

Criminal Justice Data Analytics, MS

Program Director: Darren Wheelock, Ph.D.

Criminal Justice Data Analytics website (<https://www.marquette.edu/grad/programs-criminal-justice-data-analytics.php>)

Degree Offered

Master of Science, Plan B only

Program Description

The master of science in criminal justice data analytics (CJDA) is designed to develop graduates with the skills and knowledge to harness data and employ analytical tools effectively to inform ethical planning, decision making, and problem solving in criminal justice agencies and related organizations. The program also offers an accelerated 5-year bachelor's and master's degree option.

Learning Outcomes

Students completing the master of science in criminal justice data analytics will be able to:

1. Identify crime analysis opportunities that can be ethically addressed through an understanding of crime, criminal offending, the operations of criminal justice organizations, and the US criminal justice system.
2. Design and implement strategies for analyzing crime data using appropriate methods, tools, and datasets.
3. Analyze crime data to create actionable information, and use it to establish priorities, make decisions, and solve problems aligning with the ethics, needs, and values of individuals, communities, and stakeholders.
4. Display and explain the results of criminal justice data analytics projects using effective written, graphic, and verbal tools and techniques.
5. Use advanced data processing tools incorporating regulatory, data governance, master data management, data profiling, parallel and distributed processing best practices.

Criminal Justice Data Analytics Master of Science

The master of science in criminal justice data analytics (CJDA) is interdisciplinary program designed to utilize the existing data science program and expertise in the criminology and law studies program. Computer science (COSC) courses compose the program's data analytics core and provide instruction and training in computer science, data science and managing/manipulating large data sets. Criminology and law studies (CRLS) courses provide the context for applying the skills developed in the data analytics core to criminal justice related fields. The CRLS course work also includes a practicum, which provides students with an opportunity to analyze criminal justice data in collaboration with local agencies and organizations to examine evidence-based decisions and their ethical implications.

Program Requirements

Students must complete a total of 31 credit hours of course work for the master of science degree in criminal justice data analytics. This interdisciplinary program is composed of 15 credit hours in data analytics courses and 16 credit hours in criminology and law studies courses, including the practicum. The practicum's culminating experience provides the student an opportunity to work independently with a local non-profit or government agency through a community-engaged learning experience.

Required Course work

Code	Title	Hours
CRLS 5700	Ethics in Criminal Justice	3
CRLS 6100	Advanced Social Statistics	3
CRLS 6200	Introduction to Geographic Information Systems (GIS)	3
CRLS Elective - choose one of the following:		3
CRLS 5000	Criminological Theory	
CRLS 5350	Neighborhoods and Crime	
CRLS 5360	Crime Mapping	
COSC 5500	Visual Analytics	3
COSC 6510	Data Intelligence	3
COSC 6520	Data Analytics	3
COSC 6570	Data at Scale	3
COSC 6820	Data Ethics	3
CRLS 6970	Practicum Preparation	1

Total Credit Hours:**31****MASTER'S DEGREE WITH THE DATA SCIENCE CERTIFICATE**

The Department of Computer Science offers a data science certificate. If a criminal justice data analytics master's student chooses to also earn the certificate, admission to both programs may be concurrent. The same courses may be used to satisfy the requirements of the master's program and certificate, as outlined in the university bulletin for each program. Students are expected to be admitted into all programs they intend to complete, although course work completed prior to admission may be allowed to apply toward program requirements.

Students who are dually enrolled in the master's and the data science certificate may enroll in a secondary master's that also accepts the data science certificate and complete the remaining requirements for that degree.

Details on the data science certificate can be found in this bulletin.

ACCELERATED DEGREE PROGRAM

The accelerated degree program (ADP) is designed to give Marquette University undergraduate students a more efficient means to obtain a master of science degree in criminal justice data analytics. Interested Marquette students in their junior year (or equivalent) must meet the following criteria in order to apply for the ADP:

- Students must have a minimum cumulative undergraduate GPA of 3.200.
- Students must have completed at least 18 credits of CRLS course work (6 courses) by the end of their junior year.

Undergraduates participating in this program are granted early admission to the Graduate School and are allowed to take specific graduate-level courses during their senior year. Candidates for admission should submit transcripts and two letters of recommendation, but need not submit GRE scores. Candidates for admission to this program should notify the department director of graduate studies of their intentions.

