Carnegie Mellon University
Heinz College
INFORMATION SYSTEMS • PUBLIC POLICY • MANAGEMENT

Student Handbook | **2017-2018**

Master of Science in Public Policy and Management
Three Semester Track

Contents

HEINZ COLLEGE
MASTER OF SCIENCE IN PUBLIC POLICY AND MANAGEMENT
POLICIES AND GUIDELINES

1 INTRODUCTION

This handbook provides specific information on the curriculum and program requirements for the Master of Science in Public Policy and Management Program. The Heinz College also publishes a separate handbook which details College-wide policies and procedures pertaining to educational planning, program committee, teaching, scheduling and course credit, performance standards, academic standing, ethics and discipline, student privacy rights and major forms and deadlines. Students should familiarize themselves with both handbooks as they include information that is critical for your success. Both handbooks can be obtained through your program director and via the Heinz College website at: http://www.heinz.cmu.edu/academic-resources/student-handbook-forms/index.aspx

2 MISSION STATEMENT

The Heinz College educates men and women of intelligent action.

Its Master of Science in Public Policy and Management prepares ethical leaders who analyze and implement policy; ground decisions in scientific evidence; create, transform, and manage organizations; and develop innovative solutions to important societal issues around the world.

We achieve that end through curricular and co-curricular activities that stress problem-solving and team-based learning within a diverse community of individuals who are committed to serving the public interest.

3 CURRICULUM

You will complete the MSPPM program in four consecutive semesters, excluding summer semester. The MSPPM curriculum is structured with a set of Common Core courses, a set of Advanced Course requirements, and free electives. In order to successfully complete the MSPPM program, you must complete the following:

- 168 units of course credit;
- All Common Core courses (unless you exempt them);
- Advanced Coursework;
- All other standards for graduation, including meeting minimum grade point averages.

3.1 MSPPM Three Semester Requirements

You must complete the Common Core requirements and all other requirements listed below in order to graduate. You must take Common Core courses in the sequence shown below, unless you obtain permission in advance from the MSPPM Program Director or Associate Dean.

Fall Core Courses		**Units**
90-710	Applied Economic Analysis ***or***	12
90-709	Intermediate Economic Analysis	
90-707	Statistical Reasoning ***or***	12
90-711	Statistical Reasoning with R ***or***	
90-777	Intermediate Statistical Methods (6 units)	
94-701	*Business English (Mini 1 or Mini 2)* ***or***	6
90-717	*Writing for Public Policy (Mini 1 or Mini 2)*	
90-728	Introduction to Database Management (Mini 1 or Mini 2)	6
9x-xxx	*IT Requirement (your choice of 6 units among many choices)*	6
94-700	Organizational Design & Implementation *(Mini 1 or Mini 2)*	6
Spring Core Courses		
90-713	Policy & Politics: An International Perspective ***or***	12
90-714	Policy & Politics in American Political Institutions	
90-718	Strategic Presentation Skills	6
9x-xxx	*IT Requirement (taken in spring if not in fall)*	
90-722	Management Science I (Mini 3)	6
90-760	Management Science II (Mini 4)	6
90-723	Financial Statements and Analysis of Companies	6
9x-xxx	Financial Analysis (your choice from numerous courses) (Mini 4): Nonprofit Statements & Analysis: 90-744; Management Accounting: 90-725; Government Accounting: 90-731; Principles of Finance: 95-716 Advanced Financial Management Healthcare: 90-831	6
Summer Internship (Optional)		0
Fall or Spring Courses		
90-, 91-or 94-xxx	Advanced Policy (your choice of 12 units among many courses)	12
90-, 91-or 94-xxx	Advanced Methods (your choice of 12 units among many courses)	12
90-, 91-or 94-xxx	Additional Management (your choice from numerous courses)	6
xx-xxx	Electives: *more if exempt from core courses*	36
90-7xx	Systems Synthesis ***(third semester)***	12
Total Units:		**168**

3.2 Information Technology Core Requirement

All MSPPM students except MS-DA students must take 90-728, Introduction to Database Management plus at least six units from the courses listed below. Students may take additional courses from the lists as advanced policy or methods courses where cross-listed, but students may not use any course to satisfy both an information systems core requirement and an advanced requirement.

Information technology courses that meet the core requirement are listed in four categories:

- ***Analytics***—courses at the intersection of data analysis and information technology. There is very high demand for graduates who have analytical skills including a statistical package such as SAS or other advanced statistical software.
- ***Applications***—courses about using or analyzing information technology in organizations and a variety of settings. These courses apply information technology to various industries and functional areas of organizations.
- ***Strategy***—courses on approaches to using information technology as a comparative advantage or to advance the missions of organizations. These courses address the advantages as well as threats to strategic uses of information technology.
- ***Systems***—courses on or supporting designing, building, and implementing information systems. These courses have material at the foundation of information systems and provide comparative advantages for graduates.

Analytics

Course Number	Course Title	Units	Prerequisites	Semester	Mini
94-830	Analysis of Sample Survey Data	6	90-711 Statistical Reasoning	Spring	A4
95-791	Data Mining I	6	90-711 Statistical Reasoning	Fall Spring	A2, B2 A3, B3
90-866	Large Scale Data Analysis for Public Policy	6	90-711 Statistical Reasoning	Spring	A4
94-832	Business Intelligence & Data Mining SAS	6	90-711 Statistical Reasoning & 90-728 Database Management	Fall Spring	A2, B2 A4
94-827	SAS for Policy Analysis	6	90-711 Statistical Reasoning 90-728 Database Management	Spring	A4 B4
94-842	Programming R for Analytics	6		Fall Spring	A1, B2, C2 A3

95-868	Exploring and Visualizing Data	6		Spring	A3 B3

Applications

Course Number	Course Title	Units	Prerequisites	Semester	Mini
90-834	Health Care Geographic Information Systems	12	90-728 Database Management	Spring	A
94-706	Health Care Information Systems	12		Spring	A
95-732	Marketing Digital Media	6		Spring	A4 B4 C4
95-821	Product Management in Information Technology	6	95-820 Strategic management and Implementation	Spring	A4
94-823	Measuring Social	12		Fall Spring	A A
95-822	IT Consulting	12		Spring	A
94-812	Technology and International Development	6		Fall	A2

Strategy

Course Number	Course Title	Units	Prerequisites	Semester	Mini
95-859	Innovation and Technology	6		Fall	A2
95-752	Introduction to Information Security Management	12		Fall	A
95-775	IT Business Leadership	6		Fall	A1, B2
95-743	Cybersecurity Policy and Governance II	6		Fall	A2
95-744	Cybersecurity Policy and Governance I	6		Fall	A1

