Institute for Politics and Strategy

Mark S. Kamlet, Interim Director, University Professor of Economics and Policy, and Provost Emeritus
Location: Posner Hall 385A
www.cmu.edu/ips (http://www.cmu.edu/ips/)

Founded in 2015, the Institute for Politics and Strategy (https://www.cmu.edu/ips/) is a university-wide institute for research and undergraduate and graduate education in the fields of political science, international relations, national security, and grand strategy. IPS is dedicated to the study of politics through the discipline of political science with support from other social sciences. In this way, IPS carries on a respected tradition of interdisciplinary political science at Carnegie Mellon University (CMU). IPS also builds upon the university’s rich heritage of applying basic science to issues of public policy.

Basic science is the foundation for the public policy activities of IPS. Analytical social science and interdisciplinary research and teaching are used to better understand, explain, anticipate, and solve public policy problems.

The CMU traditions of analytical political science and applied social science are reflected in the degree programs and entities that IPS supports and oversees. The academic programs included in the Institute for Politics and Strategy are:

• BS International Relations and Politics Major (primary and additional);
• Economics and Politics (primary and additional);
• International Relations and Politics Minor;
• Cybersecurity and International Conflict Minor;
• Politics and Public Policy Minor;
• MS International Relations and Politics (traditional and accelerated); and
• Master of Information Technology Strategy.

The International Relations and Politics (IRP) major delves deeply into international relations and domestic politics from the the discipline of political science. The International Relations and Politics (IRP) major (https://www.cmu.edu/ips/undergraduate%20degrees/undergraduate-majors/irp-major.html) analyzes the role of politics at the national, regional, international, and transnational levels; examines political and institutional arrangements within and among these levels; and investigates the grand strategy of nation-states. The IRP major preserves and expands CMU’s tradition in political science, while at the same time, taps into and contributes to CMU’s strengths in other social sciences that combine analytical and empirical methods. IRP includes an innovative initiative to incorporate decision science in political science. Thus, students learn to apply the burgeoning science of judgment and decision making to understanding political actors’ strategies and foibles, the strengths and weaknesses of formal methods of policy analysis (i.e., cost, risk, benefit, analysis), and the factors shaping public responses to politics and policy. IRP provides a rich set of courses and programmatic offerings that have made it an attractive course of study for students from all of CMU’s colleges.

The Economics and Politics major is offered jointly between the Undergraduate Economics Program (UEP) and IPS. Students are equal members of both academic units and receive advising from both units. The major will develop the political context and underpinnings of economic policy making. It will explore how political institutions resolve the tradeoffs and disagreements associated with policymaking and how they can facilitate or impede desirable economic outcomes. The major will appeal to any student interested in the design, evaluation, and political implementation of policy.

The IRP minor shares core courses with the IRP major. The minor in Politics and Public Policy has a greater focus on domestic politics and public policy than either the IRP major or minor and requires students to participate in the Carnegie Mellon University Washington Semester Program (https://www.cmu.edu/ips/semiwsp/). The minor in Cybersecurity and International Conflict analyzes the role of cyber warfare and cybersecurity in international politics – past, present, and future.

The Master of Science in International Relations and Politics (MS IRP) (https://www.cmu.edu/ips/graduatedegrees/) serves four academic and professional goals:

• To allow students to specialize in one of four conventional areas of political science: international security, international relations, American politics, and comparative politics.
• To equip students with strong methodological skills.
• To guide students in the production of a significant and publishable thesis.
• To prepare students to enter the job market, whether their interests are in academia or the professional world. Students are guided through the internship and job application process by our faculty and staff on campus and Washington, DC.

In addition to a traditional two-year program, IPS offers an accelerated version of the MS IRP (MS IRP-AMP) for current Carnegie Mellon University undergraduate students. Students in the MS IRP-AMP graduate coursework in the senior year and complete the master’s degree in their fifth year of study.

The Master of Information Technology Strategy (MITS) (http://www.cmu.edu/its/mits) program provides graduate students with core interdisciplinary competencies in cybersecurity. The master’s program is a joint initiative of the College of Engineering, the Institute for Politics and Strategy, and the School of Computer Science.

The MITS program provides a multidisciplinary education that prepares students to define and conceptualize:

• the emerging environment of threats caused by cyber operations;
• opportunities for enhanced information analysis and exploitation;
• development and management of innovative information technology systems; and
• decision-making challenges associated with the above.

The Institute for Politics and Strategy sponsors the Carnegie Mellon University Washington Semester Program (CMU/WSP) (http://www.cmu.edu/ips/cmuwsp/), a university-wide semester-long program for undergraduates interested in taking courses and interning in Washington. The minor in Politics and Public Policy may be earned by completing CMU/WSP and taking an additional core course in the Institute for Politics and Strategy.

Bachelor of Science in International Relations and Politics

Mark S. Kamlet, Interim Director, University Professor of Economics and Policy, and Provost Emeritus
kamlet@cmu.edu, Posner Hall 385A
Emily Half, Deputy Director
ehler@andrew.cmu.edu, Posner Hall 391, 412-268-7082

Offered through the Institute for Politics and Strategy (IPS), the Bachelor of Science in International Relations and Politics (IRP) analyzes the role of politics at the national, regional, international, and transnational levels; examines political and institutional arrangements within and among these levels; and investigates the grand strategy of nation-states.

Statesmen, scholars, and policy makers often define grand strategy as the combination of diplomatic, economic, military, and political factors used by leaders to defend their respective nation-states. The IRP major investigates the way in which leaders and citizens construct grand strategy and national security policy more generally; the impact of domestic and international forces on states’ security and economic policies; and the significance of alliances, coalitions, and international institutions for world politics. Although the study of grand strategy and political institutions is the flagship initiative of the major, students are also able to study the effects of culture, economics, and society on the international system through a rich set of elective courses.