University Policies

- Academic Censure - Graduate School (<https://bulletin.marquette.edu/policies/academic-censure/graduate/>)
- Academic Integrity (<https://bulletin.marquette.edu/policies/academic-integrity/>)
- Academic Misconduct (<https://bulletin.marquette.edu/policies/academic-misconduct-policy/>)
- Academic Program Definitions (<https://bulletin.marquette.edu/policies/academic-programs-defined/>)
- Accelerated Degree Programs (<https://bulletin.marquette.edu/policies/accelerated-degree-programs/>)
- Attendance - Graduate School (<https://bulletin.marquette.edu/policies/attendance/graduate/>)
- Awarding Diplomas and Certificates (<https://bulletin.marquette.edu/policies/awarding-diplomas-certificates/>)
- Background Checks, Drug Testing (<https://bulletin.marquette.edu/policies/background-checks-drug-testing/>)
- Class Rank (<https://bulletin.marquette.edu/policies/class-rank/>)
- Commencement (<https://bulletin.marquette.edu/policies/commencement/>)
- Conferral of Degrees and Certificates (<https://bulletin.marquette.edu/policies/conferral-degrees-certificates/>)
- Course Levels (<https://bulletin.marquette.edu/policies/course-levels/>)
- Credit Hour (<https://bulletin.marquette.edu/policies/credit/>)
- Credit Load - Graduate School (<https://bulletin.marquette.edu/policies/credit-load/graduate/>)
- Faculty Grading (<https://bulletin.marquette.edu/policies/faculty-grading/>)
- Family Education Rights and Privacy Act-FERPA (<https://bulletin.marquette.edu/policies/ferpa/>)
- Grade Appeals (<https://bulletin.marquette.edu/policies/grade-appeals/>)
- Grading System - Graduate School and Graduate School of Management (<https://bulletin.marquette.edu/policies/grading-system/graduate-management/>)
- Graduation - Graduate School (<https://bulletin.marquette.edu/policies/graduation/graduate/>)
- Immunization and Tuberculosis Screening Requirements (<https://bulletin.marquette.edu/policies/immunization-and-tuberculosis-screening/>)
- Last Date of Attendance/Activity (<https://bulletin.marquette.edu/policies/last-dateof-attendance-activity/>)
- Military Call to Active Duty or Training (<https://bulletin.marquette.edu/policies/militarycall-active-duty-training/>)
- Registration - Graduate School (<https://bulletin.marquette.edu/policies/registration/graduate/>)
- Repeated Courses - Graduate School (<https://bulletin.marquette.edu/policies/repeated-courses/graduate/>)
- Student Data Use and Privacy (<https://bulletin.marquette.edu/policies/student-data-use-privacy/>)
- Transcripts-Official (<https://bulletin.marquette.edu/policies/transcripts-official/>)

- Transfer Course Credit - Graduate School (<https://bulletin.marquette.edu/policies/transfer-course-credit-policy/graduate/>)
- Withdrawal - Graduate School (<https://bulletin.marquette.edu/policies/withdrawals/graduate/>)

Graduate School Policies

- Academic Performance (<https://bulletin.marquette.edu/graduate/policies/academic-performance/>)
- Academic Programs Overview (<https://bulletin.marquette.edu/graduate/policies/academic-programs-overview/>)
- Advising (<https://bulletin.marquette.edu/graduate/policies/advising/>)
- Assistantships and Fellowships (<https://bulletin.marquette.edu/graduate/policies/assistantships-andfellowships/>)
- Certificate Concurrent Enrollment (<https://bulletin.marquette.edu/graduate/policies/certificate-concurrent-enrollment/>)
- Conduct (<https://bulletin.marquette.edu/graduate/policies/conduct/>)
- Confidentiality of Proprietary Information (<https://bulletin.marquette.edu/graduate/policies/confidentiality-proprietary-information/>)
- Continuous Enrollment (<https://bulletin.marquette.edu/graduate/policies/continuous-enrollment/>)
- Courses and Prerequisites (<https://bulletin.marquette.edu/graduate/policies/courses-prerequisites/>)
- Cross-listed Courses (<https://bulletin.marquette.edu/graduate/policies/cross-listed-courses/>)
- Deadlines (<https://bulletin.marquette.edu/graduate/policies/deadlines/>)
- Graduate Credit (<https://bulletin.marquette.edu/graduate/policies/graduate-credit/>)
- Graduate School Policies (<https://bulletin.marquette.edu/graduate/policies/>)
- Independent Study (<https://bulletin.marquette.edu/graduate/policies/independent-study/>)
- Intellectual Property (<https://bulletin.marquette.edu/graduate/policies/intellectual-property/>)
- Research Involving Humans, Animals, Radioisotopes or Recombinant DNA/Transgenic Organisms (<https://bulletin.marquette.edu/graduate/policies/research-involving-humans-animals-radioisotopes-recombinant-dnatransgenic-organisms/>)
- Temporary Withdrawal from Graduate Program (<https://bulletin.marquette.edu/graduate/policies/temporary-withdrawal-graduate-program/>)
- Time Limitations (<https://bulletin.marquette.edu/graduate/policies/time-limitations/>)
- Working with Minors (<https://bulletin.marquette.edu/graduate/policies/working-minors/>)

COSC 5010 Teaching Computer Science (3 credits)

Historical background, problems, curricular materials and pedagogy in computer science pertinent to the needs of secondary school teachers.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205010>)

