges (desertification, cotton production, irrigation); and as a cultural field of nomad and settler cultures. Relying on an interdisciplinary selection of key texts, the course introduces students to historical and social analysis “from below” and lays the groundwork for a later, more in-depth examination of two core questions for the region: 1) is water power? and 2) does water management determine, for better or worse, human mobility, epidemics, geopolitical rivalries, and peaceful exchange, whether commercial, cultural or technological?

Instructors: Patryk Reid and Aziza Shanazarova, UCIS Postdoctoral Fellows

CENTRAL EURASIA WATER PRESENT: Engineering in the Post-Industrial Empire

Given the need to highlight the contributions that political science offers to our study of the Anthropocene, this interdisciplinary course investigates the role of water in the political development of contemporary Central Eurasia. As a landlocked world region, Central Eurasia provides a compelling case for the study of the political, social, and technological innovations that have yielded sites of ecological disaster and environmental frontiers of opportunity. This course guides students through the key stages of Soviet political change and their impact on Central Eurasian water culture: the collapse of tsarist governance and the withdrawal of its engineer specialists, ending its “civilizing mission”; the arrival of US experts whose modern irrigation methods inadvertently contributed to environmental degradation and economic dependence; the “shock” construction sites of the Stalin era; the massive dam-building projects of the late Soviet period; and finally the issues relating to the international cooperation to manage the river basins connecting Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, and Kazakhstan.

Instructor: Vasili Rukhadze, Visiting Lecturer, Political Science

CENTRAL EURASIA WATER FUTURE: Encounters in the Anthropocene

Listed as a business course in strategic management and planning, this course enables students to develop critical thinking skills in fraught socio-political environments, and to gain a command of analytical techniques that support socially equitable planning and strategic decision making in contexts of great complexity and extreme uncertainty. Understanding the challenge of scarce water resources—which poses an existential threat to individuals, industries, communities, countries and indeed to humanity—will be one of the three themes of the course. The course’s second theme is the understanding of the socio-political and economic context of Central Eurasian countries with a primary focus on Kazakhstan. The third theme, drawing from the other two frames, is understanding and responding to the challenge of a “wicked problem,” not amenable to resolution by traditional problem-solving strategies. In this course, students employ analytical and planning techniques that are designed to address wicked problems to develop sustainable strategies for Central Eurasia’s issues with water, primarily employing Kazakhstan’s case in order to enable strategy and policy development in a classroom setting.

Instructor: John C. Camillus, Donald R. Beall Professor of Strategic Management
To ensure the sustainable implementation of this project, REEES and ASC convened a planning team comprised of faculty in history, political science, business, and engineering, conducted an initial planning process, and secured necessary institutional commitments during the proposal development phase in 2017. Initial data collection conducted the same year also confirmed that, by integrating scientific and humanities perspectives, the courses in the Water in Central Eurasia cycle were going to fulfill an unmet curricular gap at Pitt. Senior university administrators also enthusiastically supported this project as it proposed to anchor recent initiatives on global learning in Pitt’s undergraduate programs, while supporting the University’s growing institutional capacity in Central Eurasia.

INTEGRATING DISCIPLINARY KNOWLEDGE

To impact undergraduate teaching in the humanities, social sciences, business, and engineering, Project Directors built interdisciplinary knowledge of the Central Eurasian region, water management, and humanistic inquiry by convening key faculty and staff for three summer workshops in July 2018.

Teaching Central Eurasia

Facilitated by UCIS Postdoctoral Fellows Drs. Patryk Reid and Colin Johnson, the first workshop encouraged conversations that defined Central Eurasia as concurrently local and global. Based on select readings, project team members engaged with this region as a space with its own political, economic, and cultural particularities that evolved in contact with other world regions. Discussions also focused on exploring how water issues revealed “problems” that were either universal or comparable to other places rather than uniquely specific to the region.

Teaching Water

The second workshop explored key concepts and disciplinary issues for teaching water in history versus in engineering. Through readings curated by Dr. Abigail Owen (Director, Program in Environmental and Sustainability Studies, Carnegie Mellon University), key project personnel historicized Western approaches to groundwater extraction and water resource development, questioned the claim such methods make to universal scientific validity over local knowledge and customs, and discussed water management practices as historically and culturally situated. In comparison, Dr. David Sanchez (Assistant Professor of Civil and Environmental Engineering, Swanson School of Engineering) encouraged project team members to engage with environmental science perspectives on water scarcity, technological innovations that lead to poor water management, and sustainable designs that reduce water stress.

Interdisciplinary Teaching

Project Directors Drs. Nancy Condee and Ruth Mostern facilitated the third workshop in collaboration with Dr. John Camillus (Donald R. Beall Professor of Strategic Management) based on selected readings, including the 2018 report by the National Academies of Sciences, Engineering, and Medicine titled The Integration of the Humanities and Arts with Sciences, Engineering, and Medicine in Higher Education: Branches from the Same Tree and the 2017 edition of The Oxford Handbook of Interdisciplinarity, edited by Robert Frodeman. Discussions explored models of interdisciplinarity ranging from multidisciplinary to transdisciplinary teaching and considered challenges to meaningfully incorporate pedagogies and cultivate habits of mind that the humanities, social sciences, business, and engineering can advance in a collaborative framework.
DESIGNING COURSES AND ASSESSMENT

Building interdisciplinary knowledge enabled participating faculty to commence in early fall 2019 with designing a course cycle that incorporated humanities pedagogy across the Present, Past, and Future courses while encouraging students to think critically about sustainable solutions to water management across political science, business, engineering, and environmental science. The working group also defined the core questions that would drive the courses on Water in Central Eurasia and collaboratively refined a list of readings designed to be: 1) intelligible to and useful for undergraduate readers; 2) accessible across multiple academic fields; and 3) a reliable basis for evolving work among the faculty participants over the three-year project span. These workshops further enabled Project Coordinators and the Graduate Program Assistant Jee-Eun Song to work with the University Center for Teaching and Learning in order to align project and course learning outcomes (Appendix A.) as well as assessment instruments (Appendices B. and C.) with the 2017 UCIS Global Learning and Engagement Rubric, designed to be integral to the 2016 Global Plan for Pitt.