Thinking systematically about international and domestic politics is the core objective of the IRP major. To this end, the major has required courses in mathematics and statistics that help to sharpen students’ ability to undertake scientific analysis in the required substantive and historical courses. The major is rooted in the discipline of political science but also utilizes the interdisciplinary strengths of decision science, economics, and political history. Thus, students pursuing this major will use the analytic tools of game theory, economic and statistical analysis, qualitative analysis, rational choice theory, and theories of behavioral decision making as they study alliances, coalitions, institutions, and political strategy.

The name of the major signifies that those studying IRP learn about international and domestic politics from the standpoint of the discipline of political science. Also, the major taps into and contributes to CMU’s strengths in other social sciences that combine analytical and empirical methods. IRP includes an innovative initiative that incorporates decision science in political science. It enables students to apply the burgeoning science of judgment and decision making to understanding political actors’ strategies and foibles, the strengths and weaknesses of formal methods of policy analysis (e.g., cost, risk, benefit, analysis), and the factors shaping public responses to politics and policies.
Recognizing the influence of language and culture on politics, students are required to complete the intermediate (200) level, or its equivalent, in a modern language other than English. Advanced-level study is strongly encouraged.

Open to all Carnegie Mellon undergraduates, the Carnegie Mellon University Washington Semester Program (CMU/WSP) (https://www.cmu.edu/ips/cmuwsp/) allows students to study public policy and intern in Washington for one semester. Courses taken through CMU/WSP will count toward the elective sequence in politics and public policy for IRP majors.

In addition to the primary major in International Relations and Politics, IPS offers an additional major. Minors in International Relations and Politics, Cybersecurity and International Conflict, and Politics and Public Policy are also available. IPS also offers a Bachelor of Science in Economics and Politics jointly with the Undergraduate Economics Program.

Double Counting: Students may double count a maximum of four courses with another major or minor.

Curriculum

Core Courses
Students must complete all of the following core courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>84-104</td>
<td>Decision Processes in American Political Institutions</td>
</tr>
<tr>
<td>84-250</td>
<td>Writing for Political Science and Policy</td>
</tr>
<tr>
<td>84-265</td>
<td>Political Science Research Methods</td>
</tr>
<tr>
<td>84-275</td>
<td>Comparative Politics</td>
</tr>
<tr>
<td>84-326</td>
<td>Theories of International Relations</td>
</tr>
<tr>
<td>84-369</td>
<td>Decision Science for International Relations</td>
</tr>
<tr>
<td>84-450</td>
<td>Policy Forum</td>
</tr>
<tr>
<td>36-202</td>
<td>Methods for Statistics &amp; Data Science</td>
</tr>
<tr>
<td>84-110</td>
<td>Foundations of Political Economy</td>
</tr>
</tbody>
</table>

Mathematics Requirement
Excluded from all double counting rules. Students must complete one of the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>21-120</td>
<td>Differential and Integral Calculus</td>
</tr>
<tr>
<td>or 21-112</td>
<td>Integral Calculus</td>
</tr>
</tbody>
</table>

Language Requirement
Students are required to complete the intermediate (200) level or the equivalent in a modern language other than English. Advanced level study is strongly encouraged. Students who successfully pass a language placement exam on campus, at the intermediate II level or higher, are required to take an advanced language course to satisfy the language requirement.

Electives
International Relations and Politics students will fulfill the elective requirement by pursuing either Option 1 or Option 2 listed below:

Option 1: take 45 units (five courses) from the elective lists below. At least three courses (27 units) must be from the Institute for Politics and Strategy (84-xxx). Most courses listed below are 9-unit courses, but some are fewer. When courses offered for fewer than 9 units are chosen, students should note that a minimum of 45 units is required, and should plan to take one or more additional courses as appropriate.

OR

Option 2: complete the majority of their electives via the Carnegie Mellon University Washington Semester Program (CMU/WSP) politics and public policy elective sequence. Any elective units not fulfilled during CMU/WSP may be completed through coursework from the Institute for Politics and Strategy (84-xxx) elective list.

The Washington Semester Program (CMU/WSP) Politics and Public Policy Sequence includes:
- Policy Seminar (12 units) - This course will count as the Policy Forum (84-450) Core Course Requirement.
- Internship Seminar 84-360 CMU/WSP Internship Seminar (12 units)
- CMU/WSP Elective Seminars (24 units total)

A list of CMU/WSP elective seminars may be found in the Politics and Public Policy elective list below.

Grand Strategy and Political Institutions
- 66-221 Topics of Law: Introduction to Intellectual Property Law