94-806	Privacy in the Digital Age	6		Fall	A1
95-794	Tech Startup: Tools and Techniques	6		Fall	A1

Systems

Course Number	Course Title	Units	Prerequisites	Semester	Mini
94-774	Business Process Modeling	6		Fall Spring	A1 A3
95-797	Data Warehousing	6	95-703 Database Management	Fall Spring	B2,A2 A3,B4
95-703	Database Management	12		Fall	A, B, C, D, E
90-801	Desktop Publishing	6		Fall Spring	A1,B2 B3, A4
94-810	Introduction to Supply Chain Management and Systems	6		Fall	A1
94-802	Introduction to Geographic Information Systems	12	90-728 Database Management	Fall & Spring	A,B A
94-838	Introduction to Raster GIS	6	90-728 Database Management	Fall Spring	A1 A4
95-808	IT Project Management	6		Fall & Spring	A1,B2 B3,A4
90-782	Multimedia	12		Fall & Spring	A A

3.3 Advanced Coursework

The coursework beyond the core can be characterized as structured choice. We require that students take each of the following: Advanced Methods courses (12 units), Advanced Policy courses (12 units), Advanced Management (6 units). We offer a range of courses that satisfy each of these requirements found here: http://www.heinz.cmu.edu/advanced-coursework-requirements/index.aspx

3.4 Project coursework

In addition, you must take a minimum of 12 units of a project course. To fulfill this requirement, you can elect to take either of the following:

- one semester of 90-739, System Synthesis or

- one semester of 90-719, Physical Technical Systems
- other project courses offered by the School on an occasional basis.

Physical Technical Systems projects are run jointly with the Department of Engineering and Public Policy and with the Department of Social and Decision Sciences.

4 CONCENTRATION AREAS

The MSPPM core curriculum combines classes in policy, management and technology to ensure that students are equipped to lead and manage organizations in the public interest. Beyond the required coursework, students can choose from a variety of elective classes that correspond to their career interests. Some students focus their electives in one specific area, while others take a broad sampling of policy topics and methods classes. Students work closely with academic advisor to select the classes that best achieve their individual goals.

Because of our faculty's expertise and the historical interests of our students, we have rich sets of elective course offerings in a number of areas. Each elective area has a faculty lead that you may contact if you have questions. Listed below are some of these areas and a sampling of courses in that area.

- Cyber Security and Management
- Energy Systems and Public Policy
- Environmental Policy
- Financial Management and Analysis
- Health Policy
- International Trade and Development
- Management
- Policy Analysis
- Social Innovation and Entrepreneurship
- Urban and Regional Economic Development

Concentrations require a minimum of 48 units of courses from provided lists. It is important to note that all of the courses listed are not offered in every academic year. It is also possible that the semester in which a course is offered may change from year to year and additional courses may be offered. You should consult with your advisor for courses that best match your academic and career interests. In addition, consult current course schedules for updated information.

1. CYBER SECURITY POLICY AND MANAGEMENT CONCENTRATION

Goal

Cyber threats to public, private, and non-profit sectors continue to increase with the potential to cause wide-spread disruption to the health and safety of citizens, economic growth and stability, and national security. People, processes, technologies, and *policies* are key ingredients in building a usable and durable approach to addressing the cyber challenge. Cyber security policy is the cornerstone of developing productive public-private partnerships, necessary for sharing vital threat information, coordinating responses to threats, and fortifying defenses. The Cyber Security Policy and Management concentration provides students with a core understanding of the cyber challenge and explores the ways in which policy enhances the effectiveness of traditional approaches to managing cyber threat. There is very large unmet demand for cyber security policy analysts and managers in all sectors of employment.

Faculty Leader

If you have questions about this concentration, **Randy Trzeciak** (randallt@andrew.cmu.edu). Further information on public policy and management careers in the cyber security profession is available from the National Initiative for Cybersecurity Careers and Studies (http://niccs.uscert.gov/training/tc/framework).

Curriculum

There are two foundational courses. To gain a substantial and broad understanding of cyber security as it relates to information assets, networks, and the use of the Internet students will take 95-752 Introduction to Information Security Management. To understand the policy aspects of cyber security, students will take 95-755 Information Security Risk Management, which broadly explores the policymakers and relevant policies that guide and govern cyber security in both government and private industry, such as the newly-published National Institutes of Standards and Technology (NIST) Cyber Security Framework. Students in 95-755 will also study well-known cases of cyber intrusion and disruption and explore the policy considerations that would have limited or mitigated disruptive outcomes.

Additional concentration courses allow students to further enhance their technical understanding of cyber security (for example, 95-748 Software and Security) or to develop specific expertise in critical policy areas such as privacy (94-806 Privacy in the Digital Age). While computer programming is not a prerequisite for this concentration, some cyber-security concentration courses such as 95-748 Software and Security may involve exposure to minor coding or script development concepts. Prior programming experience is not necessary to enroll in these courses.

To obtain the concentration in Cyber Security Policy and Management, students are recommended to take at least 48 units of coursework, including 24 units of foundational courses, as follows.

Foundation Courses:				
95-752	Introduction to Information Security Management	Fall		12 units
95-743	Information Security Compliance and Training	Fall	A2	6 units
95-744	Information security policy and Governance	Fall	A1	6 units

Additional Concentration Courses (Heinz):				
94-806	Privacy in the Digital Age	Spring/Fall	A1, Z4	6 units
95-756	Information Security Risk Management II	Spring	A4	6 units
95-757	Information Security Policy & Management	Spring	A4	6 units
95-758	Network and Internet Security	Spring		12 units
95-748	Software and Security	Spring	A3	6 units
95-749	Cryptography	Spring	A4	6 units
95-723	Managing Disruptive Technologies	Spring		12 units
95-818	Privacy, Policy, Law, and Technology	Fall		12 units
95-824	Policies of Wireless Systems and the Internet	Fall		12 units
95-855	Network Situational Awareness	Fall		12 units
95-878	Engineering Privacy in Software	Spring		12 units

Additional Concentration Courses (Information Networking Institute):				
14-761	Applied Information Assurance	Fall/Spring		12 units
14-809	Introduction to Cyber Intelligence	Fall		12 units
14-823	Network Forensics	Fall		12 units
14-829	Mobile Security	Fall		12 units
14-735	Secure Coding	Spring		12 units
14-814	Wireless Network Security	Spring		12 units
14-819	Introduction to Software Reverse Engineering	Spring		12 units
14-822	Host Based Forensics	Spring		12 units

Courses That Complement Concentration:

Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration. ***The courses below do not count towards the concentration area.***