LAUNCHING THE CYCLE

To foster successful student engagement from the beginning, Project Directors Nancy Condee and Ruth Mostern along with Project Coordinator Zsuzsánna Magdó presented the Water in Central Eurasia initiative in early fall 2019 to senior university leadership in the Office of the Provost, the Office of Student Affairs, and the three participating schools, obtaining broad buy-in for two mutually supporting efforts:

Creating Flexible and Diverse Curricular Pathways

Broad institutional support enabled project coordinators to harmonize advising and work with the Schools of Arts and Sciences, Business, and Engineering to incorporate the Past, Present, and Future courses into general education programs, existing majors and minors, as well as the following seven interdisciplinary credentials:

• Asian Studies Certificate
• Certificate in Russian, East European, and Eurasian Studies
• Engineering for Humanity Certificate
• Global Studies Certificate
• Related Concentration in European and Eurasian Studies
• Sustainability Certificate
• Sustainable Development Certificate in Global Studies

Publicizing through Coordinated Peer-to-Peer Engagement

Widespread endorsement by senior leadership also allowed Undergraduate Student Ambassadors Clara Weibel and Kyle Bobeck to promote the courses among students by conducting over 200 class visits in courses offered through participating schools, by tabling at Student Affairs-led orientations and engagement events, and by offering peer-to-peer mentoring under the supervision of project advisors.

Piloted sequentially (starting Spring 2019 through Spring 2020), the three Water in Central Eurasia courses enrolled a total of 81 students (maximum capacity: 96). As the courses were launched, the project team held follow-up meetings in February 2019, June 2019, and February 2020 to reflect on the first-time implementation of the courses, to update syllabi, and to ensure the integration of learning goals across the cycle. Offered again in Fall 2020 and Spring 2021 at previous capacity, the Past, Present, and Future courses enrolled a total of 72 students. The next cycle of courses is currently planned to be re-launched starting Spring 2022.
EXPERIENTIAL LEARNING

To enrich the courses in the Water in Central Eurasia cycle with high-impact experiential learning activities, key project team members leveraged resources and campus partnerships to organize student-facing events on water equity, environmental activism, and regional and global studies, while also creating study away programs to further connect students with professionals in the governmental, non-profit, and educational sectors, especially those serving marginalized communities.

FEATURED EVENTS

Youth Global Town Hall
Undergraduate Student Ambassador Clara Weibel moderated the Youth Global Town Hall held at Pitt during the September 2019 Climate Strikes that were organized in anticipation of the UN Climate Summit taking place in New York during the same month. Co-sponsored by REEES and ASC and hosted by Pitt’s European Studies Center (ESC) and the Global Studies Center (GSC) in partnership with the Heinrich Böll Stiftung, Global Voice, and the Workable World Trust, the Youth Town Hall featured youth activists Leandra Mira (FridaysForFuture, Pittsburgh, PA) and Robert Denovich Willard (World Aral Region Charity, Guilderland, NY), among others. By moderating the panel session, Ms. Weibel exemplified the project’s global learning and engagement outcomes for undergraduate peers while enabling middle and high-school students from the Greater Pittsburgh area to explore models of engagement related to socially just climate action.

Water Is Life: Forum
To enhance Pitt student engagement with regional and global challenges to water equity, Project Coordinator Dr. Zsuzsanna Magdó collaborated with Pitt’s Ford Institute for Human Security and the Global Experiences Office (GEO) to host a forum titled “Water Is Life” in September 2019. The forum connected Pitt students with speakers from the Pittsburgh-based Fair-Trade Learning organization Amizade, the World Aral Region Charity, and the NGO EcoSoap Bank. Held at Pitt’s new student-centered international engagement center called the Global Hub, this event also served to highlight the Water in Central Eurasia courses to a broad range of undergraduates.

Dangerous Work: Panel
To engage Pitt’s undergraduate audience with comparative perspectives on environmental policy in the U.S. and Eurasia, Undergraduate Student Ambassador Clara Weibel and Project Coordinator Dr. Zsuzsanna Magdó organized a panel discussion in October 2019 on the NGO report titled Dangerous Work: Environmental NGOs and Activists in the U.S., Russia, the Caucasus, and Central Asia published by FrackTracker Alliance earlier the same year. The panel featured speakers from environmental organizations such as Crude Accountability (U.S.), Environmental Watch on the North Caucasus (Russia), and Ecoforum of NGOs (Kazakhstan). Supported by REEES, the Global Studies Center, and the Student Office of Sustainability, this event invited undergraduates to reflect on human security and climate justice in the U.S. and Eurasia while introducing them to environmental activism and the challenges NGOs face when working to support informed public decision-making on environmental policy.

Nature’s Revenge: Lecture Series
To further link co-curricular programming to the courses on Water in Central Eurasia, REEES hosted a series of live-recorded interviews with scholars and activists in Spring 2021. This series, titled “Nature’s Revenge: Ecology, Animals, and Waste in Eurasia,” invited Pitt students and faculty with a broader public to explore the potential future of human-nature interactions in Eurasia, crucially including water resources. Sponsored by REEES, the synchronous sessions were recorded and made available for undergraduate teaching and global public consumption on Scan’s Russia Blog and Podcast, a well-known weekly podcast focusing on Eurasian history, politics, and culture.
STUDY AWAY PROGRAMS

Thanks to a generous grant from the Office of the Chancellor’s Pitt Seed Initiative, the Center for Russian, East European, and Eurasian Studies (REEES) also designed two credit-bearing study away programs in collaboration with Pitt’s Global Experiences Office. Originally planned for launch in March-June 2020, these programs were created to add a comparative dimension to the courses in the Water in Central Eurasia cycle. Postponed to summer 2022 due to the COVID-19 pandemic, these courses will invite students to explore the global and domestic dimensions of water sustainability in two strategically selected locations: Washington, D.C. and the Pine Ridge Reservation, South Dakota. The 1-credit program will entail field visits to policy-oriented think tanks, NGOs, and federal agencies in Washington, D.C. The 3-credit program will provide opportunities for fair-trade service learning on the Pine Ridge Reservation thanks to the Pittsburgh-based nonprofit organization Amizade. Learning goals and assessment instruments for these study away programs will also be aligned to the UCIS Global Learning and Engagement Rubric.