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>79-301</td>
<td>History of Surveillance: From the Plantation to Data Capitalism</td>
</tr>
<tr>
<td>79-302</td>
<td>Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons Systems</td>
</tr>
<tr>
<td>80-135</td>
<td>Introduction to Political Philosophy</td>
</tr>
<tr>
<td>80-321</td>
<td>Causation, Law, and Social Policy</td>
</tr>
<tr>
<td>80-335</td>
<td>Social and Political Philosophy</td>
</tr>
<tr>
<td>84-200</td>
<td>Acceleration: A Global Security War Game in the Age of Pandemic</td>
</tr>
<tr>
<td>84-309</td>
<td>Political Behavior</td>
</tr>
<tr>
<td>84-319</td>
<td>U.S. Foreign Policy and Interventions in World Affairs</td>
</tr>
<tr>
<td>84-320</td>
<td>Global Perspectives on International Affairs</td>
</tr>
<tr>
<td>84-321</td>
<td>Autocrats and Democrats</td>
</tr>
<tr>
<td>84-322</td>
<td>Nonviolent Conflict and Revolution</td>
</tr>
<tr>
<td>84-323</td>
<td>War and Peace in the Contemporary Middle East</td>
</tr>
<tr>
<td>84-324</td>
<td>The Future of Democracy</td>
</tr>
<tr>
<td>84-325</td>
<td>Contemporary American Foreign Policy</td>
</tr>
<tr>
<td>84-327</td>
<td>Repression and Control in Dictatorships</td>
</tr>
<tr>
<td>84-350</td>
<td>America and the World</td>
</tr>
<tr>
<td>84-352</td>
<td>Representation and Redistricting</td>
</tr>
<tr>
<td>84-362</td>
<td>Diplomacy and Statecraft</td>
</tr>
<tr>
<td>84-363</td>
<td>Comparative Legal Systems</td>
</tr>
<tr>
<td>84-364</td>
<td>Comparative Political Behavior: Leadership, Personality, and Decision Making</td>
</tr>
<tr>
<td>84-366</td>
<td>The American Presidency</td>
</tr>
<tr>
<td>84-370</td>
<td>Global Nuclear Politics</td>
</tr>
<tr>
<td>84-372</td>
<td>Space and National Security</td>
</tr>
<tr>
<td>84-373</td>
<td>Emerging Technologies and the Law</td>
</tr>
<tr>
<td>84-380</td>
<td>US Grand Strategy</td>
</tr>
<tr>
<td>84-382</td>
<td>Conflicts in the Middle East: Iran, Iraq, and Proxy Warfare</td>
</tr>
<tr>
<td>84-386</td>
<td>The Privatization of Force</td>
</tr>
<tr>
<td>84-387</td>
<td>Technology and Policy of Cyber War</td>
</tr>
<tr>
<td>84-388</td>
<td>Concepts of War and Cyber War</td>
</tr>
<tr>
<td>84-389</td>
<td>Terrorism and Insurgency</td>
</tr>
<tr>
<td>84-390</td>
<td>Social Media, Technology, and Conflict</td>
</tr>
<tr>
<td>84-393</td>
<td>Legislative Decision Making: US Congress</td>
</tr>
<tr>
<td>84-402</td>
<td>Judicial Politics and Behavior</td>
</tr>
<tr>
<td>84-405</td>
<td>The Future of Warfare</td>
</tr>
<tr>
<td>84-414</td>
<td>International and Subnational Security</td>
</tr>
<tr>
<td>84-421</td>
<td>Advanced Topics in American Politics</td>
</tr>
<tr>
<td>88-281</td>
<td>Topics in Law: 1st Amendment</td>
</tr>
<tr>
<td>88-284</td>
<td>Topics of Law: The Bill of Rights</td>
</tr>
</tbody>
</table>

Economics and Society
- 19-452 EPP Projects II |
- 70-342 Managing Across Cultures |
- 70-365 International Trade and International Law |
- 70-430 International Management |
- 73-103 Principles of Macroeconomics |
- 73-328 Health Economics |
- 73-332 Political Economy |
- 80-136 Social Structure, Public Policy & Ethics |
- 80-244 Environmental Ethics |
- 80-249 AI, Society, and Humanity |
- 80-348 Health, Human Rights, and International Development |
- 80-447 Global Justice |
- 84-308 Political Economy of Latin America |
- 84-310 International Political Economy |
- 84-311 International Development: Theory and Praxis |
- 84-312 Gender and Development in Sub-Saharan Africa |
- 84-313 International Organizations and Law |
- 84-318 Politics of Developing Nations |
- 88-411 Rise of the Asian Economies |

International Cultures
- 76-318 Communicating in the Global Marketplace |
- 76-386 Language & Culture |
be completed in as few as two years of undergraduate study, not that it must be. Students may declare the BS in International Relations and Politics as early as the second semester of the freshman year and should consult frequently with the deputy director (see above) about their course of study. Please note that this is only a sample plan of study and not the only possible plan of study. The IRP major and Dietrich College General Education curricula provide a high degree of flexibility in sequencing and coursework. Double counting between the major and the General Education requirements is unlimited. The plan below shows a very conservative view of double counting.

**Students who participate in the CMU/WSP or study abroad in spring of sophomore year, however, must complete the Policy Seminar while studying in Washington, DC. Students who do not participate in the CMU/WSP will take the Policy Seminar in the spring of the senior year in Pittsburgh.**

### Bachelor of Science in International Relations and Politics

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Sophomore</th>
</tr>
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<tbody>
<tr>
<td><strong>Fall</strong></td>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>26-200 Reasoning with Data</td>
<td>First-Year Writing (FW)</td>
</tr>
<tr>
<td>Grand Challenge Seminar</td>
<td>Disciplinary Perspectives: Humanities</td>
</tr>
<tr>
<td>B4-104 Decision Processes in American Political Institutions</td>
<td>Language Course** Language Course**</td>
</tr>
<tr>
<td>21-120 Differential and Integral Calculus*</td>
<td>84-110 Foundations of Political Economy</td>
</tr>
<tr>
<td>Language Course**</td>
<td>84-275 Comparative Politics</td>
</tr>
</tbody>
</table>

*If required to start with 21-111 in fall of freshman year, complete 21-112 in spring of freshman year.**

**If starting a Modern Language at the Elementary I level, four semesters of language study are required for the IRP major. AP credit or a language placement exam may allow students to begin at CMU in a level higher than Elementary I and have fewer required semesters of language study.

