Naval Postgraduate School  
Cyber Academic Group  
Graduation Checklist for MSCS/MSCS/MSES/MSEE Degrees  
6208P Subspecialty Code  
(Revised: WINTER AY18)

Name/Rank/Service: ___________________________________________________________
Month/Year Enrolled: __________________________________________________________
Projected Graduation Date: ______________________________________________________
CSO Track: Operational  Computational  Electrical Engineering  Engineering Science

1. Thesis/Capstone: proposal must be approved by end the 3rd or 4th academic quarter (not counting Qtr-0), prior to taking any CS0810 thesis research blocks.
   
   Title: ________________________________________________________________________

   Advisor(s): ____________________________________________________________________
   Co-Advisor / Second Reader (circle one): ___________________________________________
   Joint Thesis Members, if applicable: _______________________________________________

2. Core Courses: all of the courses below must be completed or validated to graduate. Students must submit by the end of their 3rd academic quarter a plan for completing all core courses not yet taken as part of their Track selection, and also populate their course matrix in Python.

<table>
<thead>
<tr>
<th>Completed</th>
<th>Planned Qtr</th>
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<tbody>
<tr>
<td>CS3600 Introduction to Computer Security (4-2) (Fall/Win/Spr/Sum)</td>
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<tr>
<td>CS3040 Low-Level Programming I (4-2) (Fall/Spr)</td>
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<tr>
<td>EC3730 Cyber Network &amp; Physical Infrastructures (3-2) (Fall/Spr)</td>
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<tr>
<td>CY3000 Intro to Cyber Systems &amp; Operations (3-0) (Fall/Spr)</td>
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<tr>
<td>EC3760 Information Operations Systems (3-2) (Win/Sum)</td>
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<tr>
<td>CS3690 Network Security (4-1) (Fall/Spr)</td>
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<td>CS3250 Intro to Cyber Physical Systems (3-2) (Win/Sum)</td>
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<td>CY3800 Topics in Signal Operations (3-0) (Win/Sum)</td>
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<td>EC3740 Reverse Engineering (3-2) (Win/Sum)</td>
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<tr>
<td>CS4900 Technology &amp; Transformation (2-0) (Win/Sum) (OPS/CS only)</td>
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<tr>
<td>CS4901 CSO Research Methods (1-0) (Fall/Spr)</td>
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<tr>
<td>CY4400 Cyber Mission Planning w/Capstone (3-2)</td>
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3. Track: All CSO students will select one of the following Tracks. Circle choice above, and initial each completed course or annotate when it will be taken. See the NPS catalog for prerequisites and offering quarters for all courses listed below.

- **COMPUTATIONAL TRACK (CSO-CS):** (PO: LT Tye Wylkynsone AA: Karen Burke)

  Students must take the following CS Degree Requirements:
  - CS3101 Theory of Formal Languages and Automata (4-2) (Fall/Spr)
  - CS3310 Artificial Intelligence (4-1) (Fall/Spr)
  - CS3502 Computer Communications & Networks (4-2) (Win/Sum)
  - CS3600 (is part of the CSO/326 Core)

  Three track courses are required:
  - OS3307 Modeling Practices for Computing (4-1) (Fall/Spr)
  - CS3070 Operating Systems (3-2) (Win/Sum)
  - CS4315 Learning Systems and Data Mining (3-1) (Fall/Spr)

  Finally, one concentration area of four courses will be taken:

  **Network Operations:**
  - CS4552 Network Design & Programming (3-3)
  - CS4554 Network Modeling & Analysis (4-0)
  - CS4558 Network Traffic Analysis (3-2)
  - CS3140 / CS4648 / CS4678 *(pre-req: CS3140)* (Elect one from Offensive Cyber Operations concentration)

  **Defensive Cyber Operations:**
  - CS4558 Network Traffic Analysis (3-2)
  - CS4677 Computer Forensics (3-2)
  - CS4684 Cyber Security Incident Response & Recovery (3-2)
  - CS3140 / CS4648 / CS4678 *(pre-req: CS3140)*
  - (Elect one from Offensive Cyber Operations concentration)

  **Offensive Cyber Operations:**
  - CS3140 Low-Level Programming II (3-2)
  - CS4678 Advanced Cyber Vulnerability Assessment (4-2)
  - CS4648 Advanced Cyber Munitions (3-2)
  - 1 Cyber Operations or Computation Elective as approved by Academic Team