Comparative Perspectives on Global Water Policy: From the U.S. to Central Eurasia
1 CR | May 2022

This innovative one-week study away program provides the opportunity for undergraduate participants to explore U.S., Central Eurasian, and global perspectives on water management and environmental sustainability. Undergraduates will study competing perspectives on global water policy, explore the role of governmental and non-governmental organizations in managing water equity, and examine the interconnections among policy, law, economics, and culture related to natural resource management. As outcomes for the course, students will develop a portfolio of varied writing samples to use in applications for graduate programs and careers in policy while also creating their network of experts and organizations influential in the shaping of water and environmental policy in the U.S., Central Eurasia, and the world.

Lakota Perspectives on Environmental Sustainability and Indigenous Rights
3 CR | June 2022

On this 2-week, 3-credit program, students have the opportunity to explore how water has shaped indigenous politics, culture, economics, health and spiritual life while working on community-driven service-learning projects on the Pine Ridge Reservation in South Dakota. Projects may be related to environmental sustainability, agricultural initiatives, programming on youth and education, cultural learning and indigenous rights. This program is ideal for students interested in history, politics, environmental studies, and anthropology. Students will complete reflection papers on indigenous peoples’ relationships with their physical environments and the ecosystems that shape their sacred worlds.

The Lakota project has managed to leverage local Pittsburgh grant opportunities. Through its Global Social Action Accelerator, Amizade will offer Pitt alums of the Water in Central Eurasia cycle and study away programs access to seed funding for future projects. Recipients will build on their new global learning and engagement skills as well as their networks by developing social action projects designed to address a need in their home community. Small grants of up to $1,000, project management training, and mentorship will provide recipients with opportunities to transform new skills into social action and work for long-term impact in the communities where these ideas are implemented.
Enrolling 153 students over the course of five semesters in Spring 2019 through Spring 2021, the Water in Central Eurasia cycle brought together a diverse student body from four academic levels in eight schools. Academic areas included business, the health sciences, the humanities, social sciences, STEM, global and regional studies, and other interdisciplinary programs. Students represented 53 majors, minors, certificates and micro-credentials (Figure 2.). The distribution of enrollments by school in the Past, Present, and Future courses is shown in Figures 3-5.

Figure 1. Academic Profile of Enrolled Students

<table>
<thead>
<tr>
<th>Enrollments</th>
<th>By Academic Level</th>
<th>By Academic Areas</th>
<th>By School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Students 153</td>
<td>Freshman 8%</td>
<td>Business 15.79%</td>
<td>Arts &amp; Sciences 65.27%</td>
</tr>
<tr>
<td>Total Class Capacity 192</td>
<td>Sophomore 22%</td>
<td>Health Sciences 9.12%</td>
<td>Business Administration 19.09%</td>
</tr>
<tr>
<td>Enrollment Percentage ≈80%</td>
<td>Junior 27%</td>
<td>Humanities 15.79%</td>
<td>Computing &amp; Information Science 1.74%</td>
</tr>
<tr>
<td></td>
<td>Senior 43%</td>
<td>Social Sciences 21.05%</td>
<td>Education 0.35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEM 7.72%</td>
<td>Engineering 1.05%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Global and Regional Studies 7.63%</td>
<td>General Studies 1.74%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other Interdisciplinary Programs 9.72%</td>
<td>Honors 2.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undeclared 12.84%</td>
<td>International Studies 8.01%</td>
</tr>
</tbody>
</table>
Figure 2. Spring 2019-Spring 2021 Enrollments by Most Common Academic Plans

- Undeclared: 37
- Political Science: 27
- History: 19
- Economics: 15
- Chemistry: 12
- Russian, East European, and Eurasian Studies: 11
- Global Studies: 9
- Communication: 8
- Finance: 8
- Marketing: 8
- Business Information Systems: 7
- Business Analytics: 6
- Supply Chain Management: 6
- Computer Science: 5
- Environmental Studies: 5
- Neuroscience: 5
- Urban Studies: 5
Figure 3. Enrollments by School in Central Eurasia Water Past

SPRING 2019 AND FALL 2020

- 78 ARTS & SCIENCES
- 3 BUSINESS ADMINISTRATION
- 2 COMPUTING AND INFORMATION SCIENCE
- 3 GENERAL STUDIES
- 3 ENGINEERING
- 10 INTERNATIONAL STUDIES

FALL 2020 AND SPRING 2021

- 97 ARTS & SCIENCES
- 1 BUSINESS ADMINISTRATION
- 2 COMPUTING AND INFORMATION SCIENCE
- 2 GENERAL STUDIES
- 1 EDUCATION
- 2 HONORS
- 13 INTERNATIONAL STUDIES

Figure 4. Enrollments by School in Central Eurasia Water Present

Figure 5. Enrollments by School in Central Eurasia Water Future

SPRING 2020 AND SPRING 2021

- 13 ARTS & SCIENCES
- 51 BUSINESS ADMINISTRATION
- 1 COMPUTING AND INFORMATION SCIENCE
- 1 HONORS
As units of Pitt’s University Center for International Studies (UCIS), REEES and ASC developed outcomes for the Water in Central Eurasia courses based on the 2017 UCIS Global Learning and Engagement Rubric. This step connected interdisciplinary content with humanistic habits of mind and to provide an adequate structure for the assessment of student learning. Correspondingly, learning outcomes for this initiative prioritized knowledge in global and regional studies, understanding of interdisciplinary connections, communication and collaboration skills, and awareness of diverse perspectives (Appendix A.). To record self-assessed growth in competencies relevant for this project, students completed entry and exit surveys in all Past, Present, and Future courses (Appendix B.). Pitt’s Center for Teaching and Learning additionally conducted mid-term focus group evaluations on each course to independently gauge student learning through qualitative measures (Appendix C.). To incentivize student participation in the assessment procedures, the project team guaranteed subjects’ anonymity throughout the evaluation process, ensured that participants received extra credit toward their final grade, and offered students the opportunity to further explore Central Eurasia by enjoying Uzbek cuisine from a local restaurant.

SURVEYS

Among the 153 students enrolled in the Water in Central Eurasia courses offered in Spring 2019 through Spring 2021, the response rate to entry surveys was 72 percent (n=110 participants). Exit surveys registered responses at 68 percent (n=104 participants). Results showed that curricular integration with the humanities has the potential to yield positive educational outcomes overall. Students self-reported increased proficiency in most competency areas measured by the project and course learning rubrics.