90-747	Cost Benefit Analysis	Spring		6 units	Methods
94-842	Programming R for Analytics	Fall/Spring	A1,B1, C2, A3,	6 units	Methods
94-827	SAS for Public Policy	Spring	A3,, A4	6 units	Methods
90-812	Introduction to Python	Fall/Spring	A1, A3	6 units	Methods
94-832	Business Intelligence & Data Mining SAS	Fall/Spring	A, A2 ,A3, B3	6 units	Methods
90-842	Public Policy Implementation	Spring	A4	6 units	Policy

94-833	Decision Analysis and Multicriteria Decision Making	Fall	A2	6 units	Methods
90-730	Methods of Policy Analysis	Fall		12 units	Policy
94-813	Project Management	Fall/Spring	A1,B1, C1 A3,B3	6 units	Methods
94-854	Developing as a Leader	Fall/Spring	A2, A4	6 units	Policy
91-809	Organizational Change: Transition and Transformation	Spring	A4	6 units	Methods

2. ENERGY SYSTEMS AND PUBLIC POLICY CONCENTRATION

Goal

This Master of Science in Public Policy and Management (MSPPM) concentration is for students who have a science or engineering background and who seek a career in energy policy and management. The program is designed to prepare graduates for leadership positions in one of the many energy-related job markets where public policy and management skills are valued. These include opportunities in government, non-profits, consulting firms, traditional utility companies and energy suppliers, and alternative and renewable energy companies. Unique to this concentration are in-depth public policy and management knowledge, decision frameworks, and data analytic skill-bases with sufficient science and engineering background to effectively guide design, adoption, implementation, and management of innovative energy policies.

This concentration is a partnership between the School of Public Policy and Management at the Heinz College and the Engineering College's Energy Science, Technology and Policy (EST&P) master's degree program (http://www.cmu.edu/engineering/estp/index.html). EST&P is an interdisciplinary engineering degree "…based in engineering, aligned with new discoveries in science, attuned to sustainability and the environment, and informed by a broader perspective in economics and public policy." The students in this new energy policy and management concentration will benefit from the research and experiential opportunities made possible by the University's Wilton E. Scott Institute for Energy Innovation (http://www.cmu.edu/energy/) and its mission of, "…developing and demonstrating the technologies, systems and policies needed to make the transition to a sustainable energy future…[including] an understanding of the intersection of energy and public policy…."

Faculty Leader

If you have questions about this concentration, contact Karen Clay **(**kclay@andrew.cmu.edu**).**

Curriculum

The concentration consists of a minimum of 48 units of coursework, with of 24 units of foundation classes and 24 units of additional concentration coursework. Foundation courses for the concentration, listed below, are the energy core courses of the EST&P program (http://www.cmu.edu/engineering/estp/degree-program/curriculum.html) and cover energy supply,

demand, storage, utilization, policy, sustainability, and the environment. Additional concentration coursework, selected by the student in consultation with his/her academic advisor, can be drawn from a list of Heinz College courses, Tepper School of Business courses, and courses in the Engineering College's six departments (Chemical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Engineering and Public Policy, Materials Science and Engineering, and Mechanical Engineering). In addition to the 48-unit concentration and 102-unit common core the MSPPM degree includes 48 units of advanced coursework (12 units advanced policy, 18 units of advanced methods, and 18 units of free electives) drawn from lists of courses and tailored to complement and expand upon the concentration courses.

Foundation Courses (to be taken by all students in the concentration):			
39-610	Energy Conversion and Supply	Fall A1	6 units
39-613	Energy Transport and Storage	Fall A2	6 units
39-611	Energy Demand and Utilization	Spring A3	6 units

Additional Concentration Courses (Heinz College):			
90-747	Cost Benefit Analysis	Spring	6 units
90-768	Energy and the Environment	Spring	12 units
90-808	US Energy Policy	Fall A2	6 units
90-789	Sustainable Community Development	Spring	12 units
90-730	Methods of Policy Analysis	Fall	12 units
90-894	Federal Budget Policy	Spring A4	6 units
90-842	Public Policy Implementation	Spring A4	6 units
90-860	Policy in a Global Economy	Fall A1	6 units
94-854	Developing as a Leader	Spring A4 Fall A2	6 units

Additional Concentration Courses (Tepper School)*:			
45-928	Energy Finance	Spring E4	6 units
45-964	Real options	Fall A1	6 units
45-823	Options	Fall A2	6 units
45-863	Risk Management	Fall E2	6 units
45-875	Government and Business	Fall A1, A2	6 units
45-912	Business Forecasting with Time Series Models	Spring A4	6 units
45-960	Sustainable Operations	Spring A3	6 units
45-977	Catastrophic Risk Analysis	Spring A4	6 units

*Note that Heinz College students in the Energy Systems and Public Policy concentration do not have priority for registering in Tepper School courses.

Additional Concentration Courses (Engineering College, see EST&P disciplinary concentration courses http://www.cmu.edu/engineering/estp/degree-program/index.html**)**

Advanced Coursework (may also be taken from Additional Concentration courses)				
94-842	Programming R for Analytics	Fall/Spring, A1, B1, C2, A3	6 units	Methods
94-827	SAS for Public Policy	Spring A3, A4, B4	6 units	Methods
90-812	Introduction to Python Programming	Fall/Spring A1, A3	6 units	Methods
94-832	Business Intelligence & Data Mining SAS	Fall A2 B2	6 units	Methods
94-833	Decision Analysis and Multicriteria Decision Making	Fall A2	6 units	Methods
95-791	Data Mining	Fall A2	6 units	Methods
95-865	Text Analytics	Fall/Spring A2, A3	6 units	Methods
95-866	Advanced Business Analytics	Fall A2	6 units	Methods
95-723	Managing Disruptive Technologies	Spring	12 units	Methods
95-868	Exploring and Visualizing Data	Spring A3, B4	6 units	Methods
94-813	Project Management	Fall/Spring A1,B1,C1 A3, B3	6 units	Methods
90-737	Budgeting and Management Control Systems	Fall	12 units	Methods
90-866	Large Scale Data Analysis for Public Policy	Fall A2	6 units	Methods
94-802	Introduction to Geographic Information Systems	Fall & Spring	12 units	Methods
94-838	Introduction to Raster GIS	Fall & Spring A1, A3	6 units	Methods
94-814	Evidence-Based Management	Fall A2	6 units	Methods
94-834	Applied Econometrics I	Fall & Spring A1, B2, A3, B3	6 units	Methods
94-835	Applied Econometrics II	Fall & Spring , A2, A4	6 units	Methods
94-811	Strategy Development	Fall A1	6 units	Policy
94-845	Smart Cities: Growth in Intelligent Transportation	Fall A2	6 units	Policy
94-800	Negotiation	Fall & Spring	6 units	Policy
90-734	Urban Policy: Shaping the City	Spring A4	6 units	Policy
90-733	Urban Development	Spring A3	6 units	Policy
90-765	Cities, Technology, and the Environment	Spring A3	6 units	Policy

3. ENVIRONMENTAL POLICY CONCENTRATION

Goal

The Environmental Policy Concentration provides students interested in environmental policy and planning with concepts, knowledge, and tools in the environmental area.