To wit: ______________
NPS Graduation Checklist for MSCS Degree

• OPERATIONS TRACK (CSO-OPS): (PO: LCDR Brian Judy AA: Duane Davis)

Students must take the following CSO Degree Requirements:

___ CY4410 Cyber Policy and Strategy (3-0)
___ CY4700 Applied Defensive Cyber Operations (3-3)
___ CY4710 Adversarial Cyber Operations (3-3)

In addition, the following courses are required plus one (1) elective:

___ OS3307 Modeling Practices for Computing (4-1) (Fall/Spr)
___ CS3070 Operating Systems (3-2) (Win/Sum)
___ CS3502 Computer Communications & Networks (4-2) (Win/Sum)
___ CY3650 Cyber Data Management and Analytics (4-0)
___ CS4558 Network Traffic Analysis (3-2)
___ EC4765 Cyber Warfare (3-2)
___ 1 additional Operations Track Elective as approved by Academic Team

To wit:____________

• ELECTRICAL ENGINEERING TRACK (MSEE):

• (PO: LCDR(sel) Bryan Martin AA: Preetha Thulasiraman)

Students may make the following EE Core change:

___ EC3700 Joint Network-Enabled Warfare (3-2) in lieu of CY3800, provided:
1) possess an undergraduate ECE degree that is ABET accredited
2) take EC2650 as a refresher

In addition, the following courses are required plus four (4) electives:

___ EC3710 Computer Communications Methods (3-2)
___ EC4730 Covert Communications (3-2)
___ EC4745 Mobile Ad Hoc Wireless Networks (3-2)
___ EC4765 Cyber Warfare (3-2)
___ EC4770 Wireless Communications Network Security (3-2)
___ EC3000 Introduction to Graduate Research Seminar [P/F] (1-0)
(in lieu of CS4900)

• Four (4) Engineering track electives approved by the Academic team

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NPS Graduation Checklist for MSCS Degree

**ENGINEERING SCIENCES TRACK (MSES):**

(PO: LCDR (sel) Bryan Martin AA: Preetha Thulasiraman)

The following courses are required for the track plus six (6) electives:

- _EC3800_ (Part of Core)
- _EC4730_ Covert Communications (3-2)
- _EC4765_ Cyber Warfare (3-2)
- _EC4770_ Wireless Communications Network Security (3-2)
- _EC3000_ Introduction to Graduate Research Seminar [P/F] (1-0)
  (in lieu of CS4900)

Six (6) Engineering track electives approved by the Academic team

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4. Additional Military Requirements:

All U.S. Navy & Marine Corps students

- _NW3230_ Strategy & War (4-2)

All U.S. Navy Line Officer students *(except Engineering Duty Officers)*

- _NW3275_ Joint Maritime Operations Part 1 (4-0)
- _NW3276_ Joint Maritime Operations Part 2 (2-2)
- _NW3285_ Theater Security Decision Making (4-0)

All U.S. Marine Corps & Army students

- _MN3331_ Principles of System Acquisition & Program Management (5-1)

*Recommended for all Marine Corps students; may be dropped only with concurrence of the Senior Marine Office.*

International Military students *(as required by the International Office)*

- _IT1500_ Informational Program Seminar for International Officers (4-0)
- _IT1600_ Communication Skills for International Officers (3-0)
- _IT1700_ Academic Writing for International Officers (2-0)

5. Credit Hour Requirements:

- 40 graduate credit hours at 3000-4000 level, with at least 12 of those hours at 4000 level.
- 28 of the 40 graduate credit hours must be in CS, MOVES, SW courses.

**No more than 4 (OPS/CS) or 5 (EE/ES) sections of CS0810 may be taken, and no more than 2 sections may be taken during a given quarter.**
6. **Student Certification**: I certify that the information on this form is correct, and that I have completed all requirements for the MSCS degree, with any course deviations from my Specialization sequence listed below (must be approved by Academic Advisor).

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Signature: ____________________________ Date: ___________

7. **Academic Advisor approval**: Specialization courses above are approved.

Signature: ____________________________ Date: ___________

8. **Program Officer final review**: Checklist complete.

Signature: ____________________________ Date: ___________