COSC 5290 Real-Time and Embedded Systems (3 credits)

Focuses on event-driven programming, real-time scheduling, and synchronization; worst-case execution time analysis and deadline analysis; real-time operating systems and real-time programming languages.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205290>)

COSC 5300 Network Design and Security (3-4 credits)

Focuses on the design and protocols of the upper layers of the Internet architecture, including the TCP/IP protocol suite, packet switching and routing, network programming and applications. Emphasizes related security attacks and defenses, including DNSSEC, TLS, IPsec and the BGP PKI protections. Taught as a lecture only or as a lecture with lab component.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205300>)

COSC 5360 Software and System Security (3 credits)

Fosters comprehension of cybersecurity foundations such as cryptography, operating system security, threat modeling, and secure programming. Develops passion for cybersecurity essential to performance of professional roles as developers, engineers, and managers.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205360>)

COSC 5370 Internet of Things (IoT) (3 credits)

Topics include the definition of IoT, trends in the adoption of IoT, the importance of the IoT in society, the current components of typical IoT devices and trends for the future. Focuses on IoT design considerations, constraints, and interfacing between the physical world and the device. Students are presented with design trade-offs between hardware and software, technologies behind the Internet of Things – RFID, NFC, Wireless networks, WSN, RTLS, GPS, agents, multiagent systems, IoT in retail, NFC applications for the IoT, and IoT in healthcare.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2022 Summer Term, 2021 Summer Term, 2020 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205370>)

COSC 5400 Compiler Construction (3 credits)

Lexical analysis, parsing, code generation and optimization. Includes theoretical foundations and the practical concerns of implementation.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2020 Fall Term, 2019 Spring Term, 2017 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205400>)

COSC 5500 Visual Analytics (3 credits)

Focuses on developing data products using the Javascript/D3 framework by combining concepts from human-computer interaction, visualization and design. Also focuses on model visualization, interpretation, A/B testing and design thinking.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205500>)

COSC 5550 Social and Collaborative Computing (3 credits)

Introduces Social Computing and Computer-Supported Cooperative Work (CSCW). Field includes theory, technology and study of computing systems that support groups of users and facilitate collaboration. Example applications and case studies include email, social networking sites, peer production, crowdsourcing, calendars, scheduling and meeting apps, online dating sites, multiplayer games, discussion forums, instant messaging, collaborative editors and analysis tools.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205550>)

COSC 5600 Fundamentals of Artificial Intelligence (3 credits)

An introduction to the broad field of artificial intelligence. Topics include problem solving by searching, knowledge representation, reasoning, planning, decision making, learning, perception and language processing.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205600>)

COSC 5610 Data Mining (3 credits)

Techniques for extracting and evaluating patterns from large databases. Introduction to knowledge discovery process. Fundamental tasks including classification, prediction, clustering, association analysis, summarization and discrimination. Basic techniques including decision trees, neural networks, statistics, partitional clustering and hierarchical clustering.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205610>)

COSC 5800 Principles of Database Systems (3 credits)

Topics include database concepts and architecture, data modeling, formal query languages such as relational algebra, commercial query language SQL, database access from application programs and a brief examination of advanced concepts including transactions, distributed databases, security and XML.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Summer Term, 2022 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205800>)

COSC 5860 Component-Based Software Construction (3 credits)

Introduction to software components in the context of the object-oriented paradigm. Component development, component selection and adaptation/customization, component deployment and assembly/integration, and system architecture. Industry standards such as JavaBeans, CORBA Component Model, and Microsoft COM/DOM/COM+.

Level of Study: Graduate

Last four terms offered: 2011 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205860>)

COSC 5931 Topics in Computer Science (1-3 credits)

Topics selected from one of the various branches of computer science. Specific topics to be announced in the Schedule of Classes.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%205931>)

COSC 6050 Elements of Software Development (3 credits)

Students explore the software design and development processes through a term project. Concepts covered include: requirements gathering and analysis, mapping requirements to a design, sound coding and documentation practices, configuration management, testing and quality assurance, system deployment and maintenance.

Prerequisite: Programming in a high-level language, knowledge in data structures such as stacks, recursion, queues, trees and graphs.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206050>)

COSC 6051 Professional Software Engineering 1 (3 credits)

Covers software engineering topics typically including: the software development life cycle (SDLC), development methodologies, software quality overview, configuration management, designing for risks and fault tolerance, languages and design, object-oriented programming, observational research and prototyping, requirements, software architectures, operating systems design and real time systems. Offered at General Electric facilities. As this course extends beyond the Marquette term, students receive the grade of IC initially. The IC grade converts to an A-F grade at the completion of the course.

Prerequisite: GE employee in the Software Edison program.