Faculty contact person

If you have questions about this concentration contact Karen Clay **(**kclay@andrew.cmu.edu**).**

Curriculum

Foundation courses in the concentration provides a broad survey of the area; which covers the economics of regulation; and or, which address primary drivers of pollution. Population growth, urbanization, and energy use are primary drivers of environmental pollution so policy makers need a grounding in these areas. Global warming occupies center stage and sustainability is critical. Of course, there is a technical side to the environmental area, so students benefit by taking at least one course with engineers.

Students interested in the Environmental Policy Concentration are recommended to complete at least 48 units of coursework from the following list:

Foundation Courses:				
90-798	Environmental Policy & Planning	Fall		12 units

Additional Concentration Courses:				
90-808	Energy Policy	Fall	A 2	6 units
90-789	Sustainable Community Development	Spring		12 units
90-765	Cities, Technology & the Environment	Spring	A3	6 units
90-813	Environmental Politics and Policy	Spring	A4	6 units
12-712	Introduction to Sustainability Engineering (Civil and Environmental Engineering, has limited freshman calculus;	Fall		12 units
19-424	Energy & the Environment	Fall		9 units

Courses That Complement Concentration: *Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration.* ***The courses below do not count towards the concentration area.***					
90-747	Cost-Benefit Analysis	Spring	A3	6 units	Methods
90-810	Population & Public Policy	Fall		12 units	Policy
94-834	Applied Econometrics I	Fall/Spring	B2, A3	6 units	Methods

90-733	Urban Development	Spring	A3	6 units	Policy
90-734	Urban Policy: Shaping the City	Spring	A4	6 units	Policy
90-842	Public Policy Implementation	Spring	A4	6 units	Policy
94-802	Geographic Information Systems	Fall/Spring		12 units	Methods
90-792	Applied Demography	Spring		12 units	Methods

4. FINANCIAL ANALYSIS AND MANAGEMENT CONCENTRATION

Goal

The courses in the Financial Analysis and Management concentration are designed to give students a background in the theory and practice of not-for-profit finance, either in the public (government) or private not-for-profit sector.

Faculty Leader

If you have questions about this concentration contact **Professor Kathleen Smith** (ks54@andrew.cmu.edu).

Curriculum

Foundation courses that should be taken by all students in the Financial Management and Analysis concentration include 90-737 Budgeting and Management Control and 90-736 Public Finance.

Students in the Financial Analysis Concentration are recommended to complete at least 48 units of coursework from the following foundation courses and additional concentration courses lists:

Foundation Courses				
90-737	Budgeting and Management Control	Fall		12 units
90-736	Public Finance	Fall		12 units

Additional Concentration Courses				
90-774	Public Expenditure Analysis	Spring		12 units
90-817	Regional Finance and Education Policy	Spring		12 units
90-831	Advanced Management of Health Care	Spring	A4	6 units
90-747	Cost Benefit Analysis	Spring	A3	6 units
94-834	Applied Econometrics I	Fall/Spring	A1, B2, C2 A3	6 units
90-823	Program Evaluation	Fall/Spring		12 units

Courses That Complement Concentration *Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration.* ***The courses below do not count towards the concentration area.***					
94-800	Negotiation	Fall/Spring	A1, B2 C1, D2 A3, B4	6 units	Methods
94-854	Developing as a Leader	Fall/Spring	A2, A4	6 units	Policy
94-833	Decision Analysis and Multicriteria Decision Making	Fall	A2	6 units	Methods
94-823	Measurement & Analysis Social Media Initiatives	Fall		12 units	Methods
94-827	SAS for Public Policy	Spring	A3	6 units	Methods
94-811	Strategy Development	Fall/Spring	A1, A3 B4	6 units	Methods
90-842	Public Policy Implementation	Spring	A4	6 units	Policy

5. HEALTH POLICY CONCENTRATION

Goal

The Health Policy enhances students' education by teaching them how to think strategically about the economic, political, and financial environment in which health care is delivered and equipping them with the technical and analytic tools needed to develop and analyze health policy.

Faculty Leader

If you have questions about this concentration contact **Professor Laura Synnott** (synnott@andrew.cmu.edu).

Curriculum

In order to provide students with fundamental knowledge in areas unique to the health care, students are recommended to take at least 48 units of coursework from the following foundation and additional concentration course lists. 90-836 Health Systems is a pre-requisite for a number of health courses and must be completed prior to taking other coursework.

Foundation Courses:				
90-836	Health Systems	Fall	A1	6 units
90-861	Health Policy	Fall	A2	6 units

Additional Concentration Courses:				
90-721	Health Care Management	Spring	A3	6 units
90-831	Advanced Financial Management of Health Care	Spring	A4	6 units
94-705	Health Economics	Fall		12 units

90-833	Population Health	Spring	A3	6 units
90-834	Health Care GIS	Spring		12 units
90-818	Health Care Quality and Performance Improvement	Fall	A2	6 units
94-706	Health Care Information Systems	Spring		12 units
90-832	Health Law	Spring	A3	6 units

Courses That Complement Concentration:

Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration. ***The courses below do not count towards the concentration area.***

90-747	Cost-Benefit Analysis	Spring	A3	6 units	Methods
94-834	Applied Econometrics I	Fall/Spring	A1 B2 A3	6 units	Methods
94-835	Applied Econometrics II	Fall/Spring	A2, A3, B4		
90-823	Program Evaluation	Fall/ Spring		12 units	Methods
90-842	Public Policy Implementation	Spring	A4	6 units	Policy

6. INTERNATIONAL TRADE AND DEVELOPMENT CONCENTRATION

Goal

Globalization is one of the most critical social forces of the past half-century. Globalization has radically reshaped the domains of economics, business, finance, and global politics, and it will continue to do so throughout the working lives of current and future Heinz students. The International Trade and Development Concentration provides students interested in international economics, economic development, and international relations with the analytical frameworks and conceptual tools they need to understand the current public policy debates in this area. Those tools include:

a. The main analytic methods and approaches used in international relations.
b. The foundational economic models used to understand the contemporary global trading system, international financial markets, and the operation of multinational enterprises.
c. The analytical tools and frameworks needed to understand the rise of Asia as a major center of the global economy.
d. Human rights, conflict and development problems affecting selected Latin American, African and Asian countries
e. Comparative approach to poverty, social policy and inequality
f. Trade relations with a special focus on Asia and the U.S.
g. Economics of development

These courses and tools are essential for students who wish to become effective policy makers, analysts and managers in international organizations, and in the public and private sectors both in the U.S. and in other countries.

