MASTER OF PUBLIC INFORMATICS (MPI) PROGRAM OUTLINE

PROGRAM/COURSE STRUCTURE

The **Rutgers Bloustein School Public Informatics Program** is designed specifically for students with undergraduate degrees in a wide range of fields, while demonstrating competency in one or more programming languages and holding skills in data management, via coursework, work experience or a combination thereof. The Master of Public Informatics is a STEM designated degree.

The **Master of Public Informatics** will provide the vehicle for educating professional student cohorts in the competencies needed in public informatics: context, statistics, programming, data management, data analytics, visualization, spatial analysis, applications and the integration of these skills. Graduates of the new program will bring a critical voice and a deep understanding of context to an emerging field.

Participants complete the 36-credit program at their own pace, full- or part-time.
COURSE OFFERINGS

CORE (24 credits)
34:816:501 Theory & Practice of Public Informatics (3) (previously 34:970:502)
34:970:527/833:525 Applied Multivariate Methods (3) *or*
      34:970:630 Discrete Choice Methods (3)
34:833:633 Data Analytics: Using Big Data (3)
34:970:590 Graphical Communication for Planners (3)
34:970:591 Introduction to GIS for Planning and Public Policy (3)
34:970:592 Topics in GIS (3)
34:970:510/511 Graduate Planning Studios (3, 3) *or*
      34:833:640/641 Policy Practicum I and II(3, 3)

ELECTIVES (12 credits)*
These may be clustered in a specific application area, or the student may pursue breadth.
*some electives may require a prerequisite
From the MHA program
    34:501:520 Population Health (3)
    34:501:563 Health Systems Operations (3)
    34:501:565 Information Systems for Health Care (3)
From the MPP program
    34:833:524 Ethics in Planning and Public Policy (3)
    34:833:540 State and Local Public Finance (3)
    34:833:543 Economics for Public Policy (3)
    34:833:555 Labor Market Policy (3)

34:833:571 Public Management (3)
34:833:580 Health Care Policy (3)
34:833:585 American Social Policy (3)
34:833:635 Survey Research (3)
From the MCRP program
34:970:507 Comprehensive Planning (3)
34:970:520 Planning and Land-Use Administration (3)
34:970:528 Housing Economy and Markets (3)
34:970:532 Bridging Public Health and Urban Planning (3)
34:970:551 Transportation and Land Use (3)
34:970:553 Methods of Transportation Planning (3)
34:970:572 Green Building (3)
34:970:594 Program Evaluation (3)
34:970:600 Planning and Design I (3)
34:970:605 Planning Real Estate Analysis (3)
34:970:618 Environmental Planning and Management (3)
34:970:620 Energy Sustainability and Policy (3)
34:970:622 Urban Redevelopment (3)
34:970:633 Demography and Population Studies (3)
34:970:659 Advanced Graphical Communication for Planners (3)
or other courses as pre-approved by the Program Director.

TOTAL CREDITS: 36

MODEL SCHEDULE (FLIGHT PATH)

Fall	Spring	Fall
34:816:501 Theory & Practice of Public Informatics (3)	34:833:633 Data Analytics: Using Big Data (3)	34:970:592 Topics in GIS (3)
34:970:527/833:525 Applied Multivariate Methods (3)	*Planning:* 34:970:510/511 Studio *Policy:* 34:833:640 Policy Practicum I	*Planning:* 34:970:510/511 Studio *Policy:* Elective
34:970:590 Graphical Communication for Planners (3)	*Planning:* Elective *Policy:* 34:833:641 Policy Practicum II	Elective
Elective	34:970:591 Intro to GIS for Planning and Public Policy (3)	Elective

If a student has had a course similar to Intro to GIS or Graphical Communication for Planners, he/she may be advised/required to take more advanced level course within subject matter.