### Junior | Senior

<table>
<thead>
<tr>
<th><strong>Fall</strong></th>
<th><strong>Spring</strong></th>
<th><strong>Fall</strong></th>
<th><strong>Spring</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>84-369 Decision Science for International Relations</td>
<td>CMU/WSP or Study Abroad*</td>
<td>IRP Elective</td>
<td>84-450 Policy Forum**</td>
</tr>
<tr>
<td>Foundations: Contextual Thinking</td>
<td>Explore</td>
<td>IRP Elective</td>
<td>Disciplinary Perspectives: Additional</td>
</tr>
<tr>
<td>Disciplinary Perspectives: Logic and Math</td>
<td>Explore</td>
<td>IRP Elective</td>
<td>IRP Elective</td>
</tr>
<tr>
<td>IRP Elective</td>
<td>Explore</td>
<td>Disciplinary Perspectives: The Arts</td>
<td>Explore</td>
</tr>
<tr>
<td>Explore</td>
<td>Explore</td>
<td>Explore</td>
<td>Explore</td>
</tr>
</tbody>
</table>

*All students are strongly encouraged to participate in the CMU/WSP (http://www.cmu.edu/ips/cmuwsp/) and/or in a study abroad program. Spring semester of the junior year is a popular semester to study off-campus. However, International Relations and Politics majors may instead choose to participate in the CMU/WSP or study abroad in spring of sophomore year, fall of junior year, or fall of senior year. Students should consult the deputy director when planning their curriculum program.**

**Students who participate in the CMU/WSP (https://www.cmu.edu/ips/cmuwsp/) will complete the Policy Seminar while studying in Washington, DC. Students who do not participate in the CMU/WSP will take the Policy Seminar in the spring of the senior year in Pittsburgh.**

### Additional Major

Students who elect International Relations and Politics as an additional major must fulfill all of the requirements of the International Relations and Politics major.

### B.S. in Economics and Politics

Politics and economics are deeply interconnected. Political institutions and decision-making impact economic growth, income distribution, and many other aspects of economic life. Both fiscal and monetary policies affect the economy, but these policies are often employed with political considerations in mind and can influence political activity. Conversely, economic outcomes shape political preferences and policy choices. The overlap between these two disciplines is endless. For example, while the United Nations is often thought of purely political terms, the Security Council can and does impose sanctions on countries— an example of an economic policy used for political change.

The Economics and Politics major is offered jointly between the Undergraduate Economics Program (https://www.cmu.edu/tepper/programs/undergraduate-economics/) (UEP) and the Institute for Politics and Strategy (https://www.cmu.edu/ips/) (IPS). Students are equal members of both
academic units and receive advising from both units. The major will appeal to any student interested in the design, evaluation, and political implementation of policy. It will be especially attractive to students considering careers in politics, government agencies, political and business consulting, lobbying, or the law.

The BS in Economics and Politics is an interdisciplinary major. The major will develop the political context and underpinnings of economic policy making. It will explore how political institutions resolve the tradeoffs and disagreements associated with policymaking and how they can facilitate or impede desirable economic outcomes.

IPS strengths lie in topics like national security, grand strategy, and globalization. Economic policy is just one facet of grand strategy, through which an administration pursues domestic and international goals. This major will also address key issues such as the complementarity between the multilateral economic institutions such as the IMF and World Bank and the use of economic coercion, and enable students to understand economic statecraft more broadly. Whether coercion is successful depends not just on the levers of power but on also on variations in authoritarian regime structure, and complex linkages in the international economy. This is also important for our understanding of the relationship between international economics on human rights practices, extending even to how treaty commitments can facilitate compliance with a global initiative to combat climate change. And, not least important, there is broad recognition that the viability of the “Euro Zone” depends on whether the political-economic agreements necessary to mitigate institutional weaknesses are politically feasible or destined to failure.

Economics and Politics is available as both a primary and additional major.

Curriculum

Students must earn a grade of “C” or better in all courses taken in the Department of Economics (73-xxx).

Prerequisites

Students must complete all of the following courses.

21-120 Differential and Integral Calculus 10
or 21-112 Integral Calculus
36-200 Reasoning with Data 9

Foundations (48 units)

Students must complete all of the following courses.

21-256 Multivariate Analysis 9
or 21-259 Calculus in Three Dimensions
73-102 Principles of Microeconomics 9
73-103 Principles of Macroeconomics 9
84-104 Decision Processes in American Political Institutions 9
84-275 Comparative Politics 9
73-210 Economics Colloquium I 3

Core (63 units)

Students must complete all of the following courses.

73-230 Intermediate Microeconomics 9
73-240 Intermediate Macroeconomics 9
73-265 Economics and Data Science 9
73-274 Econometrics I 9
84-265 Political Science Research Methods 9
84-326 Theories of International Relations 9
84-310 International Political Economy 9

Communication (9 units)

Students must complete one course from the following list.

73-270 Professional Communication for Economists 9
84-250 Writing for Political Science and Policy 9

Electives (27 units)

Majors are required to take 27 units (three courses) from the elective lists below. At least one course (9 units) must be taken from Economics (73-xxx) and at least one course (9 units) must be taken from the Institute for Politics and Strategy (84-xxx). Students may complete electives through coursework in the Carnegie Mellon University Washington Semester Program (CMU/WSP) (https://www.cmu.edu/ips/cmuwsp/) Politics and Public Policy elective sequence.

Economics Electives

73-328 Health Economics 12
73-332 Political Economy 9
73-338 Financial Crises and Risk 9
73-352 Public Economics 9
73-353 Financial Regulation in the Digital Age 9
73-359 Benefit-Cost Analysis 9
73-365 Firms, Market Structures, and Strategy 9
73-421 Emerging Markets 9
73-427 Sustainability, Energy, and Environmental Economics 9

Politics and Strategy Electives

84-307 Economic and Political History of Contemporary China 9
84-308 Political Economy of Latin America Var.
84-309 Political Behavior 9
84-311 International Development: Theory and Praxis 9
84-313 International Organizations and Law 9
84-318 Politics of Developing Nations 9
84-319 U.S. Foreign Policy and Interventions in World Affairs 9
84-320 Global Perspectives on International Affairs 6
84-322 Nonviolent Conflict and Revolution 9
84-323 War and Peace in the Contemporary Middle East 9
84-324 The Future of Democracy 9
84-325 Contemporary American Foreign Policy 9
84-327 Repression and Control in Dictatorships 9
84-350 America and the World 6
84-352 Representation and Redistricting 9
84-362 Diplomacy and Statecraft 9
84-363 Comparative Legal Systems 9
84-364 Comparative Presidential Behavior: Leadership, Personality, and Decision Making 9
84-366 The American Presidency 9
84-369 Decision Science for International Relations 9
84-370 Global Nuclear Politics 9
84-372 Space and National Security 9
84-373 Emerging Technologies and the Law 9
84-380 US Grand Strategy 9
84-382 Conflicts in the Middle East: Iran, Iraq, and Proxy Warfare 9
84-386 The Privatization of Force 9
84-387 Technology and Policy of Cyber War 9
84-388 Concepts of War and Cyber War 6
84-389 Terrorism and Insurgency 9
84-390 Social Media, Technology, and Conflict 9
84-393 Legislative Decision Making: US Congress 6
84-402 Judicial Politics and Behavior 9
84-405 The Future of Warfare 9
84-414 International and Subnational Security 9
84-421 Advanced Topics in American Politics 9

