

# Master Student Guidelines



**VCU**

College of Engineering

# MS Requirements

- Non-thesis option
  - 30 credits (10 courses)
- Thesis option
  - 21 credits (7 courses)
  - 9 credits of Directed Research
  - You will need to write and defend a Thesis based on your research results
  - Your advisor will form an advisory committee in which you will defend
- Courses are divided into three Foundational Areas
  - Theory
  - Systems
  - Applied

>= 50 of your courses must be at the 600 level

## Non-thesis option <sup>1</sup>

| Course  | Title   | Hours     |
|---|---|-----------|
| Theory foundational area  |   |           |
| <a href="#">CMSC 501</a>  | Advanced Algorithms   | 3         |
| Select at least one course from the following:                                  |   |           |
| <a href="#">CMSC 510</a>  | Regularization Methods for Machine Learning                 |           |
| <a href="#">CMSC 512</a>  | Advanced Social Network Analysis and Security               |           |
| <a href="#">CMSC 526</a>  | Theory of Programming Languages                             |           |
| <a href="#">CMSC 591</a>  | Topics in Computer Science <sup>2</sup>                     |           |
| <a href="#">CMSC 601</a>  | Convex Optimization   |           |
| <a href="#">CMSC 620</a>  | Applied Cryptography  |           |
| <a href="#">CMSC 621</a>  | Theory of Computation                                       |           |
| <a href="#">CMSC 630</a>  | Image Analysis  |           |
| <a href="#">CMSC 678</a>  | Statistical Learning and Fuzzy Logic Algorithms             |           |
| <a href="#">CMSC 691</a>  | Special Topics in Computer Science <sup>2</sup>             |           |
| Systems foundational area   |   |           |
| Select at least two of the following:   |   |           |
| <a href="#">CMSC 502</a>  | Parallel Algorithms   |           |
| <a href="#">CMSC 506/EGRE 526</a>   | Computer Networks and Communications                        |           |
| <a href="#">CMSC 525</a>  | Introduction to Software Analysis, Testing and Verification |           |
| <a href="#">CMSC 591</a>  | Topics in Computer Science <sup>2</sup>                     |           |
| <a href="#">CMSC 603</a>  | High Performance Distributed Systems                        |           |
| <a href="#">CMSC 605</a>  | Advanced Computer Architecture                              |           |
| <a href="#">CMSC 608</a>  | Advanced Database   |           |
| <a href="#">CMSC 615</a>  | Cryptocurrency and Blockchain Techniques                    |           |
| <a href="#">CMSC 618</a>  | Database and Application Security                           |           |
| <a href="#">CMSC 622</a>  | Network and Operating Systems Security                      |           |
| <a href="#">CMSC 628</a>  | Mobile Networks: Applications, Modeling and Analysis        |           |
| <a href="#">CMSC 691</a>  | Special Topics in Computer Science <sup>2</sup>             |           |
| Applied computer science foundational area                                      |   |           |
| Select at least two of the following:   |   |           |
| <a href="#">CMSC 516</a>  | Advanced Natural Language Processing                        |           |
| <a href="#">CMSC 591</a>  | Topics in Computer Science <sup>2</sup>                     |           |
| CMSC 609  |   |           |
| <a href="#">CMSC 610</a>  | Algorithmic Foundations of Bioinformatics                   |           |
| <a href="#">CMSC 612</a>  | Game Theory and Security                                    |           |
| <a href="#">CMSC 623</a>  | Cloud Computing   |           |
| <a href="#">CMSC 635</a>  | Knowledge Discovery and Data Mining                         |           |
| <a href="#">CMSC 636</a>  | Artificial Neural Networks and Deep Learning                |           |
| <a href="#">CMSC 691</a>  | Special Topics in Computer Science <sup>2</sup>             |           |
| Additional course work  |   |           |
| Select 12 additional credit hours of didactic coursework with adviser approval. |   | 2         |
| <b>Total Hours</b>  |   | <b>30</b> |

# Thesis MS Requirements

- 21 credits (7 courses)
- 9 credits of Directed Research
- **Complete didactic courses**
- Plan of study
- Thesis Committee
- Thesis Defense

>= 50 of your courses  
must be at the 600 level

# Thesis MS Requirements

- The student's plan of study constitutes a tentative list of courses that are taken as part of the graduate degree program. A plan of study is dynamic and can be revised as the need arises. The student's advisor and Advisory Committee must approve the plan of study (form M1 or D1).
- Complete didactic courses
- **Plan of study**
- Thesis Committee
- Thesis Defense

**FORM**



[Plan of Study for the Master of Science Degree](https://egr.vcu.edu/academics/student-services/resources-forms/)

<https://egr.vcu.edu/academics/student-services/resources-forms/>

# Thesis MS Requirements

- Committee consists of 4 faculty members, including the primary Research Advisor.
  - 2 committee members must be from the CS graduate program
  - 1 committee members from outside; whenever possible, one of the committee members should be from outside of VCU.
- Complete didactic courses
- Plan of study
- **Thesis Committee**
- Thesis Defense

**FORM**



[Appointment of Master of Science for Thesis Advisory Committee](https://egr.vcu.edu/academics/student-services/resources-forms/)

<https://egr.vcu.edu/academics/student-services/resources-forms/>

# Thesis MS Requirements

- Typically, this happens during CS Seminar Fridays at noon
- Coordinate with seminar coordinators:
  - Dr. Damevski [kdamevski@vcu.edu](mailto:kdamevski@vcu.edu)
  - Dr. Bulut [ebulut@vcu.edu](mailto:ebulut@vcu.edu)
- Complete didactic courses
- Plan of study
- Thesis Committee
- **Thesis Defense**

**Ensure to give them a minimum of three months notice**

# Thesis MS Requirements

- **Fill out forms!!**
  - **Before the defense**
    - Form: Notice of final defense
- Complete didactic courses
- Plan of study
- Thesis Committee
- **Thesis Defense**

Notice of final defense examination for degree of Master of Science and Doctor of Philosophy

- Form: Admission to Candidacy

Admission to Master's or Doctoral Degree Candidacy

- **After the proposal defense**
  - Form: ETD Approval Form

ETD Approval Form

<https://egr.vcu.edu/academics/student-services/resources-forms/>