Global and Regional Expertise

Figure 6. I feel knowledgeable about international affairs (history, current events, and culture) in relation to Central Eurasia.

<table>
<thead>
<tr>
<th></th>
<th>Entry Survey</th>
<th>Exit Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>0%</td>
<td>8%</td>
</tr>
<tr>
<td>Neither Agree</td>
<td>3%</td>
<td>22%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>58%</td>
<td>37%</td>
</tr>
<tr>
<td>Nor Agree</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Neither Disagree</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>58%</td>
<td>37%</td>
</tr>
<tr>
<td>Nor Disagree</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Neither Agree</td>
<td>3%</td>
<td>2%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0%</td>
<td>8%</td>
</tr>
</tbody>
</table>

Figure 7. I feel knowledgeable about issues related to water management in my home region and the world.

<table>
<thead>
<tr>
<th></th>
<th>Entry Survey</th>
<th>Exit Survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Neither Agree</td>
<td>6%</td>
<td>10%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>62%</td>
<td>36%</td>
</tr>
<tr>
<td>Nor Agree</td>
<td>19%</td>
<td>15%</td>
</tr>
<tr>
<td>Neither Disagree</td>
<td>13%</td>
<td>18%</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>62%</td>
<td>36%</td>
</tr>
<tr>
<td>Nor Disagree</td>
<td>31%</td>
<td>6%</td>
</tr>
<tr>
<td>Neither Agree</td>
<td>19%</td>
<td>15%</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Page 14
In the category of awareness of diverse perspectives, students completing the exit surveys reported less confidence in their ability to comfortably interact with people of different cultural backgrounds. However, focus group assessments confirmed that, rather than reflecting a negative learning outcome, reporting lower proficiency levels in awareness of diverse perspectives can be correlated with students’ increased recognition of their knowledge gaps.

Diverse Perspectives
To compare survey data with qualitative measures, Pitt’s University Center for Teaching and Learning invited all students enrolled in the Past, Present, and Future courses to participate in mid-term focus group evaluations. Administered independently by UCTL, the six focus group assessments gathered feedback from 70 percent of students (n=107). The questions asked participants to self-evaluate in three key areas critical to the project team: a) path to enrollment; b) the course experience; and c) the long-term impact on plans for study, career, and education for global citizenship.

FLEXIBLE PATHWAYS, THEMES OF IMPACT

When asked about the reasons leading to their enrollment in the Water in Central Eurasia courses, undergraduate students appreciated the lack of pre-requisites and confirmed that the flexibility to fulfill multiple requirements for majors, minors, certificates, and general education was a primary factor in their decision-making. Highly influential were faculty who nourished students’ interest in global water issues, the history of Russia and Central Eurasia, and other related subjects through previous coursework. Some subjects also cited their interest in environmental issues, the strong endorsement of degree advisors, recommendations from undergraduate peers, and the impact of peer-to-peer engagement by Undergraduate Student Ambassador Clara Weibel.

Most significantly, the core theme of the cluster elicited an overwhelmingly positive response from students. Addressing water sustainability as an issue of global urgency while exploring an unfamiliar region was “very creative,” “pretty eye-opening,” and “helpful.” Numerous respondents disclosed having very limited to no familiarity with the history, politics, and societies of Central Eurasia. Students found this knowledge gap “poignant” and attributed it to a range of factors, including the influence of ethnocentrism in K-12 social studies education, the persistence of hegemonic narratives in undergraduate instruction, media bias, and the general lack of public knowledge on Central Eurasia. Building a preliminary understanding of this region while examining how water defines the spatiality and nature of human activities whether in culture, political relations, economic life, or technology lent a “very unique” and “innovative” feature to the course cluster, which respondents found exceptionally stimulating. As one student remarked, “Water is at the heart of everything.” Another added: “I’ve never had a class like this before. Cool!”

THE COURSE EXPERIENCE

Mid-term focus group assessments invited students to reflect more in-depth on their in-course experience. Multiple respondents reported making productive connections with previous and current coursework. Several students expressed a growing interest in taking more regional and global studies courses that explored real-world issues in different cultural contexts. Integrating multiple disciplinary perspectives, the Water in Central Eurasia courses also presented students with the challenge of understanding the different epistemological considerations of participating disciplines while encouraging them to explore the rich tension between fields.

For some students, focusing on the engineering of dams and their impact on society made the Present course “off-focus”; for another student, by contrast, this emphasis on large-scale state-sponsored infrastructure projects, the “mechanics of how they worked,” and the political-economic reasons behind their failure lent a helpful contrast to successful projects most emphasized in political science courses. Reflecting on the Future course, one respondent also noted “I feel like it’s being forced to be a history class. I think it would be more beneficial if they would focus less on learning about Central Eurasia and more on applying strategic management concepts to the region. Maybe we’ve only just done the fundamentals and are moving onto that next.”
Despite these challenges, multiple students emphasized that the design of assignments combined with the academic diversity of the student body facilitated their engagement with diverse disciplinary and cultural perspectives. Privileging group discussions of primary sources written by a variety of Western and Central Eurasian authors, the Past course exposed students to various narratives about the interaction between local society and water resources. It also enabled them to engage with a wide range of interpretations provided by peers in multiple majors. In the Present course, individual research projects invited students to explore the politics of water in other world regions from an interdisciplinary perspective. As one respondent noted, “I liked when we would focus on specific case studies from around the world and compare that information to what we had learned about Central Eurasia. We were able to synthesize that information and draw meaningful comparisons.” Combining guest lectures with short research assignments enabled students in the Future course to build up knowledge on water scarcity in Central Eurasia from historical, political, and environmental science perspectives before modeling sustainable strategic management solutions in final group projects. Echoing other students, one respondent stressed the uniqueness of the Future course and noted “I’d like to see more business courses like this, quite frankly.” “If you are making business decisions,” a second student added, “understanding the people,” “what the area needs,” and “the cultural context in certain countries” is important. As a third student remarked, examining this area of the world “helps us actually solve issues that we face back here in the United States and, even locally, in my area as well.”