CMU/WSP Politics and Public Policy Electives

84-330 The Shading of Democracy: The Influence of Race on American Politics 6
84-331 Money, Media, and the Power of Data in Decisionmaking 6
84-332 Effects of US Policy on Businesses: Perspectives of Asian Americans 6
84-333 Power and Levers for Change in Washington, DC 12
84-334 Presidential Power in a Constitutional System 6
84-335 Intelligence and Policy 6
84-336 Implementing Public Policy: From Good Idea To Reality 12
84-337 Biomedical Science Research, Policy, and Governance 6
84-338 Political News Coverage in the Era of Trump, Twitter, and “Fake News” 6
In the shifting landscape of cyber capabilities, how will laws, authorities, and policies keep pace? What are the implications and consequences of actions that may be considered “short of war” by some countries but “above the threshold” of conflict by others? Will a more aggressive defensive posture with respect to cybersecurity inadvertently increase the risk of conflict with states that sponsor malicious hacking groups? What is the proper balance between offense and defense in cybersecurity and what are cyber operations best integrated into a country’s overall military strategy?

Minor in Cybersecurity and International Conflict

Mark S. Kamlet, Interim Director, University Professor of Economics and Public Policy, and Provost Emeritus

Emily Half, Deputy Director

www.cmu.edu/ips (http://www.cmu.edu/ips/)

The minor in cybersecurity and international conflict analyzes the role of cyber warfare and cybersecurity in international politics—past, present, and future. Cyber attacks by nation-states and their proxies have the potential to reshape how wars are fought in the twenty-first century. As such, the complexity and policy challenge of cyber-engagements is immense and altogether without precedent. The minor addresses the role of deterrence, dissuasion, and attribution in cyber conflict, while also studying the nuances of key components of modern warfare—from the security dilemma to escalation management.

Coursing in this minor focuses on the existing gaps in our understanding of cybersecurity and international conflict, such as whether or not cyberspace is offense or defense dominant and which factors are most important in determining the answer to this, and other relevant questions, including how nation-states, their primary adversaries, and a bevy of nonstate actors engage online and in the virtual and information environments. Accordingly, the minor exposes students to basic technology concepts, methods of attack and defense, potential strategy and goals for cyber-engagement, and response and forensics for cyber-engagements.

Alongside conventional methods of warfare, cybersecurity has rapidly developed into a center-piece of state’s ability to project power and impose its will in order to achieve its national priorities and strategic objectives. As the United States and other emerging cyber powers craft and implement doctrine in this nascent domain, there is likely to be a rapid increase in activity, from efforts to disrupt the online activities of global terrorist networks like the Islamic State near daily raids on foreign networks designed to cripple states’ cyberweapons before they can be deployed.

More than at any time in the past, those who seek to start war may be harder to find and their motives more difficult to discern. Many of the technical challenges posed by cyberspace activities will be addressed in the School of Computer Science’s security and privacy concentration for SCS students. The SCS program requires a high degree of math and quantitative reasoning as early as the second semester of the freshman year and should consult with the Economics and Politics advisors about their course placement as soon as possible.

Additional Electives

- 19-411 Science and Innovation Leadership for the 21st Century: Firms, Nations, and Technologies
- 19-425 Sustainable Energy for the Developing World
- 70-365 International Trade and International Law
- 70-430 International Management
- 79-280 Coffee and Capitalism
- 79-318 Sustainable Social Change: History and Practice
- 80-135 Introduction to Political Philosophy
- 80-136 Social Structure, Public Policy & Ethics
- 80-321 Causation, Law, and Social Policy
- 80-335 Social and Political Philosophy
- 80-348 Health, Human Rights, and International Development
- 80-447 Global Justice
- 88-366 Behavioral Economics of Poverty and Development
- 88-419 International Negotiation
- 88-444 Public Policy and Regulations

CAPSTONE (15-21 units)

Students must complete all of the following courses.

- 84-450 Policy Forum 12 units if taken during CMU/WSP, 6 units if taken in Pittsburgh
- 73-497 Senior Project or Senior Honors Thesis

SAMPLE Four Year Plan

These sample curricula represent a plan for completing the requirements for the B.S. in Economics and Politics. Economics and Politics students are encouraged to spend a semester studying abroad. Please note that this is only a sample plan of study and not the only possible plan of study. The Economics and Politics major and Dietrich College General Education curricula provide a high degree of flexibility and coursework. Double counting between the major and minor exposes students to basic technology concepts, methods of dissuasion, and attribution in cyber conflict, while also studying the nuances of key components of modern warfare—from the security dilemma to escalation management.

Coursing in this minor focuses on the existing gaps in our understanding of cybersecurity and international conflict, such as whether or not cyberspace is offense or defense dominant and which factors are most important in determining the answer to this, and other relevant questions, including how nation-states, their primary adversaries, and a bevy of nonstate actors engage online and in the virtual and information environments. Accordingly, the minor exposes students to basic technology concepts, methods of attack and defense, potential strategy and goals for cyber-engagement, and response and forensics for cyber-engagements.
training. The cybersecurity and international conflict minor outlined herein tackles the social-scientific dimensions of cybersecurity with a focus on the implications of the cyber age for modern statecraft, warfare, elections (local, state, and national), and politics, more generally.