Level of Study: Graduate

Last four terms offered: 2020 Fall Term, 2019 Fall Term, 2018 Spring Term, 2017 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206051>)

COSC 6052 Professional Software Engineering 2 (3 credits)

Covers software engineering topics typically including: systems and communication networks, security and distributed systems, interoperability and standards, design for "ility" (e.g., usability and reliability) and performance, design for parallel processing, embedded systems hardware for software developers, embedded systems software, software design patterns and algorithms. Offered at General Electric facilities. As this course extends beyond the Marquette term, students receive the grade of IC initially. The IC grade converts to an A-F grade at the completion of the course.

Prerequisite: GE employee in the Software Edison program.

Level of Study: Graduate

Last four terms offered: 2020 Fall Term, 2019 Fall Term, 2018 Spring Term, 2017 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206052>)

COSC 6053 Professional Software Engineering 3 (3 credits)

Covers software engineering topics typically including: database systems, decision science, data quality and analytics, user interface design, design for globalization, debugging and troubleshooting, approach, method, implementation and emerging software technologies. Offered at General Electric facilities. As this course extends beyond the Marquette term, students receive the grade of IC initially. The IC grade converts to an A-F grade at the completion of the course.

Prerequisite: GE employee in the Software Edison program.

Level of Study: Graduate

Last four terms offered: 2020 Fall Term, 2019 Fall Term, 2018 Fall Term, 2018 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206053>)

COSC 6054 Professional Software Engineering 4 (3 credits)

Covers design topics related to system design with embedded computing. Topics typically include: design of controls, design for low cost, design for serviceability, design for usability, design for reliability, program management, innovation, requirements management and design thinking. Offered at General Electric facilities. As this course extends beyond the Marquette term, students receive the grade of IC initially. The IC grade converts to an A-F grade at the completion of the course.

Prerequisite: GE employee in the Software Edison program.

Level of Study: Graduate

Last four terms offered: 2020 Fall Term, 2019 Fall Term, 2018 Fall Term, 2017 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206054>)

COSC 6055 Software Quality Assurance (3 credits)

Provides a perspective on people, organizations, controls, processes and tools that collectively influence the success of a Software Quality Assurance (SQA) strategy. Discussion topics include quality approaches as they apply to: requirements, design, release, configuration management, testing, defect management, operations and support. Topics are discussed in the context of a traditional development approach (waterfall, CMMI) and more contemporary models driven by lean and agile practices. Covers considerations specific to implementing an SQA approach within a regulated setting. Approach emphasizes a hands-on view of SQA, thereby providing realistic takeaways to practice in a professional career.

Level of Study: Graduate

Last four terms offered: 2021 Spring Term, 2020 Spring Term, 2019 Spring Term, 2018 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206055>)

COSC 6060 Parallel and Distributed Systems (3 credits)

Students use and develop software for parallel and distributed computing systems. Topics include: job submission and management, tools for parallel and distributed software development, approaches for implementing parallel and distributed computation, parallel and distributed system architectures, and essential evaluation techniques.

Prerequisite: COSC 3100 or equiv.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206060>)

COSC 6090 Research Methods/Professional Development (1 credits)

Designed to introduce the process of research and communication of research in computer science, including presentation and publication of research, preparation of grant proposals, and ethical considerations. May be repeated.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2021 Spring Term, 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206090>)

COSC 6260 Advanced Algorithms (3 credits)

Covers advanced paradigms for the design and analysis of efficient algorithms. Emphasizes fundamental algorithms and advanced methods of algorithmic design, analysis, and implementation. Domains include: string algorithms, network optimization, parallel algorithms, computational geometry, external memory and streaming algorithms, and advanced data structures.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206260>)

COSC 6270 Advanced Operating Systems (3 credits)

Fundamental concepts of operating systems including kernel data structures; process control and scheduling; interprocess communication and synchronization; virtual memory and memory management; mass storage systems and device control; protection and security; and protection and virtualization; evaluation and prediction of performance. Students are expected to spend at least three hours per week gaining hands-on experience in using and modifying a small operating system.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206270>)

COSC 6280 Advanced Computer Security (3 credits)

Symmetric key and public key cryptography, hash functions, random numbers and cryptanalysis; authentication and authorization, password-based security, ACLs and capabilities, covert channels, security models, firewalls and intrusion detection systems; authentication protocols, session keys, SSH, SSL, IPsec, Kerberos, WEP, and GSM; flaws and malware, buffer overflows, viruses and worms, malware detection, software reverse engineering, digital rights management, secure software development and operating systems security; fundamentals about bitcoin and cryptocurrency technologies. Students write programs for assignments using the C programming language.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206280>)

COSC 6330 Advanced Machine Learning (3 credits)

Provides a graduate-level introduction to machine learning and statistical pattern recognition and in-depth coverage of new and advanced methods in machine learning, as well as their underlying theory. Emphasizes approaches with practical relevance and discusses a number of recent applications of machine learning, such as data mining, computer vision, robotics, text and web data processing. An open research project is a major part of the course.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206330>)

COSC 6340 Component Architecture (3 credits)

Focuses on designing and implementing software components, and streamlining the translation from business intent into realized application behavior in a practical hands-on, business-based environment. Introduces service-oriented architecture (SOA) and principles such as loose coupling, abstraction, reusability, autonomy, statelessness, discoverability, interoperability and composability.