EDUCATING FOR GLOBAL CITIZENSHIP

Enrollment in the Past, Present, and Future courses had a varied impact on students’ long-terms plans for graduate study and career. Most respondents prioritized completing their degree requirements and had no plans of altering their chosen academic or professional pathways. Yet, students overwhelmingly valued discovering Central Eurasia as a focal point of world history and a center for contemporary geopolitics and the global economy. Echoing others, one respondent stated that the learning experience provided them with the opportunity to reduce their “abject ignorance” of an entire world area. Another student added, “It has opened my eyes to what the economy, what politics is going to be like in the future, how I am going to be affected as a citizen.”

While academic and career choices were less affected, the Water in Central Eurasia cluster did enable a distinct group of students to refine their approach to future studies and careers. An aspiring social studies teacher reported being inspired to design a graduate plan of study and a teaching philosophy that prioritized world regions and global issues typically marginalized in secondary education. A student of environmental science minoring in political science wished to incorporate how water and the environment determine the way societies form and function into his future policy work. Interested in a career in environmental toxicology or ecological conservation, another student recognized multiple disciplinary perspectives as “very helpful” for optimizing communication and partnerships among scientists, policy makers, and the general public. Yet another respondent highlighted the value of incorporating cross-cultural understanding and environmental considerations in the development of sustainable products and services.

When asked about whether the Past, Present, and Future courses impacted their education for global citizenship on the long term, students answered resoundingly in the affirmative. In the category of global and regional studies knowledge, a group of respondents highlighted their increased ability to interrogate Western-centric narratives that analyze Central Eurasia and other world regions as footnotes to great power rivalries while erasing the agency of local communities in history and today’s global era. Displaying enhanced skills in understanding interdisciplinary connections, other subjects found it “enriching” to learn about the complex interplay between water and human activity; some felt encouraged to adopt a comparative perspective when reflecting on the challenges to water management in the U.S.; and a few examined the sustainability of personal water consumption practices. Several students valued acquiring enhanced skills in collaboration and communication because of engaging with peers from a broad range of disciplines in common assignments. Informed by diverse perspectives, subjects demonstrated increased competencies when examining water management from different regional contexts and disciplinary lenses. One student pointed out how high-volume resource extraction by dominant countries and corporations enhanced global inequality and environmental challenges, crucially relating to water. Reflecting on desertification in Central Eurasia in water-rich Pittsburgh, one student remarked “[The course] made me definitely think about how I use water and how efficiently I use it.” Another respondent added, “[The course] just makes you think about how stark the differences are and how much we take water for granted…like having it in a bottle readily available all the time.”
UCIS POSTDOCTORAL FELLOWSHIPS

The project contributed to the retention of experts in critical fields of Central Eurasian studies and resource conservation, by offering unique opportunities for curriculum design and interdisciplinary collaboration. With a Dual Ph.D. in Central Eurasian and Religious Studies from Indiana University-Bloomington, Dr. Aziza Shanazarova joined the project team in 2019-2021 to provide insights on the human-water relationship from the perspective of gender history and the study of female religiosity. Dr. Shanazarova also taught the course “Central Eurasian Water Past” in Fall 2020. She will begin her tenure as Assistant Professor in the Department of Religion at Columbia University starting Fall 2021. With a Ph.D. in Anthropology from Washington University-St. Louis, Dr. Bullion joined the project team in 2019-2021 and contributed expertise on mortuary practices, medieval urbanism, and early Islam, enabling the project team to incorporate archaeological perspectives into the “Water in Central Eurasia” curriculum. Dr. Bullion will begin her tenure as an archaeologist at the National Resource Conservation Service in Central Oregon. Key project personnel anticipated these impacts based on the benefits that the project already provided to former UCIS Postdoctoral Fellows. By designing and teaching the course “Central Eurasian Water Past” in Spring 2019, Dr. Patryk Reid expanded his teaching portfolio in environmental history and published a review article on recent publications on riparian histories of Russian and Soviet Eurasia in the leading scholarly journal *Kritika: Explorations in Russian and Eurasian History*. Participation in the project also enabled Dr. Colin Johnson’s to develop the course “Central Eurasian Water Present,” providing him with access to environmental humanities research and teaching and contributing to his hire in the position of Assistant Professor of Political Science at Idaho State University.

INTERDISCIPLINARY TEACHING

In addition to impacting postdoctoral fellowships, a core objective of this project was to provide professional development opportunities in interdisciplinary syllabus design and teaching to three key faculty members: Dr. Vasili Rukhadze (Political Science), Dr. John Camillus (Strategic Management), and Dr. David Sanchez (Civil and Environmental Engineering).

Having joined the project team in Spring 2019, Dr. Vasili Rukhadze contributed his research background on energy politics in Central Eurasia and his extensive teaching experience in comparative politics and international relations with area focus on the former Soviet Union and post-communist Eastern and Central Europe. Teaching “Central Eurasian Water Past” through the Department of Political Science in Fall 2019 and Spring 2021 enabled Dr. Rukhadze to put the question of water management and security in a wider geopolitical perspective, demonstrating to students that a region’s resource problems are always closely interlinked with another region’s international and domestic political realities. The course also reinforced multidisciplinary perspectives as key to designing syllabi on the politics of natural resources, indicating that such curricula need to incorporate history, economy, culture, and linguistics to fully facilitate student learning on the subject.

Reflecting on the professional development experience the project provided, Dr. John Camillus commented as follows: “Designing the Future course in consultation with faculty from history, political science and engineering was an unusual and impactful experience in knowledge development. Without the deep structural knowledge of history, culture and current political realities offered by faculty from these disciplines, it would not have been possible to carry out a realistic and meaningful strategic analysis to arrive at credible and insightful recommendations that can address the complex and fraught transboundary water issues in Central Eurasia.” The analytical frameworks derived from Gramscian concepts and from understanding the exercise of “smart power” further enriched Dr. Camillus’s research and teaching in the arena of strategic management in contexts of great complexity and extreme uncertainty.