**CURRICULUM**

60 units

**Foundational Course**

Students must take one of the following two foundational courses (9 units):

- 84-275 Comparative Politics 9
- 84-326 Theories of International Relations 9

**Core Courses**

Students must take all of the following core courses (24 units):

- 84-387 Technology and Policy of Cyber War 9
- 84-388 Concepts of War and Cyber War 6
- 84-405 The Future of Warfare 9

**Elective Courses**

Students must take three courses from the following list of elective courses (27 units). At least one course (9 units) must be taken from the Institute for Politics and Strategy and have an 84-number.

6-735 Ethics and Robotics 12
17-200 Ethics and Policy Issues in Computing 9
79-301 History of Surveillance: From the Plantation to Data Capitalism 6
79-302 Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons Systems 6
17-303 Cryptocurrencies, Blockchains and Applications 6
17-331 Information Security, Privacy, and Policy 12
17-333 Privacy, Policy, Law, and Technology 9
17-334 Usable Privacy and Security 9
17-702 Current Topics in Privacy Seminar 3
79-301 History of Surveillance: From the Plantation to Data Capitalism 6
79-302 Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons Systems 6
80-249 AI, Society, and Humanity 9
84-200 Acceleration: A Global Security War Game in the Age of Pandemic 3
84-319 U.S. Foreign Policy and Interventions in World Affairs 9
84-323 War and Peace in the Contemporary Middle East 9
84-325 Contemporary American Foreign Policy 9
84-327 Repression and Control in Dictatorships 9
84-361 Leaders and International Security 6
84-370 Global Nuclear Politics 9
84-372 Space and National Security 9
84-373 Emerging Technologies and the Law 9
84-380 US Grand Strategy 9
84-382 Conflicts in the Middle East: Iran, Iraq, and Proxy Warfare 9
84-386 The Privatization of Force 9
84-389 Terrorism and Insurgency 9
84-390 Social Media, Technology, and Conflict 9
84-414 International and Subnational Security 9
95-444 Cybersecurity Policy and Governance I 6

Students are permitted to double count a maximum of two courses between the minor in Cybersecurity and International Conflict and another major or minor.

**Minor in International Relations and Politics**

Mark S. Kamlet, Interim Director, University Professor of Economics and Public Policy, and Provost Emeritus

kamlet@cmu.edu, Posner Hall 385A

Emily Half, Deputy Director

ehalf@andrew.cmu.edu, Posner Hall 391, 412-268-7082

www.cmu.edu/ips (http://www.cmu.edu/ips/)

The International Relations and Politics (IRP) minor analyzes the role of politics at the national, regional, international, and transnational levels; examines political and institutional arrangements within and among these levels; and investigates the grand strategy of nation-states.

Statesmen, scholars, and policy makers often define grand strategy as the combination of diplomatic, economic, military, and political factors used by leaders to defend their respective nation-states. The IRP minor investigates the way in which leaders and citizens construct grand strategy and national security policy more generally: the impact of domestic and international forces on states' security and economic policies; and the significance of alliances, coalitions, and international institutions for world politics. The study of grand strategy and political institutions is the flagship initiative of the minor.

In the tradition of Carnegie Mellon University, political science is studied and taught in an interdisciplinary manner. Utilizing the interdisciplinary strengths of the social sciences at CMU, IRP students study political phenomena through the perspectives of decision science, economics, and political history. Students pursuing the minor will be asked to develop an understanding of game theory, economic and statistical analysis, qualitative analysis, rational choice theory, and theories of behavioral decision making as they study alliances, coalitions, institutions, and political strategy. Recognizing the influence of language and culture on politics and international relations, students are encouraged to study a modern language other than English.

The International Relations and Politics minor is offered through the Institute for Politics and Strategy. A maximum of two courses may double count between the minor in International Relations and Politics and another major or minor.

**Curriculum**

54 units

**Core Courses**

Students must take all three core courses (27 units):

- 84-104 Decision Processes in American Political Institutions 9
- 84-275 Comparative Politics 9
- 84-326 Theories of International Relations 9

**Economics Requirement**

Students must complete one of the following courses. Excluded from all double counting rules.

- 84-110 Foundations of Political Economy 9
- 73-102 Principles of Microeconomics 9

**Electives**

Students select three courses (27 units) from any of the elective sequences below. Two courses (18 units) must be taken from the Institute for Politics and Strategy and have an 84-number.

**Grand Strategy and Political Institutions**

66-221 Topics of Law: Introduction to Intellectual Property Law 9
79-301 History of Surveillance: From the Plantation to Data Capitalism 6
79-302 Killer Robots: The Ethics, Law, and Politics of Lethal Autonomous Weapons Systems 6
80-135 Introduction to Political Philosophy 9
80-321 Causation, Law, and Social Policy 9
80-335 Social and Political Philosophy 9
84-200 Acceleration: A Global Security War Game in the Age of Pandemic 3
84-309 Political Behavior 9
84-319 U.S. Foreign Policy and Interventions in World Affairs 9
84-320 Global Perspectives on International Affairs 6
84-321 Autocrats and Democrats 9
84-322 Nonviolent Conflict and Revolution 9
84-323 War and Peace in the Contemporary Middle East 9
84-324 The Future of Democracy 9
84-325 Contemporary American Foreign Policy 9
84-327 Repression and Control in Dictatorships 9
84-362 Diplomacy and Statecraft 9
84-350 America and the World 6
Students must take 24 units from the below list of elective seminars offered in addition to the minor in Politics and Public Policy and another major or minor.