Level of Study: Graduate

Last four terms offered: 2016 Spring Term, 2011 Fall Term, 2010 Spring Term, 2008 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206340>)

COSC 6345 Mobile Health (mHealth) (3 credits)

Offers a multidisciplinary overview of the emerging technologies used in mobile health (mHealth). Research and innovations in this area promise solutions to the need for broader access to affordable and effective healthcare by enabling consumers and their caregivers to take charge of their health and well-being. mHealth is the provision of health information and services using sensor data via mobile phones and tablets. Students develop foundational knowledge of understanding the behaviors, different data models, security and privacy issues.

Level of Study: Graduate

Last four terms offered: 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206345>)

COSC 6350 Distributed Computing (3 credits)

Introduces a broad spectrum of topics encompassing system architecture, software abstractions, distributed algorithms and issues pertaining to distributed environments such as replication, consistency, fault tolerance, transactions and security.

Level of Study: Graduate

Last four terms offered: 2014 Spring Term, 2012 Spring Term, 2009 Spring Term, 2007 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206350>)

COSC 6355 Mobile Computing (3 credits)

Focuses on the fundamentals of mobile computing, challenges in mobile computing, mobility management and mobile data management. Also focuses on context awareness and wireless communications, ubiquity of wireless communication technologies and standards, seamless access network services and resources from anywhere, at anytime, middleware for mobile computing, operation systems, programming languages, network protocols and security aspects of mobile computing. Explores concepts in sensor networks, including operating systems, programming languages, network protocols and programming models.

Prerequisite: COSC 2100 or equiv.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2021 Summer Term, 2020 Summer Term, 2019 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206355>)

COSC 6360 Enterprise Architecture (3 credits)

Focuses on key topics and concepts that represent enterprise architecture (EA). Addresses the people, process and technology elements of EA from both a business and technical perspective. Explores the background, history, planning, governing, maintaining and common methodologies associated with EA. Prototypes some of the technology used in enterprises today to gain a better understanding of how information is represented, systems are integrated and standards are put into practice.

Level of Study: Graduate

Last four terms offered: 2021 Fall Term, 2020 Fall Term, 2019 Fall Term, 2018 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206360>)

COSC 6375 Web Technologies (3 credits)

Exposes students to design and architectural principles in developing web applications. Focuses on the client side, middleware and service layer of web applications. Topics range from HTML, JavaScript, JQuery, Java Servlets, MVC Design Pattern, Java Spring MVC, SQL, JDBC, Hibernate, AngularJS and Cloud Computing.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206375>)

COSC 6380 Big Data Systems (3 credits)

Focuses on newer, advanced database techniques in the areas of Big Data, NoSQL, Hadoop and Apache Spark. Covers main NoSQL data management topics such as document databases, key-value stores and graph databases.

Prerequisite: Database Systems or equiv.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206380>)

COSC 6390 Professional Seminar in Computing (1 credits)

Topic to be chosen each term from among issues important to all professionals in computing. All students specifically in the computing program are expected to participate for the fall and spring terms, and one of the two summer terms. S/U grade assessment.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206390>)

COSC 6500 Foundations of Computing (7 credits)

Presents the breadth and current status of computer science in our computerized society and the fundamentals of professional knowledge, skills and abilities. Foundational topics are intermixed with study of software development which include an introduction to abstraction, algorithmic thinking, simulation and testing for computer-based problem solving using higher-level programming languages. Algorithm analysis and computational complexity are presented in the context of considering data structures, algorithms and alternatives. Students program exercises using graphical user interfaces, data base connections, parallel computing and interfaces to the World Wide Web (WWW). Experience includes using an interactive development environment, studying software development methodology, and testing code, basic system administration, computer networking and operating system configuration.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206500>)

COSC 6510 Data Intelligence (3 credits)

Foundational topics in data intelligence. Includes properties and benefits for data intelligence and methodology for the development of data intelligence solutions. Examines technology employed for managing data and creating visualizations and dashboards. Topics include developing a business case, evaluating performance and managing data. Presents overview of data architectures commonly used in data intelligence solutions and includes exercises using common techniques for prediction and time series analysis.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206510>)

COSC 6520 Data Analytics (3 credits)

Foundational topics in the analysis of data. Includes methodology for the development of data analytics systems. Examines technology employed for data analytics in a variety of industry segments and the benefits derived from data analytics. Foundations of text and data mining techniques commonly used for classification, clustering and prediction. Students are presented techniques for developing a business case, evaluating predictive performance and managing data. Includes exercises using analytic technology and a project to apply analytics to a customer application. Students without programming experience are advised to complete COSC 6510 Data Intelligence before attempting COSC 6520.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206520>)