Participation in the development of the Future course provided Dr. Sanchez his first-time opportunity to explore, with business students, potential sustainable engineering approaches to water resource management in Central Eurasia. Leading up to the course, Dr. Sanchez appreciated collaborating on the interdisciplinary review of syllabi and the design of project and course learning outcomes. As he remarked, such place-based interdisciplinary perspectives lend themselves to sustainable engineering because much of sustainable design is driven by context, particularly culture and geography. In this sense, Dr. Sanchez commented, the *Water in Central Eurasia* project captures in its interdisciplinarity many of the multi-faceted tensions that arise around water sustainability in various world regions.
The project enabled the development of a dedicated website that shares the project’s intellectual rationale, lists key project personnel, describes courses and experiential learning components, and provides a list of internships, jobs, research opportunities, and grants to help students connect learning to training and career opportunities (Figure 13). Since its launch in September 2018, the website has been accessed by over 1,300 distinct visitors over 2,200 times.

The project website also provides access to the Water in Central Eurasia LibGuide that was developed by University of Pittsburgh research librarians Daniel Pennell and Haihui Zhang. The LibGuide (Figure 14) was updated in lockstep with curriculum development, student feedback, and conversations among key project personnel. Beyond serving students enrolled in the Water in Central Eurasia sequence, this LibGuide enabled postsecondary educators and students worldwide to access high-quality research tools and publications that emanate from the humanities, social sciences, business, and engineering and explore water issues in the region. The LibGuide has been visited over 1,000 times since its launch in January 2019.
Welcome

Why Study Water in Central Eurasia?

Water in Central Eurasia is an interdisciplinary cycle of undergraduate courses and hands-on experimental activities funded by the National Endowment for the Humanities. We invite Pitt students from engineering, social sciences, and the humanities to engage with the past and diverse water regions of Central Eurasia. The thematic concentration on water introduces students to the contemporary significance of this topic and cultivates scholarly inquiry while providing an excellent lens into a rapidly changing world region that has been a focal point of world history and is at the center of twenty-first century geopolitics and global economy.

The Water in Central Eurasia courses are constructed along mutually supporting trajectories, encouraging students to think about water issues on new terrain and to explore a pivotal area of the world, while addressing how they know to be of global urgency—the need for clean, sustainable water sources.

Central Eurasia—A Lifetime of Fascinating Questions

James Pickard
Assistant Professor, Department of History

My journey into Central Eurasia began with a basic question: What happens when an Islamic society is Sovietized? Almost overnight, centuries-old mosques were transformed into museums of atheism and stables for livestock. Ultimately, Central Eurasia lives up to its reputation as the crossroads of civilizations: untangling these threads is precisely the fun of it, and what drew me into the field.

Saar’s Russia Blog: Central Eurasia

Did you know . . . ?

The Eurasian Steppe, which dominates much of Central Eurasia, spans approximately 5,691 miles or 8,000 kilometers from Eastern Europe to East Asia. (Photo: Tugan Baijue, WaterIndia.com)
Water in Central Eurasia @ Pitt: Introduction

A guide for research on water resources in Central Eurasia from Russia to China to the "Stans"

General Reference Works on Central Eurasia

- The following resources will provide more background on the region:
  - - 2006
  - - 2008
  - - 2014

General Sources on Water in the United States

  - This article summarizes U.S. water laws and related treaties. It also discusses the key concepts including federal-state relationships, water rights, and development of regulatory agencies.
  - **Library** (Columbia University Libraries, Hoover Institution Library)

Head, East Asian Library/Chinese Studies Librarian

- Melhu Zhang

Curator for Slavic, European, and Eurasian Studies

- Dan Prestel

Contact

- University of Pittsburgh Libraries, East Asian Library
  - 3937 Forbes Avenue
  - Pittsburgh, PA 15260
  - (412) 648-7777

Subjects

- Eurasian languages & literatures, Russian, East European & Eurasian Studies, Chinese Literature & Languages, West European & Eurasian Studies
In 2018-2021, the project team shared preliminary project outcomes among key stakeholders to encourage research and teaching on water sustainability in Central Eurasia and to foster interdisciplinary humanities-centered instruction at universities.

Project Director Dr. Nancy Condee and Project Coordinator Dr. Zsuzsánna Magdó shared the initiative’s intellectual rationale and overarching goals with the international scholarly community as part of the article titled “Collaborating across Centers and Disciplines: Pitt’s Central Eurasian Studies Initiative” published in the June 2018 issue of NewsNet, the newsletter of the Association for Slavic, East European, and Eurasian Studies. To share the new “Water in Central Eurasia” course sequence with Pitt faculty and students in the humanities, social sciences, business, and engineering, REEES worked with University Communications to publish an announcement in August 2018 through the University’s main news outlet, PittWire.

UCIS Postdoctoral Fellow Dr. Patryk Reid also shared about our project with the growing current of scholars studying human-water relationships in Central Eurasia through a report on the Spring 2018 symposium “Modern Rivers of Eurasia” held at Pitt. The report was published in August 2018 on the blog of the Central Eurasian Studies Society.

In January 2019, Project Director Dr. Nancy Condee presented on the project as part of a session on personalized education at the University of Pittsburgh’s Spring 2019 Assessment Conference. The audience comprised faculty and staff from a broad range of disciplinary and administrative units from all Pitt campuses, including colleagues interested in coordinating the Global Plan for Pitt with opportunities offered by Water in Central Eurasia initiative.

Undergraduate Student Ambassador Clara Weibel presented the goals and initial outcomes of the project in a poster session at the Annual Conference of the Association for the Advancement of Sustainability in Higher Education, held in October 2019 in Spokane, WA.

Project Co-Director Dr. Ruth Mostern was invited to present the project at the Annual Meeting of the National Humanities Alliance held in March 2020 in Washington, DC. As part of a workshop series on recruiting undergraduates to the humanities, Dr. Mostern shared the project team’s experience with introducing interdisciplinary curricular innovations at Pitt, obstacles and solutions to enhancing recruitment, and challenges encountered in cultivating humanities-centered interdisciplinary skills.