Faculty leaders

The International Trade and Development Concentration is jointly led by **Professors Lee Branstetter (branstet@cmu.edu) and Silvia Borzutzky (sb6n@andrew.cmu.edu).** Interested students are encouraged to approach either faculty member with questions about the concentration, its courses, courses outside of Heinz College, or further resources for international study and research at Carnegie Mellon.

The International Trade and Development concentration provides students with a menu of courses offered by the Heinz College that explore the phenomena of globalization, international development, international policy, and trade issues in depth and from multiple perspectives. All students are strongly encouraged to the core course, 90-713 International Policies and Politics, and the concentration foundation course, 90-860 Policy in a Global Economy. These courses provide students with the frameworks essential to understand economic globalization and the political issues that shape its evolution on the other.

Interested students are also given the option of enrolling in international courses outside the Heinz College. Students interested in such courses should seek the advice and consent of the Concentration Director prior to enrollment. This faculty member can help guide students to outside courses that meet the Heinz College's standards of quality and rigor.

Heinz Global Footprint

In addition to the resources available on the Pittsburgh campus, our students can take advantage of the opportunities provided by Carnegie Mellon's campuses in Qatar and Rwanda and the Heinz College campus in Adelaide, Australia and Washington, DC. The global presence of Carnegie Mellon and the Heinz College allows our students to participate in programs in the Middle East, Africa, and the Asia-Pacific region, and be directly exposed to the economic and political issues of those critical regions. Our students can learn directly from experts located in those very important areas of the world, and use our network of connections to policymakers and institutions to influence public policy far beyond the borders of the United States. Washington, DC, is not only the home of the U.S. federal government but also the headquarters of the International Monetary Fund, the World Bank, and a wide spectrum of agencies, NGOs, think tanks, and other organizations that shape public policy around the world. Our campus near Capitol Hill provides our students with easy access to institutions and thinkers with far-reaching global impact. Students can access these resources in a variety of ways including long distance classes and lectures, access to internships in local institutions, and the possibility of participating in academic and practical projects in those institutions.

Foundation Courses:				
90-860	Policy in a Global Economy	Fall	A1	6 units

Additional Concentration Courses:				
94-817	Negotiation: An International Perspective	Fall		12 units
90-763	Human Rights, Conflicts, and Development	Fall	A1	6 units
90-704	Poverty, Inequality, and Social Policy: An International Comparison	Fall		12 units
90-816	Introduction to Migration Policy	Fall	A2	6 units
94-812	Technology for International Development	Fall	A2	6 units
90-752	The Rise of the Asian Economies	Fall		12 units
90-822	Immigration Research: Interpretation and Critique	Spring	A3	6 units
94-859	International Crisis Negotiation Exercise	Spring	A4	3 units
90-745	Methods of Policy Analysis: International Policy	Spring		12 units

7. MANAGEMENT CONCENTRATION

Goal

This concentration is designed to ensure that students achieve a thorough understanding of management, planning, human resources, managerial decision-making, and organizational analysis and development within organizations that pursue the public interest.

Faculty Leader

If you have questions about this concentration contact Professor **David Krackhardt** (krack@cmu.edu).

Curriculum

Students in the Management Concentration are recommended to complete at least 48 units of coursework from the following foundation and additional courses.

Foundation Courses:				
94-814	Evidence-Based Management	Fall	A2,	6 units
94-854	Developing as a Leader	Fall/Spring	A2, A4	6 units

Additional Concentration Courses:				
94-800	Negotiation	Fall / Spring	A1,B2, C1,D2 A3,B4	6 units
91-809	Organizational Change: Transition and Transformation	Spring	A4	6 units
94-808	Management Consulting	Fall/Spring		12 units
94-803	Consulting Communication	Fall	A1	6 units

94-801	Acting for Management	Fall/Spring	A1,B2 C 2 A3, B4 C3	6 units
90-825	Innovation Management in Practice	Fall		6 units
94-856	Managerial and Engineering Economics	Spring		12 units
94-810	Introduction to Supply Chain Management	Fall/Spring	A1	6 units
94-811	Strategy Development	Fall/Spring	A1, A3, B4	6 units
94-813	Project Management	Fall/Spring	A1,B1, C1 A3,B3	6 units

Courses That Complement Concentration:
Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration. ***The courses below do not count towards the concentration area.***

90-823	Program Evaluation	Fall/Spring		12 units	Methods
90-747	Cost Benefit Analysis	Spring	A2	6 units	Methods
94-833	Decision Analysis and Multicriteria Decision Making	Fall	A2	6 units	Methods
90-703	Women and Public Policy	Spring	A3		Policy
90-851	Innovation Policy and Processes	Fall	A2	6 units	Policy
94-707	Principles of Marketing	Fall	A1, B1	6 units	Policy

8. POLICY ANALYSIS CONCENTRATION

Goal
The Policy Analysis Concentration prepares students to understand and solve policy problems of importance to the public and not-for-profit sectors.

Faculty Leader
If you have questions about this concentration contact **Professor Amelia Haviland** (amelia@andrew.cmu.edu).

Curriculum
A policy analyst is a generalist who works on series of high-level projects. The projects and fields vary over time but the underlying analytical framework, methods, and tools apply universally. Thus the Policy Analysis concentration includes several analytical courses and a variety of substantive policy area courses.

Foundation analytical courses that all students in the concentration are recommended to take are 90-747 Cost-Benefit Analysis, which provides an evaluative framework; two alternate empirical methods courses, 90-823 Program Evaluation, which addresses the collection of evidence on program performance and 94-834 Applied Econometrics I and II, which provide statistical methods for estimating relationships from non-experimental data; and a policy analysis framework course, 90-730 Methods of Policy Analysis. Students may focus on one substantive policy area, but it is recommended that students take courses in widely different areas to gain experience in analyzing a range of policy problems.

Students in the Policy Analysis Concentration are recommended to complete at least 48 units of coursework from the following list:

Foundation Courses:				
90-747	Cost Benefit Analysis	Spring		6 units
90-823	Program Evaluation*	Fall/Spring		12 units
94-834 & 94-835	Applied Econometrics I and II*	Fall/Spring	A1–B2, A3 A4	12 units
90-730	Methods of Policy Analysis	Fall		12 units
*You only need to take one of these two alternate foundation courses, but it is worthwhile to take both.				