COSC 6530 Concepts of Data Warehousing (3 credits)

Provides an introduction to data warehouse design. Reviews topics in data modeling, database design and database access. Data warehouse planning, design, implementation and administration. The role of data warehouse in supporting decision support systems (DSS), business intelligence and business analytics.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206530>)

COSC 6550 Introduction to Cybersecurity (3 credits)

Provides an introduction to cybersecurity threats, methods and security techniques. Foundations of various cybersecurity frameworks and methods for applying them to different types of organizations. Includes cyber threat environment, along with methods, tools and techniques that can help mitigate vulnerabilities and reduce risks to an organization.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206550>)

COSC 6560 Principles of Service Management and System Administration (3 credits)

Introduction to the concepts, principles and practices involved in the operations of secure computing systems. Presents principles of service management and explores how the principles of system administration are derived from concepts of delivering quality services. Lab exercises performing rudimentary tasks of a system administrator using virtual machine environments. Foundation topics include: cryptography, popular operating systems for servers, network configuration, system components, networked systems, host management, user management, configuration of servers and services, incident management, change management, security, monitoring and analysis of operations.

Prerequisite: Basic knowledge of scripting, operating systems and services.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206560>)

COSC 6570 Data at Scale (3 credits)

Combines ideas from parallel databases, distributed systems and programming languages to analyze data at scale. Relevant technologies are introduced and taught in an accessible and inclusive way. Some examples include cloud computing, SQL and NoSQL databases, MapReduce ecosystem, Spark and its contemporaries and graph databases.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206570>)

COSC 6580 Data Security and Privacy (3 credits)

Focuses on fundamental and advanced topics in data security and privacy, including differential privacy, secure multi-party computation, homomorphic encryption, data perturbation, data anonymization, security and privacy in AI, location privacy, and social network privacy. Students also learn practical skills via projects.

Prerequisite: Basic knowledge on statistics, databases, machine learning/data mining, and distributed systems.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206580>)

COSC 6820 Data Ethics (3 credits)

A comprehensive overview of the current ethical and social implications of our data-driven society. A sociotechnical approach is used to unpack issues of privacy and surveillance, algorithmic biases, fairness, transparency, and accountability across various contexts.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2022 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206820>)

COSC 6931 Topics in Computer Science (3 credits)

Topics vary. Students may enroll more than once as the subject matter changes.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Summer Term, 2022 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206931>)

COSC 6960 Seminar in Computer Science (1-3 credits)

Seminar topics selected from one of the various branches of computer science. Specific topics to be announced in the Schedule of Classes.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206960>)

COSC 6964 Practicum for Research and Development in Computing (3-6 credits)

S/U grade assessment. Available only to full-time students. Cons. of the computing dir. of graduate studies or cons. of dept. ch.

Prerequisite: 3.00 MU GPA; must be enrolled in Plan B option of the M.S. in computing program and have completed at least 15 credit hours earned in graduate (6000-level) courses.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206964>)

COSC 6965 Curriculum Integrated Practicum in Computing (1-2 credits)

Involves practical application of the knowledge and skills being studied concurrently, and previously studied, in other course work for computing professionals.

Prerequisite: Admission to the COMP program's integrated practicum option; cons. of the computing dir. of graduate studies or cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2022 Spring Term, 2021 Fall Term, 2021 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206965>)

COSC 6974 Practicum for Research and Development in Computer Science (1-6 credits)

Students in the MS in Computing program should be registering for COSC 6964, Practicum for Research and Development in Computing. S/U grade assessment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Summer Term, 2022 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206974>)

COSC 6975 Curriculum Integrated Practicum in Computer Science (0 credits)

Involves advancing practical research and development of the computer science doctoral program student.; cons. of the co-op chair or grad. chair or dept. chair.

Prerequisite: Admitted to the COSC-PHD prog.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206975>)

COSC 6995 Independent Study in Computer Science (1-6 credits)

An in-depth study on a topic or subject matter usually not offered in the established curriculum with faculty and independent of the classroom setting.

Prerequisite: Cons. of instr. and cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206995>)

COSC 6998 Professional Project in Computer Science (0 credits)

SNC/UNC grade assessment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Fall Term, 2021 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206998>)

COSC 6999 Master's Thesis (1-6 credits)

S/U grade assessment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Fall Term, 2021 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%206999>)

COSC 8995 Independent Study in Computer Science (1-3 credits)

A doctorate level in-depth research on a topic or subject matter usually not offered in the established curriculum with faculty and independent of the classroom setting.