At the request of the National Humanities Alliance, Project Directors Drs. Nancy Condee and Ruth Mostern worked with Project Coordinator Dr. Zsuzsánna Magdó to author a preliminary report on the impact and outcomes of the project in September 2020. As a result of this report, the initiative was singled out for modeling a new approach to humanities education in NHA’s 2021 publication titled Strategies for Recruiting Students to the Humanities: A Comprehensive Resource.
Disciplinary fields are indispensable and fundamentally productive features of contemporary research and teaching. With this perspective in mind, the purpose of Pitt’s initiative Water in Central Eurasia was to explore the extraordinary potential that the integration of the humanities with other disciplines brings to students’ educational and career outcomes. As our project assessment revealed, students across all courses and a variety of different disciplinary backgrounds consistently expressed a strong appreciation for the goals, interdisciplinary approach, and pedagogical methods used in this project. Many considered that the Past, Present, and Future courses were unique in their university career and found them to be a worthwhile experience for both their academic and professional futures. This effort also revealed three challenges common to initiatives aiming to facilitate interdisciplinary integration in undergraduate education:

- To encourage interdisciplinary innovation in research and teaching, practices related to the training, promotion, and tenure of scholars need to meet flexible budgetary and administrative structures to support engagement among schools and disciplinary fields.

- While students are often interested in exploring integrated curricula to enhance their potential for personal, academic, and professional growth, rigid degree requirements along disciplinary lines de-incentivize the pursuit of sustained educational pathways beyond the students’ primary school of affiliation.

- Integrated curricula struggle with how to effectively raise student awareness about the different epistemological considerations that underpin the participating disciplines as well as with teaching students how to think productively about a real-world issue while exploring the rich tension among a variety of fields.

These findings indicate that institutional models for organizing fields of knowledge can significantly constrain scholarly practices, pedagogical approaches, and resulting curricula that pursue a broader integration for the humanities on campus. Yet, these challenges also reveal opportunities. The inclusion of interdisciplinary scholarship and teaching among the acceptable criteria for scholarly training and promotion, the relaxation of budgetary and administrative barriers to integration, and continued institutionalization of interdisciplinary curricular pathways are avenues that promise unique opportunities for demonstrating the value of studying the humanities to a broader audience of students, parents, faculty, and staff.
## APPENDIX A: PROJECT AND COURSE GLOBAL LEARNING & ENGAGEMENT OUTCOMES

### I. Water in Central Eurasia: Project Learning & Engagement Outcomes

<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
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<tbody>
<tr>
<td><strong>Global and/or Regional Expertise</strong></td>
<td>Demonstrate a basic understanding of the historical context and contemporary politics related to Central Eurasia through exams and presentations.</td>
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<td>Identify the importance of water resource management in the context of Central Eurasia’s natural and built environment and its political-economic future.</td>
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<tr>
<td><strong>Interdisciplinary Connections</strong></td>
<td>Compare and contrast different disciplinary approaches to the study of environmental and ecological questions in Central Eurasia by completing book reviews.</td>
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<td>Describe real world challenges to Central Eurasia’s water management using interdisciplinary methods introduced through lectures, readings, and research assignments.</td>
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<tr>
<th>SKILLS</th>
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<tbody>
<tr>
<td><strong>Collaboration &amp; Communication</strong></td>
<td>Participate in collaborative work with students from different disciplines to complete group research and other project-based assignments while exploring issues of water resource management in Central Eurasia.</td>
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<td>Apply communication skills to explore how students from different disciplines understand and examine water sustainability in their majors.</td>
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<thead>
<tr>
<th>AWARENESS &amp; ENGAGEMENT</th>
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<tbody>
<tr>
<td><strong>Diverse Perspectives</strong></td>
<td>Reflect on how people from Central Eurasia understand and examine water resource management in their region.</td>
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<td>Acknowledge differences and similarities in cultural and political understandings of water resource management in Central Eurasia by completing research projects.</td>
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## II. Central Eurasia Water Past: Course Learning & Engagement Outcomes

### KNOWLEDGE

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<tr>
<th>Global and/or Regional Expertise</th>
<th>Demonstrate an understanding of demographic shifts; the origins and evolution of political and social organizations; and the economic and technological structures that define the region through exams.</th>
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<td>Examine if water translates into ‘power’ in the context of specific historical, cultural, and political settings and explore whether water management has a determinative impact on Central Eurasian society.</td>
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<tr>
<th>Interdisciplinary Connections</th>
<th>Compare and contrast patterns of continuity and change to address questions of causation and to evaluate alternative models of periodization through book reviews.</th>
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<td>Re-organize acquired subject knowledge to draw appropriate conclusions from historical evidence while evaluating that evidence in its context, recognizing its limitations, and assessing the point of view that it reflects.</td>
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### SKILLS

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<tr>
<th>Collaboration &amp; Communication</th>
<th>Participate in class discussion with students from different disciplines in order to evaluate plausible arguments based on available historical evidence.</th>
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<td>Apply communication skills to understand and evaluate diverse interpretations of the past through the analysis of other students’ arguments and frames of reference during class discussions.</td>
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### AWARENESS & ENGAGEMENT

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<thead>
<tr>
<th>Diverse Perspectives</th>
<th>Compare students' understanding of their own cultural and societal structures to the structures in Central Eurasia.</th>
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<td>Acknowledge the various ways that water has influenced the development of societies in Central Eurasia and assess the similarities and differences between historical processes in different chronological and geographical contexts through the completion of research projects.</td>
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### III. Central Eurasia Water Present: Course Learning & Engagement Outcomes

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<th>KNOWLEDGE</th>
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<tr>
<td><strong>Global and/or Regional Expertise</strong></td>
<td><strong>Demonstrate</strong> familiarity with the geographical, technological, and political aspects of major water systems in Central Eurasia as well as the shifting political and economic connections in the region through quizzes and exams.</td>
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<tr>
<td><strong>Identify</strong> major “turning points” in water engineering and management in the region along with the ramifications of these “turning points” in the context of the region’s development.</td>
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<tr>
<td><strong>Interdisciplinary Connections</strong></td>
<td><strong>Discuss</strong> theoretical and methodological approaches to analyze engineering, social, political, and economic processes that shape water resource management through research assignments.</td>
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<tr>
<td><strong>Compare</strong> and contrast acquired subject knowledge to gain a humanistic awareness of the social realities and technical horizons that emerged in contemporary Central Eurasia as the relationship between humans and their environment evolved with advancements in engineering.</td>
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<th>SKILLS</th>
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<tbody>
<tr>
<td><strong>Collaboration &amp; Communication</strong></td>
<td><strong>Participate</strong> in class discussions that explore conceptual approaches to societal development, identify regional strategies and processes, and evaluate subsequent outcomes.</td>
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<td><strong>Apply</strong> communication skills to coordinate and complete group research projects.</td>
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<th>AWARENESS &amp; ENGAGEMENT</th>
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<tr>
<td><strong>Diverse Perspectives</strong></td>
<td><strong>Expand</strong> understandings of development and social transformation to analyze information regarding experiences and environments beyond students’ immediate familiarity.</td>
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<tr>
<td><strong>Evaluate</strong> the impact water management policies can have on local and regional environments through research projects.</td>
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IV. Central Eurasia Water Future: Course Learning & Engagement Outcomes

