INST - INFORMATION STUDIES

INST126 Introduction to Programming for Information Science (3 Credits)
An introduction to computer programming for students with very limited or no previous programming experience. Topics include fundamental programming concepts such as variables, data types, assignments, arrays, conditionals, loops, functions, and I/O operations.
Prerequisite: Minimum grade of C- in MATH115; or must have math eligibility of MATH40 or higher; or permission of instructor.
Restriction: Must not have completed INST326 or CMSC131; and must be in Information Science program.
Credit Only Granted for: CMSC106, CMSC122, OR INST126.

INST152 Foundational Scholarship and Critical Inquiry in the Information Age (3 Credits)
Students will acquire, hone, and learn to apply foundational information literacy skills for research and application including: ethical information use and creation; information accessibility; and interpreting scholarly discourse.

INST201 Introduction to Information Science (3 Credits)
Examining the effects of new information technologies on how we conduct business, interact with friends, and go through our daily lives. Understanding how technical and social factors have influenced the evolution of information society. Evaluating the transformative power of information in education, policy, and entertainment, and the dark side of these changes.
Credit Only Granted for: INST201 or INST301.
Formerly: INST301.

INST301 Introduction to Information Science (3 Credits)
Examining the effects of new information technologies on how we conduct business, interact with friends, and go through our daily lives. Understanding how technical and social factors have influenced the evolution of information society. Evaluating the transformative power of information in education, policy, and entertainment, and the dark side of these changes.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies; and restricted to students in the Information Science Program on the Universities at Shady Grove campus.

INST309 Independent Study in Information Science (1-3 Credits)
Individual independent study of an aspect of information science, selected according to student interest and need in consultation with a member of the iSchool faculty. Repeatable to 6 credits if content differs.
Prerequisite: Must have completed INST301

INST311 Information Organization (3 Credits)
Examines the theories, concepts, and principles of information, information representation and organization, record structures, description, and classification. Topics to be covered in this course include the methods and strategies to develop systems for storage, organization, and retrieval of information in a variety of organizational and institutional settings, as well as policy, ethical, and social implications of these systems.
Prerequisite: Must have completed or be concurrently enrolled in INST201; or INST301.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST314 Statistics for Information Science (3 Credits)
Basic concepts in statistics including measure construction, data exploration, hypothesis development, hypothesis testing, pattern identification, and statistical analysis. The course also provides an overview of commonly used data manipulation and analytic tools. Through homework assignments, projects, and in-class activities, you will practice working with these techniques and tools to create information resources that can be used in individual and organizational decision-making and problem-solving.
Prerequisite: Must have completed or be concurrently enrolled in INST201; or must have completed or be concurrently enrolled in INST301. And minimum grade of C- in INST201 and INST301; and MATH115; and STAT100; and minimum grade of C- in MATH115 and STAT100.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
Credit Only Granted for: BIOM301, BMGT230, CCJS200, ECON230, ECON321, ENSM451, GEOG306, GEOG351, GVPT422, INST314, JOUR405, PSYC200 or PSYC201. (These courses do not necessarily meet the same major requirements-check with your advisor to see which of these courses will count for your major).

INST326 Object-Oriented Programming for Information Science (3 Credits)
An introduction to programming, emphasizing understanding and implementation of applications using object-oriented techniques. Topics to be covered include program design and testing as well as implementation of programs.
Prerequisite: 1 course with a minimum grade of C- from (INST126, CMSC106); and must have completed or be concurrently enrolled in INST201 or INST301. And minimum grade of C- in INST201; or minimum grade of C- in INST301.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
Credit Only Granted for: INST326 or CMSC131.

INST327 Database Design and Modeling (3 Credits)
Introduction to databases, the relational model, entity-relationship diagrams, user-oriented database design and normalization, and Structured Query Language (SQL). Through labs, tests, and a project, students develop both theoretical and practical knowledge of relational database systems.
Prerequisite: 1 course with a minimum grade of C- from (CMSC106, CMSC122, INST126); and must have completed or be concurrently enrolled in INST201 or INST301; and minimum grade of C- in INST201 and INST301.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
Credit Only Granted for: INST327 or BMGT402.

INST335 Teams and Organizations (3 Credits)
Team development and the principles, methods and types of leadership will be a focus with an emphasis on goal setting, motivation, problem solving, and conflict resolution. This course examines the principles of managing team projects in organizations through planning and execution including estimating costs, managing risks, scheduling, staff and resource allocation, communication, tracking, and control.
Prerequisite: 1 course with a minimum grade of C- from (INST201, INST301); and minimum grade of C- in PSYC100.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
INST346 Technologies Infrastructure and Architecture (3 Credits)
Examines the basic concepts of local and wide-area computer networking including an overview of services provided by networks, network topologies and hardware, packet switching, client/server architectures, network protocols, and network servers and applications. The principles and techniques of information organization and architecture for the Web environment will be covered along with such topics as management, security, authentication, and policy issues associated with distributed systems.
Prerequisite: 1 course with a minimum grade of C- from (INST201, INST301); and 1 course with a minimum grade of C- from (INST326, CMSC131); and minimum grade of C- in INST327.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
Credit Only Granted for: INST346 or BMGT405.