Prerequisite: Cons. of instr. and cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%208995>)

COSC 8999 Doctoral Dissertation (1-12 credits)

S/U grade assessment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%208999>)

COSC 9970 Graduate Standing Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Designated as less than half-time status only, cannot be used in conjunction with other courses, and does not qualify students for financial aid or loan deferment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209970>)

COSC 9974 Graduate Fellowship: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Designated as full-time status. If a student is already registered in other courses full time, this continuation course is not needed.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209974>)

COSC 9975 Graduate Assistant Teaching: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Designated as full-time status. If a student is already registered in other courses full time, this continuation course is not needed.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209975>)

COSC 9976 Graduate Assistant Research: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Designated as full-time status. If a student is already registered in other courses full time, this continuation course is not needed.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2021 Spring Term, 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209976>)

COSC 9987 Doctoral Qualifying Examination Preparation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of less than half-time status. Requires that the student is working less than 12 hours per week toward their doctoral qualifying exam.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2021 Spring Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209987>)

COSC 9988 Doctoral Qualifying Examination Preparation: Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of half-time status. Requires that the student is working more than 12 to less than 20 hours per week toward their doctoral qualifying exam. May be taken in conjunction with credit-bearing or other non-credit courses to result in the status indicated, as deemed appropriate by the department.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2022 Spring Term, 2021 Fall Term, 2021 Spring Term, 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209988>)

COSC 9989 Doctoral Qualifying Examination Preparation: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of full-time status. Requires that the student is working 20 hours or more per week toward their doctoral qualifying exam. May be taken in conjunction with credit-bearing or other non-credit courses to result in the status indicated, as deemed appropriate by the department.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209989>)

COSC 9991 Professional Project Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of less than half-time status. Requires that the student is working less than 12 hours per week on their professional project. Any professional project credits required for the degree should be completed before registering for non-credit Professional Project Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209991>)

COSC 9992 Professional Project Continuation: Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of half-time status. Requires that the student is working more than 12 to less than 20 hours per week on their professional project. Any project credits required for the degree should be completed before registering for non-credit Professional Project Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209992>)

COSC 9993 Professional Project Continuation: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of full-time status. Requires that the student is working 20 hours or more per week on their professional project. Any professional project credits required for the degree should be completed before registering for non-credit Professional Project Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209993>)

COSC 9994 Master's Thesis Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of less than half-time status. Requires that the student is working less than 12 hours per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2020 Summer Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209994>)

COSC 9995 Master's Thesis Continuation: Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of half-time status. Requires that the student is working more than 12 to less than 20 hours per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209995>)

COSC 9996 Master's Thesis Continuation: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of full-time status. Requires that the student is working 20 hours or more per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209996>)

COSC 9997 Doctoral Dissertation Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of less than half-time status. Requires that the student is working less than 12 hours per week on their doctoral dissertation. All 12 dissertation credits required for the degree should be completed before registering for non-credit Doctoral Dissertation Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209997>)

COSC 9998 Doctoral Dissertation Continuation: Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of half-time status. Requires that the student is working more than 12 to less than 20 hours per week on their doctoral dissertation. All 12 dissertation credits required for the degree should be completed before registering for non-credit Doctoral Dissertation Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2021 Fall Term, 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209998>)

COSC 9999 Doctoral Dissertation Continuation: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of full-time status. Requires that the student is working 20 hours or more per week on their doctoral dissertation. All 12 dissertation credits required for the degree should be completed before registering for non-credit Doctoral Dissertation Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Summer Term, 2023 Spring Term, 2022 Fall Term, 2022 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=COSC%209999>)

CRLS 5000 Criminological Theory (3 credits)

Analyzes the nature and consequences of delinquency and crime. Classical and contemporary examinations of criminal behavior. Observes the effects of social interaction, social class, social organization, small groups and other variables on crime patterns and efforts to cope with crime. Explores the relationship of criminological theory and social policy issues.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205000>)

CRLS 5100 The Death Penalty in Sociolegal Context (3 credits)

Critically explores the philosophical, historical and procedural issues that have attended the administration of judicial killings in the United States. Attends to principles of capital sentencing jurisprudence in comparison with empirical analysis from social scientists, legal scholars, journalists and practitioners.

Level of Study: Graduate

Last four terms offered: 2017 Spring Term, 2015 Fall Term, 2014 Fall Term, 2012 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205100>)

CRLS 5180 Empathy, Crime and Justice (3 credits)

Social justice approach to the study of empathy as it relates to crime and justice. Explores and cultivates various modes of empathic knowing, specifically as these relate to criminal defendants, victims of crime, and various actors in the criminal justice system.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205180>)

CRLS 5300 Transformative Justice (3 credits)

Uses transformative justice as a political framework for responding to violence, harm and abuse and aims to transform the conditions that enabled that harm. Addresses the foundations of transformative justice through a lens of peacemaking and nonviolence. Uses intersectional theories and analyses of violence and accountability; considers abolition as a visionary process of dismantling carceral systems and building structures and relationships to replace it.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205300>)

CRLS 5350 Neighborhoods and Crime (3 credits)

Survey of theoretical and empirical literature on the role that neighborhood characteristics play in crime. Examines the utility of crime prevention strategies for reducing neighborhood crime rates. Develops the skills necessary to investigate Milwaukee neighborhood crime patterns. Students create and deliver professional presentations and technical reports.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2022 Spring Term, 2021 Fall Term, 2021 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205350>)