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<th>KNOWLEDGE</th>
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<tr>
<td><strong>Global and/or Regional Expertise</strong></td>
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<tr>
<td>Demonstrate an understanding of economic and engineering approaches to water resource management, including property rights and valuing methods, through exams and quizzes.</td>
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<tr>
<td>Identify current rules and laws that govern Central Eurasia; understand geopolitical conflicts in the region; and learn about critical debates on the alternate uses and management of water resources in the region.</td>
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<tr>
<td><strong>Interdisciplinary Connections</strong></td>
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<tr>
<td>Analyze acquired subject knowledge to evaluate the alternative management and pricing of water as well as scenarios of development related to water use and their potential impact on society.</td>
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<td>Discuss possible policy challenges to approach real-world problems relating to water management in Central Eurasia through class discussions.</td>
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<tr>
<th>SKILLS</th>
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<tbody>
<tr>
<td><strong>Collaboration &amp; Communication</strong></td>
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<tr>
<td>Understand the perspectives of students and researchers from Central Eurasia.</td>
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<td>Apply knowledge and communication skills acquired through coursework to understand other students’ analyses and to evaluate possible solutions for anticipated challenges to water management.</td>
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<th>AWARENESS &amp; ENGAGEMENT</th>
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<tr>
<td><strong>Diverse Perspectives</strong></td>
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<tr>
<td>Develop new perspectives on water management in their own countries and other world regions by adopting a deeper understanding of economic and engineering approaches to water sustainability.</td>
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<tr>
<td>Acknowledge complications arising from water conflicts in Central Eurasia and monitor continuing efforts to achieve sustainable water management in the region through research assignments.</td>
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APPENDIX B: SURVEY QUESTIONS

Below is the full-text transcription of the entry and exit surveys administered to students enrolled in each course at the beginning and at the end of the term each course was offered. The questions invited students to self-assess their proficiency based on the *Water in Central Eurasia* project and course learning outcomes. Surveys were disseminated with Qualtrics and responses were collected anonymously. After completing the survey, students could claim extra credit towards their course grade by submitting their name and email address through a separate link.

1. I feel comfortable interacting with people whose beliefs, values, and worldviews differ from my own.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

2. I feel knowledgeable about international affairs (history, current events, culture/society, etc.) in relation to Central Eurasia.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

3. I feel knowledgeable about issues around water management in my home region and around the world.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

4. I am able to engage in discussions and debates about issues related to Central Eurasia.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

5. I am able to engage in discussions and debates about issues related to water management.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree
APPENDIX B: SURVEY QUESTIONS (continued)

6. I know how to find information from multiple sources and perspectives about issues related to Central Eurasia.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

7. I know how to find information from multiple sources and perspectives about issues related to water management.
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

8. How did you find out about this course? Please elaborate if your choice is “Other.”
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree

9. Are you interested in enrolling into other Water in Central Eurasia courses? For more information, see waterincentraleurasia.pitt.edu
   - Strongly disagree
   - Disagree
   - Neither agree nor disagree
   - Agree
   - Strongly Agree
APPENDIX C: MID-TERM FOCUS GROUP QUESTIONS

To complement the quantitative data gathered through entry and exit surveys, the project team collaborated with consultants from the University Center for Teaching and Learning (UCTL) to design mid-term focus group assessments. The transcript below lists questions aligned to the project and course learning outcomes. These questions were administered mid-term in every course by UCTL consultants to ensure independent assessment and student anonymity.

Part 1: Rationale for Enrollment

1. Why did you decide to enroll in this Central Eurasia Water course?
2. Can you talk about one or two parts of the course that impacted your worldview the most?

Part 2: General Impact

3. How well do you feel you know and understand the area of the world you studied?
   a. How comfortable are you engaging in discussions and debates about issues relating to the course?
   b. In what ways (if any) has your world view changed from when you started the course?

4. How has the course helped you discover and inform your international studies interests?
   a. Did you find there were connections between the course and different departments or courses?
   b. Can you speak/write of what you’ve learned in the program from multiple disciplinary perspectives?
   c. Do you think this knowledge and understanding will be useful in your plans for future research, study, and/or career? If so, in what ways?

5. Describe an occasion in the course when you worked on a team to understand/address a global issue.

6. In your experience, what is the importance of thinking about and being able to discuss an issue from different cultural perspectives?
   a. Can you tell us about a time during the course when you felt you really got to look at an issue from a different perspective?

7. Has the course encouraged you to think about your role as a global citizen? If so, how?
APPENDIX C: MID-TERM FOCUS GROUP QUESTIONS (continued)

Part 3: Nature of Experiences

8. How do you usually learn about internationally focused subjects at Pitt?

9. Have you taken other courses that combined critical problems with cultural context?

10. Did the multidisciplinary approach of the course influence your decision to enroll?

11. What aspect of the course has been most valuable so far? Least valuable?

12. Please take a moment to consider your overall experience with the course. Do you have any comments or suggestions on how we can improve the experience or make it more useful?

Part 4: Long-term Impact

13. Has your participation in this course impacted your future plans for study?

14. Has the course had any impact on your career plans?

15. Do you feel this course contributes to helping students to become globally minded citizens?

16. Do you feel that this course fosters global competency and international expertise? Why or why not?

17. What has been the most challenging part of the course? What other challenges have you found?

18. What has been the most enriching experience in the course so far? Why did you find that experience to be fulfilling?

19. Would you recommend this class to your peers?

Part 5: Closing

20. Is there anything else that we have not covered today that you would like to share with us about your experiences with the Central Asia Water course?