Additional Concentration Courses:				
90-798	Environmental Policy and Planning	Fall		12 units
94-854	Developing as a Leader	Fall/Spring	A2, A4	6 units
90-842	Public Policy Implementation	Spring	A4	6 units
90-861	Health Policy	Fall	A2	6 units
90-704	Poverty, Inequality and Social Policies: An International Comparison	Fall		12 units
90-816	Introduction to Migration Policy	Fall	A2	6 units
94-831	Design and Policy for Humanitarian Impact	Fall		12 units
90-860	Policy in a Global Economy	Fall	A1	6 units
90-734	Urban Policy	Spring	A4	6 units
94-859	International Crisis Negotiation Exercise	Spring	A4	3 units
90-778	Media and Public Policy Making	Fall	A2	6 units

Courses That Complement Concentration: *Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration.* ***The courses below do not count towards the concentration area.***					
90-736	Public Finance	Fall		12 units	Methods
94-800	Negotiation	Fall/Spring	A1,B2, C1, D2 A3,B4	6 units	Methods
94-838	Introduction to Raster GIS	Spring	A3	6 units	Methods
90-774	Public Expenditure Analysis	Spring		12 units	Methods
94-842	Programming R for Analytics	Fall/Spring	A1,B 1, C2 A3,	6 units	Methods
94-827	SAS for Public Policy	Spring	A3, B 4	6 units	Methods
94-802	Geographic Information Systems	Fall/Spring		12 units	Methods
90-912	Demography	Spring		12 units	Methods
94-811	Strategy Development	Fall, Spring	A1, A3 B4,	6 units	Methods

9. SOCIAL INNOVATION AND ENTREPRENEURSHIP CONCENTRATION

Goal

The Social Innovation and Entrepreneurship Concentration provides students with the knowledge and fundamental tools to develop new ventures or assist existing organizations in all sectors to spearhead innovative ventures in the public interest that are more scalable and financially sustainable.. This concentration addresses issues relevant to serving the public interest via entrepreneurship in public, non-profit and for-profit institutions worldwide.

Faculty Leader

If you have questions about this concentration contact **Professor Tim Zak** (tjzak@andrew.cmu.edu).

Curriculum

The courses within the Social Innovation Concentration provide students with knowledge and depth in new venture development, human centered design, finance, , management, organizational analysis, and change for public good. The foundation courses provide students with a comprehensive introduction to the field as well as opportunities to gain practical skills required for success. Students interested in this concentration are advised to take at least 48 units of coursework from the following list:

Foundation Courses:				
90-811	Foundations of Social Innovation	Fall	A1	6 units

Additional Concentration Courses:				
90-737	Budgeting and Management Control Systems	Fall		12 units
94-831	Design and Policy for Humanitarian Impact	Fall		12 units
90-747	Cost-Benefit Analysis	Spring	A3	6 units
90-845	Social Innovation Incubator	Spring	A4	12 units
94-800	Negotiation	Fall/Spring	A1,B2, C1, A3,B4	6 units
94-810	Introduction to Supply Chain Management	Fall	A1	6 units
94-812	Technology and International Development	Fall	A2	6 units

Courses That Complement Concentration: *Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration.* ***The courses below do not count towards the concentration area.***					
90-823	Program Evaluation	Fall/Spring		12 units	Methods
91-809	Organizational Change: Transition and Transformation	Spring	A4	6 units	Methods
94-811	Strategy Development	Fall/Spring	A1, A3, B4	6 units	Methods
94-813	Project Management	Fall/Spring	A1,B1, C1 A3,B3	6 units	Methods

10. URBAN AND REGIONAL ECONOMIC DEVELOPMENT CONCENTRATION

Goal

The Urban and Regional Economic Development Policy Concentration provides students interested in the policy and practice of economic development in the United States with concepts, knowledge, and tools needed for economic development at the local, regional, or state level. The concentration is relevant for work in foundation, state, or federal level programs intended to support economic development at the local or regional level.

Students completing this concentration will be able to demonstrate an understanding of what economic development is, the forces that lead state and local governments to pursue economic development programs and strategies, as well as demonstrate understanding of some of the types of strategies pursued. Students will also have an ability to apply one or more policy analysis or management frameworks to an economic development problem, opportunity, or decision.

Faculty Leader

If you have questions about this concentration contact **Greg Lagana (glagana@andrew.cmu.edu**). Further information on areas of practice in economic development is available from the Heinz College Career Center, which offers an Introduction to Economic Development brochure. Interested students

are also invited to review the career profiles of Heinz alumni working in economic development at the Career Services Center.

Curriculum

Foundation courses in the concentration are 90-743 Urban and Regional Economic Development, which provides a broad survey of the area; 90-733 Urban Development, which provides a broad review of the redevelopment of American cities with an emphasis on financing development projects. Additional concentration courses include background/policy courses in urban settings, as well as courses related to entrepreneurship and business development, community development, real estate, and strategy. The curriculum emphasizes development in the U.S. context. Students interested in international development may want to consider the International Trade and Development concentration.

Foundation Courses:				
90-743	Urban & Regional Economic Dev	Fall		12 units
90-733	Urban Development*	Spring	A3	6 units
90-748	Real Estate Development*	Spring	A4	6 units
*Take one of these two courses as a foundation course and the other, if desired, as an additional concentration course.				

Additional Concentration Courses:				
94-800	Negotiation	Fall/Spring	A1,B2 C1,D2 A3,B4	6 units
90-734	Urban Policy: Shaping the City	Spring	A4	6 units
90-765	Cities, Technology, & the Environment	Spring	A3	6 units
90-789	Sustainable Community Development	Spring		12units
94-810	Introduction to Supply Chain Mgt	Fall/Spring	A1,	6 units
94-811	Strategy Development	Fall/Spring	A1, A3, B4	6 units
48-725	Real Estate Design & Dev (SoA)	Fall		9 units
45-885	Designing and Leading a Business (Tepper)	Fall	A1	6 units
94-845	Growth with Intelligent Transportation	Fall	A2	6 units
90-744	Public Expenditure	Spring		12 units

Courses That Complement Concentration:

Students are required to complete 30 units of Advanced Coursework. Below are recommended advanced policy & methods courses for this concentration. ***The courses below do not count towards the concentration area.***

90-730	Methods of Policy Analysis	Fall		12 units	Policy
90-737	Budgeting & Management Control	Fall		12 units	Methods
90-747	Cost-Benefit Analysis	Spring	A	6 units	Methods
90-811	Foundations of Social Innovation and Enterprise	Fall	A1	6 units	Policy

90-823	Program Evaluation	Fall/Spring		12 units	Methods
94-838	Introduction to Raster GIS	Spring	A3	6 units	Methods
90-842	Public Policy Implementation	Spring	A4	6 units	Policy
90-860	Policy in a Global Economy	Fall	A1	6 units	Policy
94-802	Geographic Information Systems	Fall/Spring		12 units	Methods
94-813	Project Management	Fall/Spring	A1, B1, C1, A3, B3	6 units	Methods
90-851	Science, Technology and Innovation Policy	Fall	A2	6 units	Policy

11. PRE-PHD OPTION

Goal

The Pre-PhD option provides students with a solid background and the foundation skills needed to prepare them for pursuing a PhD degree.