CRLS 5360 Crime Mapping (3 credits)

Technological introduction to the basic functionality of ESRI's ArcGIS for mapping and analyzing crime data. Students learn skills to create crime maps, analyze crime patterns, and develop a solid base upon which to build further expertise in geographic information system (GIS) software and spatial analysis.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2021 Fall Term, 2021 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205360>)

CRLS 5400 Criminal Law and Procedure (3 credits)

Studies criminal substantive law; constitutional limits and principles of criminal law and liability; defenses to criminal liability; definitions and classification; criminal procedure of crimes; constitutional limits and protections of criminal procedure.

Level of Study: Graduate

Last four terms offered: 2018 Fall Term, 2018 Spring Term, 2017 Fall Term, 2017 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205400>)

CRLS 5600 Evidence (3 credits)

Basic principles of the law of evidence. Presentation of oral and demonstrative evidence in the trial process. The quantum of proof in criminal proceedings.

Level of Study: Graduate

Last four terms offered: 2016 Fall Term, 2016 Spring Term, 2015 Spring Term, 2014 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205600>)

CRLS 5640 Family Violence and Public Intervention (3 credits)

Analysis of maltreatment of children, youth, spouses, and seniors within the family. Examination of causes and intervention methods emphasizing the response of actors and government agencies.

Level of Study: Graduate

Last four terms offered: 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205640>)

CRLS 5660 Criminal Violence in America (3 credits)

Analysis of violent crime in American society and ways in which the criminal justice system responds to it. Examination of the causes of violent crime, its prevention, treatment and public policy ramifications. Historical and contemporary understanding of the significance of violence in American culture. Critical evaluation of methods utilized to deal with violent offenders.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205660>)

CRLS 5700 Ethics in Criminal Justice (3 credits)

Overview of prevailing ethical controversies confronting the process and agencies of contemporary criminal justice. Attends to concrete ethical issues and dilemmas encountered regularly by participants in the major components of the criminal justice system. Analyzes the emerging trend of evidence-based criminal justice policy reliant on criminal justice analytics, algorithms, and predictive statistical modeling.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205700>)

CRLS 5931 Topics in Criminology and Law (3 credits)

Lectures and discussions in a broad area which, because of its topicality, is not the subject of a regular course. The special topics will be designated in the Schedule of Classes. May be taken a maximum of two times.

Level of Study: Graduate

Last four terms offered: 2021 Spring Term, 2012 Spring Term, 2010 Fall Term, 2010 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%205931>)

CRLS 6100 Advanced Social Statistics (3 credits)

An advanced statistics course examining multivariate regression models for the social sciences and common statistical software packages including STATA. Builds upon basic mathematical functions for advanced-level statistics. Develops advanced skills in multivariate linear OLS, GLS and nonlinear models with categorical dependent variables. Examines techniques in regression diagnostics and tests of robustness. Concludes with model specification of two-way interaction effects.

Prerequisite: SOCI 2060 or equiv.

Level of Study: Graduate

Last four terms offered: 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%206100>)

CRLS 6200 Introduction to Geographic Information Systems (GIS) (3 credits)

An introduction to Geographic Information Systems (GIS). Designed to provide students with a working knowledge of GIS. Gives instruction on how to use GIS analytical tools to expand and enhance the understanding of spatially referenced phenomena. Examines foundational concepts behind Geographic Information Science (GIScience) to properly use GIS analytical tools. Incorporates diverse learning activities including lectures, PowerPoint presentations, instructor-led skills training and student practice sessions.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%206200>)

CRLS 6970 Practicum Preparation (1 credits)

Develop connections to field practicum placement agencies and prepare for required practicum experience. Guided development of relationship and written agreement with community-based practicum placement agency, drawing upon knowledge from student's previous course work. Group and one-on-one meetings discussing project plans and developing agreements. Grade assessed on the basis of research questions, project design and final written agreement.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%206970>)

CRLS 6975 Criminal Justice Data Analytics Practicum (3 credits)

Serves as the CJDA capstone experience. Practical application of knowledge and skills in a crime and intelligence/crime analysis unit of a criminal justice agency. Topic determined by the instructor in conjunction with a community partner from a criminal justice-related institution, agency or organization within the Milwaukee community. Designed to afford graduate students the opportunity to use their skills to solve to an organizational problem and to cultivate relationships with community partners.

Prerequisite: CRLS 6100 and admitted to the CJDA program.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%206975>)

CRLS 6995 Independent Study in Criminology and Law Studies (1-3 credits)

Provides opportunities to investigate and study areas of interest through readings, research, field experience, projects, and/or other educational activities under the direction of a faculty adviser.

Prerequisite: Cons. of prog. dir.

Level of Study: Graduate

Last four terms offered: 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=CRLS%206995>)