INST352 Information User Needs and Assessment (3 Credits)
Focuses on use of information by individuals, including the theories, concepts, and principles of information, information behavior and mental models. Methods for determining information behavior and user needs, including accessibility issues will be examined and strategies for using information technology to support individual users and their specific needs will be explored.
Prerequisite: 1 course with a minimum grade of C- from (INST201, INST301); and minimum grade of C- in INST311.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST354 Decision-Making for Information Science (3 Credits)
Examines the use of information in organizational and individual decision-making, including the roles of information professionals and information systems in informed decision-making through techniques such as data analysis and regression, optimization, sensitivity analysis, decision trees, risk analysis and business simulation models.
Prerequisite: INST314.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST362 User-Centered Design (3 Credits)
Introduction to human-computer interaction (HCI), with a focus on how HCI connects psychology, information systems, computer science, and human factors. User-centered design and user interface implementation methods discussed include identifying user needs, understanding user behaviors, envisioning interfaces, and utilizing prototyping tools, with an emphasis on incorporating people in the design process from initial field observations to summative usability testing.
Prerequisite: 1 course with a minimum grade of C- from (INST201, INST301); and minimum grade of C- in INST326; and minimum grade of C- in PSYC100.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST377 Dynamic Web Applications (3 Credits)
An exploration of the basic methods and tools for developing dynamic, database-driven websites, including acquiring, installing, and running web servers, database servers, and connectability applications.
Prerequisite: INST327.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.
Credit Only Granted for: INST377 or BMGT406.

INST408 Special Topics in Information Science (3 Credits)
Selected topics in information science.
Prerequisite: Must have completed INST201 OR INST301; or permission of instructor.
Restriction: Registration priority for students in BSIS program.
Repeatable to: 6 credits if content differs.

INST414 Data Science Techniques (3 Credits)
An exploration of how to extract insights from large-scale datasets. The course will cover the complete analytical funnel from data extraction and cleaning to data analysis and insights interpretation and visualization. The data analysis component will focus on techniques in both supervised and unsupervised learning to extract information from datasets. Topics will include clustering, classification, and regression techniques. Through homework assignments, a project, exams and in-class activities, students will practice working with these techniques and tools to extract relevant information from structured and unstructured data.
Prerequisite: INST314.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST447 Data Sources and Manipulation (3 Credits)
Examines approaches to locating, acquiring, manipulating, and disseminating data. Imperfection, biases, and other problems in data are examined, and methods for identifying and correcting such problems are introduced. The course covers other topics such as automated collection of large data sets, and extracting, transforming, and reformatting a variety of data and file types.
Prerequisite: INST326 or CMSC131; and INST327.
Restriction: Permission of INFO-College of Information Studies; and must be in Information Science program.

INST448 Digital Curation Research in Cultural Big Data Collections (3 Credits)
Examines approaches to locating, acquiring, manipulating, and disseminating data. Imperfection, biases, and other problems in data are examined, and methods for identifying and correcting such problems are introduced. The course covers other topics such as automated collection of large data sets, and extracting, transforming, and reformatting a variety of data and file types.
Prerequisite: INST326 or CMSC131; and INST327.
Restriction: Permission of INFO-College of Information Studies; and must be in Information Science program.

INST449 Digital Curation Innovation Center (DCIC) Projects (3 Credits)
Students will learn the principles, methods, and technologies involved in the digital curation of large cultural data collections. Students will learn these concepts in class lectures, discussions, and participating on project teams in the Digital Curation Innovation Center (DCIC).
Prerequisite: INST311.
Restriction: Must be in Information Science program.
Repeatable to: 6 credits if content differs.

INST462 Introduction to Data Visualization (3 Credits)
Exploration of the theories, methods, and techniques of visualization of information, including the effects of human perception, the aesthetics of information design, the mechanics of visual display, and the semiotics of iconography.
Prerequisite: INST314.
Restriction: Must be in Information Science program; and permission of INFO-College of Information Studies.

INST465 Design and Human Disability and Aging (3 Credits)
Design of special and mainstream products and systems to include use by people facing barriers to use due to disability and aging. Includes introduction to people with disabilities and the tools they use and strategies for cross-disability inclusive design of special and mainstream technology. The class will then be divided into interdisciplinary design teams. These teams will be given a special or mass market product for which they are to develop a design which is more accessible, yet remains mass producible and marketable. Emphasis will be on practical mass-market design and the realities and constraints of design for commercial production and/or public systems.
Credit Only Granted for: INST408B or INST465.
Formerly: INST408B.
INST466 Technology, Culture, and Society (3 Credits)
Individual, cultural, and societal outcomes associated with development of information & communication technologies (ICTs), including pro- and anti-social factors. Unpacking how gender, race, ethnicity, sexual orientation, disabilities, and political affiliations affect consumption and production of online experiences. Unpacking how structures of dominance, power and privilege manifest at individual, institutional and cultural levels.
Prerequisite: INST201.
Restriction: Must be in Information Science program; or permission of INFO-College of Information Studies.

INST490 Integrated Capstone for Information Science (3 Credits)
The capstone provides a platform for Information Science students where they can apply a subset of the concepts, methods, and tools they learn as part of the Information Science program to addressing an information problem or fulfilling an information need.
Prerequisite: Minimum grade of C- in INST314, INST335, INST346, INST352, and INST362.
Restriction: Must be in Information Science program; and must have completed all Information Science major core courses; and permission of INFO-College of Information Studies.