Curriculum

The Pre-PhD courses provide analytical and quantitative tools and methods through coursework in applied mathematics, statistics, econometrics, and microeconomics. Students interested in this option are recommended to take at least 48 units of coursework from the following list. Students with limited math backgrounds may choose to take additional courses from Carnegie Mellon's undergraduate math program. Please note that these are undergraduate courses and will not be counted towards your Heinz degree, but may be useful in strengthening your quantitative skills. These courses will need to be taken above and beyond the requirements for your Heinz degree. Note that all MSPPM students must take the Systems Synthesis project course and there is no thesis alternative for this requirement. Highly recommended is to take one or two independent studies to complete a research paper under the guidance of a faculty member with the result of a working paper posted in the Heinz College research papers collection online and possibly submitted for publication. Having been mentored by a faculty member and involved in research provide tremendous advantages when applying to PhD programs.

Number	Course Name	Semester	Units
94-834	Applied Econometrics I	Fall/Spring	6
94-835	Applied Econometrics II	Fall/Spring	6
90-823	Program Evaluation	Fall/Spring	12
90-905	PhD Statistics—Statistical Theory for Social and Policy Analysis	Fall	12
90-907	PhD Econometrics—Econometric Theory and Methods	Fall	12
90-908	PhD Microeconomics	Fall	12

90-912	Demography	Spring	12
21-126*	Introduction to Mathematical Software	Fall/Spring	3
21-111*	Calculus I	Fall/Spring	10
21-112*	Calculus II	Fall/Spring	10
21-120*	Differential and Integral Calculus	Fall/Spring	10
21-122 *	Integration and Approximation	Fall/Spring	10
21-240**	Matrix Algebra	Fall/Spring	10
21-256**	Multivariate Analysis and Approximations	Fall/Spring	9
21-257**	Models and Methods for Optimization	Fall/Spring	9
21-228**	Discrete Mathematics	Fall/Spring	9
21-484**	Graph Theory	Spring	9
21-341**	Linear Algebra	Fall/Spring	9
21-355**	Real Analysis	Fall/Spring	9
***Courses will NOT count towards Heinz degree. Courses require prior approval of the Program Director.**			
**** See Heinz College Handbook for policies pertaining to undergraduate coursework.**			

5 PROJECT COURSES

Project courses are organized around significant public interest or management problems, the solution to which requires a mix of technological, economic, social and political skills. Most project courses are sponsored by a public or not-for-profit agency or have a project advisory committee of people from a range of agencies interested in the project's outcome. As opposed to the traditional classroom setting, project courses are organized as an exercise in group problem solving. Students are divided into teams guided by faculty from the Heinz College and other colleges and departments in the university.

There are two separate project courses: Systems Synthesis and Physical/Technical Systems. Each lasts for one semester. You must take either one Physical/Technical course or one System Synthesis Project to fulfill graduation requirements. Occasionally, other types of project courses will be offered with which students may satisfy this requirement. The Systems Synthesis project must be completed during the student's final semester.

5.1 Systems Synthesis

Systems Synthesis projects allow students to apply the diverse skills developed in the classroom to a "real world" problem with a "real world client" in the design of a specific functioning public or non-profit sector system. The term "system" refers to the fact that the particular entity studied has an identifiable objective or function and consists of several interacting components, and the word "synthesis" refers to the fact that the desired output is an integrated design, drawing on multiple disciplines, for improved operation of that system.

In a Systems Synthesis project, you will work in a group to structure a problem, do appropriate analysis using quantitative and analytical tools, generate recommendations to solve or ameliorate the problem, and present the analysis and recommendations to the client in both written and oral form. Increasingly, the written form consists of websites with summaries for stakeholders as well as

downloadable materials such as reports. The experience will be designed to sharpen your problem-solving skills and skills in working effectively in groups.

The Systems Synthesis Project Course Guide provides more detailed information. It is distributed at the start of your systems project.

5.2 Organization of Systems Synthesis Projects

Projects must be supervised by at least one faculty member who maintains relations with the client, directs and critiques the students' work, coaches them for their presentations, coordinates relationships with a Project Advisory Committee, and grades the students on their contributions to the projects as well as grading the overall projects.

Systems Synthesis projects involve both oral and written work. Generally, each project should make at least one oral presentation to the client per semester; this presentation is open to the public and is advertised accordingly. Each student should participate in at least one oral presentation to the client. In addition, groups must produce an interim report and a final report. Each student should write a significant and identifiable section of the report and perform some nontrivial analysis, even if these efforts have to be improved upon by other members of the group before being included in a report to the client. The written report is expected to be of high quality but also produced on time. Each group must submit an electronic copy of the final report to the Associate Dean's Office.

5.3 Development of Systems Synthesis Projects

In the spring semester, the Program Director announces the request for Systems Synthesis project proposals. Typically, proposals are generated by faculty and by organizations external to the School of Public Policy and Management. In recent years, some very successful proposals have come from students with an interest in a particular problem. The MSPPM Program Director, Associate Dean, and other faculty designated by the Dean are available to assist students who are interested in developing their own proposals. If you are interested in organizing a project, you must submit a proposal to the MSPPM Program Director including as many of the following items as possible:

- a brief description of the system to be studied,
- the system client if identified,
- the kinds of alternative improvements to be considered,
- the types of data that would be used in such an analysis and how you intend to gather that data,
- the analytical approaches you anticipate you will use in the study,
- the feasibility of completing the project in one semester, and
- the name(s) of proposed faculty advisors.

It is certainly not necessary to have all of the aspects of a project listed above in place to submit a proposal. If you need assistance with any aspect of developing a project, contact the MSPPM Program Director. The most critical factors are a well-defined project idea, significant interest from students, the feasibility of completing the project, and the ability of the Associate Dean to assign a faculty member to supervise the project. The latter depends a great deal on the needs for individual faculty to teach other courses in the curriculum.