CORE COURSE DESCRIPTIONS

Theory and Practice of Public Informatics: A revolution is underway in the fields of city planning, urban design, public policy, public health, civil engineering, municipal operations, and city management. Public informatics covers a wide-ranging set of methods, application areas, and contextual considerations that practitioners must effectively apply in today's public realm. This course brings the theories and practices of public informatics together by investigating the methodological and contextual factors affecting specific application areas

Data Analytics: Using Big Data: An explosion in data and a massive reduction in computational costs is enabling the use and misuse of data analytics in many disciplines and professions. The fields of planning and public policy are and will be transformed for both better and worse due to these two trends. The purpose of this course is to provide students with an important set of programming and statistical tools necessary for data analytics. The context and applications will be drawn from planning and public policy. The technical skills acquisition will focus on using the programming language *R* and applying advanced statistical techniques. Conceptual and communication capabilities will also be developed.

Applied Multivariate Methods: Multivariate statistical methods used to analyze land-use, environmental, public health, and other large data sets.

Discrete Choice Methods: This course begins with a review of linear regression and focuses on categorical dependent variables. Methods include linear probability, logit, probit, multinomial, and conditional logit models.

Introduction to GIS for Planning and Public Policy: Overview of applied computing in planning with special emphasis on geographic information systems. Introduction to hardware and software, modeling techniques, database management systems, and decision support environments.

Topics in GIS: Selected topics in application of computer technology to planning. Advanced implementations of geographic information systems for planning, emerging software developments, and case studies.

Graduate Planning Studio: Team projects in planning design; research and program development; field studies and problem analysis in local, regional, state, and national contexts. Development of comprehensive solutions, strategies, and recommendations for inner-city, suburban, and exurban areas and for regions.

Policy Practicum I and II: Participation in a directed, client-focused research project that applies analytical techniques of policy analysis and evaluation or survey research to public policy problems.

CAREER TRAJECTORY

The Bureau of Labor Statistics, US Department of Labor reports that the 2014-24 job outlook for data analysts is expected to grow by 30% (much faster than the average), with almost 28,000 new jobs needing to be filled in this area.[1] Management analysts will add an additional 103,400 jobs (a 14% increase).[2] The National Science and Technology Council of the Executive Office of the President published a report in May 2016 stating "…a national Big Data innovation ecosystem needs a strong community of practitioners across Federal agencies to facilitate rapid innovation, ensure long-term propagation of ideas, and provide maximal return on research investments."[3]

In addition, prospective employers routinely express interest in students to fill positions related to public informatics. The following organizations have recently posted job openings with the Bloustein School's Student and Academic Services Office that requires a public informatics background:

- AARP
- The Advisory Board
- Applied Energy Group
- Deloitte
- DVRPC
- Federal Transit Authority
- Mathematica Policy Research
- MDRC
- New Visions
- Port Authority of New Jersey and New York
- Reinvestment Fund
- United Nations
- WSP

Examples of job positions/titles are the following:

- Data Analyst (Applied Energy Group)
- Data Analyst and Research Manager (Federal Highway Administration)
- Data Scientist (New Visions)
- Planning Data Scientist (DVRPC)
- Research Assistant (Newmark Knight Frank)
- Senior Data Scientist (The Advisory Board)
- Senior Methods Advisor (AARP)
- Technical Research Analyst (MDRC)
- Transportation Planner (WSP)

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[1] https://www.bls.gov/ooh/math/operations-research-analysts.htm
[2] https://www.bls.gov/ooh/business-and-financial/management-analysts.htm
[3] https://www.nitrd.gov/PUBS/bigdatardstrategicplan.pdf, p. 3.

PROGRAM COST STRUCTURE

The program costs vary from semester to semester and depending upon in-state versus out of state student status. Outlined below is the FALL 2017 semester charges. Fall 2018, Spring 2019 and Summer 2019 rates will be determined by the university in July 2018, and should assume a 1-5% increase in tuition and fees.

Tuition/Fee	Instate	Out of State
12 credits (four, 3- credit courses)	$8,424.00	$14,028.00
Campus Fee	$820.50	$820.50
School Fee	$179.00	$179.00
Computer Fee	$163.50	$163.50
Total	*$9,587.00*	*$15,191.00*

The average per-credit cost including all fees is $799 and $1,266 respectively.

All charges are officially outlined on the **Rutgers Student Accounting, Billing and Cashiering website**.