**Elective Seminars**

- 79-288 Bananas, Baseball, and Borders: Latin America and the United States
- 79-307 Religion and Politics in the Middle East
- 79-313 "Unwanted": Refugees, Asylum Seekers, and Patterns of Global Migration
- 79-314 The Politics and Culture of Memory
- 79-318 Sustainable Social Change: History and Practice
- 79-320 Women, Politics, and Protest
- 79-338 History of Education in America
- 79-342 Introduction to Science and Technology Studies
- 79-343 Education, Democracy, and Civil Rights
- 79-377 Food, Culture, and Power: A History of Eating
- 79-381 Energy and Empire: How Fossil Fuels Changed the World
- 79-385 Out of Africa: The Making of the African Diaspora
- 79-398 Documenting the 1967 Arab-Israeli War
- 85-375 Crosscultural Psychology

**Minor in Politics and Public Policy**

Mark S. Kamlet, Interim Director, University Professor of Economics and Public Policy, and Provost Emeritus kamlet@cmu.edu, Posner Hall 383A

Emily Half, Deputy Director

ehalf@andrew.cmu.edu, kamlet@cmu.edu, Posner Hall 391, 412-268-7082

www.cmu.edu/ips (http://www.cmu.edu/ips/)

Rooted in the discipline of political science, the minor in Politics and Public Policy explores how domestic politics while providing hands-on and practical learning experiences. Students pursuing the Politics and Public Policy minor must participate in the Carnegie Mellon University Washington Semester Program for one semester during their undergraduate experience.

From embassy headquarters to nongovernmental organizations, think tanks to advocacy organizations, and consulting firms to media outlets, Washington, DC, is a focal point for many international and public policy activities. Open to all Carnegie Mellon undergraduates, the Carnegie Mellon University Washington Semester Program (CMU/WSP) allows students to study public policy and intern in Washington for one semester. Undergraduates from any course of study who would value firsthand policy experience are invited to apply to the Carnegie Mellon University Washington Semester Program and declare a minor in Politics and Public Policy.

In this semester-long program, students live, work, and study in Washington, DC, coming into direct contact with political, business, and community leaders and learning about the most pressing policy issues of the day.

Students earn 48 units for the Carnegie Mellon University Washington Semester Program, interning about twenty-four hours per week in any sector or field of interest within Washington, DC, while taking classes taught by Carnegie Mellon faculty. The Institute for Politics and Strategy sponsors events and policy-oriented opportunities in Washington for students participating in the program to further enrich their experience and enhance their understanding of how Washington functions as a hub of international and public policy decision making.

The minor in Politics and Public Policy is offered through the Institute for Politics and Strategy. A maximum of two courses may double count between the minor in Politics and Public Policy and another major or minor.

**Curriculum**

| 57 units |

**Core Seminars**

Students must take the following two courses while participating in the CMU/WSP (24 units): 84-360 CMU/WSP Internship Seminar 12 84-450 Policy Forum 6 84-450 Policy Forum 6

**Elective Seminars**

Students must take 24 units from the below list of elective seminars offered in the CMU/WSP. Offerings vary by semester. (24 units): 84-330 The Shading of Democracy: The Influence of Race on American Politics 6
Carnegie Mellon University
Washington Semester Program

Mark S. Kamlet, Interim Director, University Professor of Economics and Public Policy, and Provost Emeritus
kamlet@cmu.edu, Posner Hall 385A

Emily Half, IPS Deputy Director
ehalf@andrew.cmu.edu; 412-268-7082, Posner Hall 391

Meghan Mattern, CMU/WSP Program Manager
mmattern@andrew.cmu.edu; 202-608-8316, 100 Maryland Ave NE, Suite 510, Washington, DC 20002

www.cmu.edu/ips/cmuwsp (http://www.cmu.edu/ips/cmuwsp/)

Undergraduates from any course of study who would value firsthand policy experience are invited to apply to the Carnegie Mellon University Washington Semester Program (CMU/WSP), sponsored by the university’s Institute for Politics and Strategy. In this semester-long program, students live, work, and study in Washington, DC, coming into direct contact with political, business, and community leaders and learning about the most pressing policy issues of the day.

Students earn 48 units for the Carnegie Mellon University Washington Semester Program, interning about twenty-four hours per week in any sector or field of interest within Washington, DC, while taking classes taught by Carnegie Mellon faculty. The Institute for Politics and Strategy sponsors events and policy-oriented opportunities in Washington for students participating in the program to further enrich their experience and enhance their understanding of how Washington functions as a hub of international and public policy decision making.

Students should contact the IPS deputy director for more information or to discuss how the CMU/WSP may fit into their curriculum. Students who participate in the CMU/WSP may qualify for a minor in Politics and Public Policy (https://www.cmu.edu/ips/undergraduate%20degrees/minors/minor-in-politics-and-public-policy.html).

Curriculum

All students enroll in the following core seminars (24 units).

Core Seminars
84-360 CMU/WSP Internship Seminar 12
84-450 Policy Forum 6
84-450 Policy Forum 6

Students enroll in 24 units from the below list of elective seminars. Offerings vary by semester.

Elective Seminars
84-330 The Shading of Democracy: The Influence of Race on American Politics 6
84-331 Money, Media, and the Power of Data in Decisionmaking 6
84-332 Effects of US Policy on Businesses: Perspectives of Asian Americans 6
84-333 Power and Levers for Change in Washington, DC 12
84-334 Presidential Power in a Constitutional System 6
84-335 Intelligence and Policy 6
84-336 Implementing Public Policy: From Good Idea To Reality 12
84-337 Biomedical Science Research, Policy, and Governance 6
84-338 Political News Coverage in the Era of Trump, Twitter, and "Fake News" 6
84-339 Seminar in Public Policy Research 12
84-343 Language and Power: How to Understand and Use Political Speech 6
84-346 Legal Issues in Public Administration 6
84-348 Advocacy, Policy and Practice 6

