



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.

- CECS 6005 – Principles of Information Systems
- CECS 6035 – Contingency Planning
- CECS 6015 – IT Auditing and Secure Operations
- CECS 6045 – Law, Investigation and Ethics
- CECS 6120 – Computer Architecture
- CECS 6150 – Object Oriented Design (OOD)
- CECS 6240 – Technology-Based Start-Up
- CECS 6510 – Software Engineering I
- CECS 6715 – E-Commerce and Web Inf. Systems
- CECS 6760 – Internet Engineering I

- CECS 6824A – Special Topics in ITMIA
- CECS 6824B – Special Topics in KDDM
- CECS 6824C – Special Topics in CGGT
- CECS 7240 – Database Security
- CECS 7510 – Software Engineering II
- CECS 7760 – Internet Engineering II
- CECS 7130 – Advanced Computer Networks
- CECS 7410 – Parallel and Distributed Processing
- CECS 7420 – Modeling and Simulation
- CECS 7520 – Human-Computer Interaction (HCI)
- EE 6130 – Data Communication Networks

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



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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.

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| <ul style="list-style-type: none"> CECS 6120 - Computer Architecture CECS 6150 - Object Oriented Design (OOD) CECS 6510 - Software Engineering I CECS 6715 - E-Commerce and Web Inf. Systems CECS 6760 - Internet Engineering I CECS 6824A - Special Topics in ITMIA CECS 6824B - Special Topics in KDDM | <ul style="list-style-type: none"> CECS 6824C - Special Topics in CGGT CECS 7240 - Database Security CECS 7510 - Software Engineering II CECS 7760 - Internet Engineering II CECS 7130 - Advanced Computer Networks CECS 7410 - Parallel and Distributed Processing CECS 7420 - Modeling and Simulation CECS 7520 - Human-Computer Interaction (HCI) |
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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



Polytechnic University of Puerto Rico
 Graduate School
 Master Program in Computer Science



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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)

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.

- | | |
|--|---|
| <ul style="list-style-type: none"> CCECS 6120 – Computer Architecture CECS 6150 – Object Oriented Design (OOD) CECS 6510 – Software Engineering I CECS 6715 – E-Commerce and Web Inf. Systems CECS 6760 – Internet Engineering I CECS 6824A – Special Topics in ITMIA CECS 6824B – Special Topics in KDDM | <ul style="list-style-type: none"> CECS 6824C – Special Topics in CGGT CECS 7510 – Software Engineering II CECS 7760 – Internet Engineering II CECS 7130 – Advanced Computer Networks CECS 7410 – Parallel and Distributed Processing CECS 7420 – Modeling and Simulation CECS 7520 – Human-Computer Interaction (HCI) |
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Note: KDDM or ITMIA Specialization Area Courses can be Electives for CGGT area

Thesis

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

Project

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