Projects proposed by students will be subject to review by the faculty for feasibility and suitability as a systems project. For additional information, please see the Guidelines for Systems Synthesis

Proposals.

During the summer between your first and second year, the MSPPM Program Director or Associate Dean will circulate a list of tentative projects and poll students on their interest in these projects. The determination of which projects will be run the following semester will depend on student interest and the availability of faculty to supervise a given project.

5.4 Assignment of Students to Projects

Student preference is an important consideration. The Committee tries to consider the link between the skills of the student and the nature of the tasks in the Systems courses.

5.5 Grading of Systems Synthesis Projects

You will receive a Systems Synthesis grade based on your individual and group performance. In any group project there is an inherent tension between rewarding individual and group performance. This tension is in part by design, as it reflects some of the realities of group staff work in public and private organizations. Grades in Systems Synthesis courses are a combination of individual and group considerations. It is generally desirable that students perform multiple roles in projects, and it is recommended that faculty and student evaluations consider these various contributions.

5.6 Physical/Technical Systems Projects

Topics for these projects are determined jointly by the Department of Engineering and Public Policy, the Department of Social and Decision Sciences, and the Heinz College. Physical/Technical Systems Projects allow you to work with engineering faculty and students to approach technology-oriented policy issues. In these projects, you will learn how to structure a diffuse problem, how to take an unfamiliar problem and gain enough mastery to make recommendations about policy issues, and how to make formal presentations to panels of experts from outside the academic community.

5.7 Independent Studies and Working Paper Option for Student Research

The MSPPM program does not have a thesis option for students interested in doing research. Instead of a thesis, the program requires the Systems Synthesis group project as the appropriate capstone experience for professional master's degree students. All MSPPM students must complete a Systems Synthesis project without exception.

Nevertheless, each year there is a small number of students who wish to conduct individual research projects; for example, because they wish to work in a "think tank" or pursue a PhD degree. For such students we recommend taking one or two elective independent studies courses with a faculty member and with the goal of publishing a working paper on the Heinz College website jointly with the faculty member (see http://www.heinz.cmu.edu/faculty-and-research/research/working-papers/index.aspx).

A working paper is a focused research product of journal length (25 to 35 double-spaced pages) that represents good progress on a research topic, publishable in an academic journal. In contrast, a thesis is a longer and more expansive work generally on the order of 100 or more pages in length. The merits of a working paper are many: (1) it is published and accessible from the Heinz website; (2) it is feasible to complete and graduate on time (whereas, there is no guarantee of finishing a thesis on time); (3) it is a strong basis upon which faculty members can write recommendation letters and which students can

include in work or PhD applications; and (4) it represents the "coin of the realm" for researchers which is the refereed journal article.

We recommend that students take a first independent studies course in the Fall of the second year of the program with the intention of finishing by the end of that semester. Quite often, however, research projects take longer than expected to complete, or additional features are discovered which are desirable to pursue. If necessary or desirable, then students can petition for a second independent studies course to finish up in Spring Semester.

6 SUMMER INTERNSHIP

The summer internship for three-semester MSPPM students is optional; however students are encouraged to seek internship opportunities.

Your internship will train you in ways significantly different from classroom instruction. By working in a professional environment, you will solidify the knowledge gained in your Heinz College coursework, refine career interests, and establish personal networks that might lead to later career opportunities. You also can earn income, though the Heinz College does accept volunteer internships. The internship also provides the faculty with feedback about the relevance of the curriculum and the effectiveness of the teaching program.

6.1 Internship Opportunity Fund

Students in the three-semester track are not eligible for Internship Opportunity Fund.

The Internship Opportunity Fund (IOF) is a student-run group that holds various fundraising activities throughout the year to raise money that will be matched by the College and then redistributed to students taking low-paying or unpaid summer internships, regardless of the employer's sector. The IOF is open to students in all programs who do not qualify for FWS and that have a required summer internship component, regardless of the employer's sector. Students that actively participate in the fundraising, and that have a demonstrated financial need, will receive preference when the funds are distributed.

7 PUBLIC AND NON-PROFIT CAREER OPPORTUNITIES PROGRAM (PNCOP)

7.1 Objective

The Public and Non-Profit Career Opportunities Program (PNCOP) at the Heinz College is designed to provide financial assistance to graduating students with large educational loan debts to encourage them to accept public service positions even though their salary levels may be significantly below those available in the private sector.

7.2 Eligibility

If you are a full- time student in your second year in the Master of Science in Public Policy and Management program and you are in good academic standing, you may submit an application form describing your prior public service experience, your career goals and objectives for entering public service, and your plans for obtaining employment in the public or non-profit sectors. Applications will be due during February of each academic year.

7.3 Selection

All applications will be ranked by an Evaluation Committee. The ranking will be based on the following factors:

- Potential for contribution to public service
- Total loan indebtedness incurred while at the Heinz College
- Academic performance at the Heinz College

The Evaluation Committee will then choose a set of the top-ranking applicants to receive the award. The number of awards distributed depends on available funds. Recipients of the award will be selected by the end of the fall semester.

7.4 Award Amounts

Selected recipients will be awarded $5,000. In no case will payments exceed the student's total outstanding education loan balance.

7.5 Payment of Awards

The awards will be made to students who accept full-time positions in the public or non-profit sectors at salaries significantly below those available in the private sector. The Committee will set a threshold salary each year based on information that is available on salary trends in the public and private sectors; awards will only be available for jobs which pay less than the threshold salary.

Each award will be paid in two equal installments, as follows:

- 1st payment (one-half of the total award) — upon forwarding a copy of an official acceptance letter from the placement agency to the Office of Financial Aid. The position must be at a public or non-profit agency at a salary below the threshold salary. In case of ambiguity about whether any particular job is in the "public sector," the review committee will decide on eligibility. An award recipient must submit a letter from an employer verifying the specific start date of employment and salary.

- 2nd payment (one-half of the total award) — one year from the date of graduation, provided the recipient continues employment in the public or non-profit sector. This payment will be automatic upon submission by the individual of a brief statement documenting his or her continued employment in the public or non-profit sector.

Payment may be made either directly to the recipient or to an educational lender, as determined by the recipient.

A student who has been selected to receive assistance is guaranteed both payments if he or she continues to meet the conditions for eligibility; in particular, the 2nd payment will be committed in the year of the initial award, so that it is not contingent on the availability of funds in the program in the following year.

7.6 Source of Funds

The Heinz College will pursue fund raising efforts to obtain external sources of funds to continue the program and to assist additional students in future years. The availability of external funding will determine the number of students that can be helped in future years and the amount of assistance.