Foundational Course
Students select one course from the following list of courses offered at Carnegie Mellon University’s Pittsburgh or Qatar campus. Students may take this course before or after participating in the CMU/WSP. (9 units):
84-104 Decision Processes in American Political Institutions 9
84-275 Comparative Politics 9
84-326 Theories of International Relations 9

Economics Requirement
Students must complete one of the following courses. Students may take this course before or after participating in the CMU/WSP. Excluded from all double counting rules.
84-110 Foundations of Political Economy 9
73-102 Principles of Microeconomics 9

Policy Forum
Master of Science in International Relations and Politics (Accelerated-Track)

The accelerated Master of Science in International Relations and Politics (MS IRP-AMP) is open only to Carnegie Mellon undergraduate students. Students should have an undergraduate major, additional major, or minor in the Institute for Politics and Strategy, they should have participated in the Carnegie Mellon University Washington Semester Program, or they should have special approval from the faculty admissions committee. Students interested in applying for the MS IRP-AMP should consult with the Institute for Politics and Strategy (IPS) Deputy Director in the sophomore or junior year for details and advice on shaping undergraduate coursework to qualify for the program. Current undergraduates will apply for the accelerated master's degree during the junior year. Detailed information on the MS IRP-AMP curriculum is available on the Institute for Politics and Strategy website (https://www.cmu.edu/ips/graduatedegrees/msirp/).

Intellectual Rationale

The Institute for Politics and Strategy (IPS) seeks to train the next generation of political scientists who can examine and understand domestic and international government institutions and processes in the twenty-first century’s continuously changing global political structure. War has been a constant in our students’ lives, and that unfortunately does not look like it will change soon. But what is changing is the political landscape of war – from wars between nations to non-state actors like ISIS and al-Qaeda. Coupled with an increasingly global society, international relations and politics are extremely important for preparing students to analyze and manage uncertainty and transformation in many pursuits and places.

The Master of Science in International Relations and Politics (MS IRP) serves four academic goals.

1) To allow students to specialize in one of four conventional areas of political science.
2) To equip students with strong methodological skills.
3) To guide students in the production of a significant and publishable thesis.
4) To prepare students to enter the job market.

Faculty

MARK S. KAMLET, University Professor of Economics and Public Policy; Provost Emeritus; Interim Director of the Institute for Politics and Strategy - Ph.D., University of California, Berkeley; Carnegie Mellon, 1978-
IGNACIO ARANA ARAYA, Assistant Teaching Professor - Ph.D., University of Pittsburgh; Carnegie Mellon, 2016-
JOHN J. CHIN, Assistant Teaching Professor - Ph.D., Princeton University; Carnegie Mellon, 2016-
BARUCH FISCHHOFF, Howard Heinz University Professor in the Institute for Politics and Strategy and Department of Engineering and Public Policy - Ph.D., The Hebrew University of Jerusalem; Carnegie Mellon, 1987-
DANIEL M. SILVERMAN, Assistant Professor - Ph.D., The Ohio State University; Carnegie Mellon, 2016-
KIRON K. SKINNER, Taube Professor of International Relations and Politics - Ph.D., Harvard University; Carnegie Mellon, 1999-

Post-Doctoral Fellows

JONATHAN CERVAS, Postdoctoral Fellow - Ph.D., University of California, Irvine; Carnegie Mellon, 2020-
PEARCE EDWARDS, Postdoctoral Fellow - Ph.D., Emory University; Carnegie Mellon, 2021-
DANIEL HANSEN, Postdoctoral Fellow - Ph.D., Michigan State University; Carnegie Mellon, 2018-

Lecturers

RASHALL BRACKNEY, Lecturer - Ph.D., Robert Morris University; Carnegie Mellon, 2018-

FRED CRAWFORD, Lecturer - J.D., Georgetown University; Carnegie Mellon, 2017-
DALE CROWELL, Lecturer - M.A., Catholic University of America; Carnegie Mellon, 2018-
MARCIELA DEGRACE, Lecturer - Ph.D., Harvard University; Carnegie Mellon, 2018-
MOLLY DUNIGAN, Senior Lecturer - Ph.D., Cornell University; Carnegie Mellon, 2014-
MICHELLE GRISÉ, Lecturer - Ph.D., Yale University, J.D., University of Michigan; Carnegie Mellon, 2019-
THOMAS KARAKO, Lecturer - Ph.D., Claremont Graduate University; Carnegie Mellon, 2015-
SOPHIE LE BLANC, Lecturer - Ph.D., University of Delaware; Carnegie Mellon, 2017-
MATTHEW LANE, Lecturer - Ph.D., The Pennsylvania State University; Carnegie Mellon, 2021-
WILLIAM M. MARCELLINO, Lecturer - Ph.D., Carnegie Mellon University; Carnegie Mellon, 2021-
GEOFFREY MCGOVERN, Senior Lecturer - Ph.D., Binghamton University, J.D., Harvard University; Carnegie Mellon, 2013-
FORREST E. MORGAN, Lecturer - Ph.D., University of Maryland; Carnegie Mellon, 2017-
DANI NEDAL, Lecturer - Ph.D., Georgetown University; Carnegie Mellon, 2018-
KIMBERLY SMACZNIK, Lecturer - J.D., Harvard University; Carnegie Mellon, 2017-
ANDREW J. STRIVERS, Lecturer - Ph.D., University of Texas, Austin; Carnegie Mellon, 2021-
MARK A. TOUKAN, Lecturer - Ph.D., University of Wisconsin, Madison; Carnegie Mellon, 2021-
BEVERLEY WHEELER, Lecturer - D.Ed., Harvard University; Carnegie Mellon, 2012-
AUSTIN WHISNANT, Lecturer - MS, University of Pittsburgh; Carnegie Mellon, 2021-
JULIE WILSON, Lecturer - J.D., American University; Carnegie Mellon, 2017-
SEAN ZEIGLER, Lecturer - Ph.D., Duke University; Carnegie Mellon, 2019-