



Universidad Politécnica de Puerto Rico  
 Graduate School  
 Master Program in Computer Science



M.S.C.S. (Thesis Option)	M.C.S. (Non-Thesis Option)
Core Courses: 15 credit-hours Area of Interest: 9 credit-hours Electives: 3 credit-hours Thesis: 6 credit-hours Total: 33 credit-hours	Core Courses: 15 credit-hours Area of Interest: 9 credit-hours Electives: 12 credit-hours Project: 3 credit-hours Total: 39 credit-hours

**IT Management and Information Assurance  
 (ITMIA)  
 Area of Interest**

**Core Courses** (3 credits each)

(Core Courses are required for both Thesis and Non-Thesis Option)

- CECS 6010 - Advanced Design and Analysis of Algorithm
- CECS 6030 – Computational Theory
- CECS 6230 – IT Operations
- CECS 6430 – Advanced Software Architecture
- CECS 6750 – Software Testing

**Area of Interest Courses** (3 credits each)

(These courses are required for both Thesis and Non-Thesis Option)

- CECS 7230 – Network Security
- CECS 7235 – Computer Forensics
- CECS 7570 – Computer Security

**Elective Courses** (3 credits each)

Student must complete the remaining number of required credit-hours by selecting courses from this list of electives. Thesis Option should choose one (1) course. Non-Thesis Option should choose four (4) courses. In addition to the current list of elective courses, the student could select as an elective any course with GMP code that is not specified in this list.

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|--|---|
| <ul style="list-style-type: none"> <li>CECS 6005 – Principles of Information Security</li> <li>CECS 6015 – IT Auditing and Secure Operations</li> <li>CECS 6035 – Contingency Planning</li> <li>CECS 6045 – Law, Investigation and Ethics</li> <li>CECS 6120 – Computer Architecture</li> <li>CECS 6130 – Data Communication Networks</li> <li>CECS 6150 – Object Oriented Design (OOD)</li> <li>CECS 6240 – Technology-Based Start-Up</li> <li>CECS 6510 – Software Engineering I</li> <li>CECS 6715 – E-Commerce and Web Inf. Systems</li> <li>CECS 6760 – Internet Engineering I</li> </ul> | <ul style="list-style-type: none"> <li>CECS 6824A – Special Topics in ITMIA</li> <li>CECS 6824B – Special Topics in KDDM</li> <li>CECS 6824C – Special Topics in CGGT</li> <li>CECS 7130 – Advanced Computer Networks</li> <li>CECS 7240 – Database Security</li> <li>CECS 7410 – Parallel and Distributed Processing</li> <li>CECS 7420 – Modeling and Simulation</li> <li>CECS 7510 – Software Engineering II</li> <li>CECS 7520 – Human-Computer Interaction (HCI)</li> <li>CECS 7760 – Internet Engineering II</li> </ul> |
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Note: KDDM or CGGT Specialization Area Courses can be Electives for ITMIA area

**Thesis**

- CECS 7980 – Thesis (6 credits)
- CECS 7990 -- Thesis Extension (0 credits)

**Project**

- CECS 7950 -- Project in ITMIA (3 credits)
- CECS 7951 – Project Extension

Contact Information:  
 Graduate School

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 Phone: 787-622-8000 Ext. 686



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**Knowledge Discovery and Data Mining  
(KDDM)  
Area of Interest**

**Core Courses** (3 credits each)

(Core Courses are required for both Thesis and Non-Thesis Option)

- CECS 6010 – Advanced Design and Analysis of Algorithm
- CECS 6030 – Computational Theory
- CECS 6230 – IT Operations
- CECS 6430 – Advanced Software Architecture
- CECS 6750 – Software Testing

**Area of Interest Courses** (3 credits each)

(These courses are required for both Thesis and Non-Thesis Option)

- CECS 6605 – Data Base Management Systems
- CECS 7530 – Data Mining and Data Warehousing
- CECS 7550 – Artificial Intelligence

**Elective Courses** (3 credits each)

Student must complete the remaining number of required credit-hours by selecting courses from this list of electives. Thesis Option should choose one (1) course. Non-Thesis Option should choose four (4) courses. In addition to the current list of elective courses, the student could select as an elective any course with GMP code that is not specified in this list.

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|--|---|

Note: ITMIA or CGGT Area Courses can be Electives for KDDM area

**Thesis**

- CECS 7980 – Thesis (6 credits)
- CECS 7990 -- Thesis Extension (0 credits)

**Project**

- CECS 7950 -- Project in KDDM (3 credits)
- CECS 7951 – Project Extension

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**Computer Graphics & Game Technology  
(CGGT)  
Area of Interest**

**Core Courses** (3 credits each)

(Core Courses are required for both Thesis and Non-Thesis Option)

- CECS 6010 - Advanced Design and Analysis of Algorithm
- CECS 6030 – Computational Theory
- CECS 6230 – IT Operations
- CECS 6460 – Advanced Software Architecture
- CECS 6750 – Software Testing

**Area of Interest Courses** (3 credits each)

(These courses are required for both Thesis and Non-Thesis Option)

- CECS 7010 – Computer Graphics
- CECS 7020 – Advanced Computer Graphics
- CECS 7550 – Artificial Intelligence

**Elective Courses** (3 credits each)

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|---|---|

Note: [KDDM or ITMIA Specialization Area Courses can be Electives for CGGT area](#)

**Thesis**

- CECS 7980 – Thesis (6 credits)
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**Project**

- CECS 7950 -- Project in CGGT (3 credits)
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