***Department of Electrical and Computer Engineering***

***Checklist for the MEng(EE) Degree***

 This checklist is provided to document the completion of the degree requirements for the program leading to the Master of Engineering (with Major in Electrical Engineering) at NPS.

**Student name (please PRINT CLEARLY):** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

**email:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Month/year enrolled:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; **Graduation date:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**I certify that 1) the information contained on this form is correct; and 2) courses included in this checklist are not included in the requirements towards another Master degree.**

**Student :**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; **Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**We certify that this student has met the minimum requirements for the MEng(EE) degree.**

**Signatures:**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Academic Associate, Date ECE Assoc. Chair for Students, Date**

**ECE Department**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Program Officer/Manager, Date** **ECE Department Chair, Date**

**List of available ECE courses**

***Communications Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3500 | Analysis of Random Signals | (4-0) |
|  | EC 3510 | Communications Engineering | (3-1) |
|  |  |  |  |
|  | EC 4500 | Advanced Topics in Communications | (3-0) |
|  | EC 4510 | Cellular Communications | (3-0) |
|  | EC 4530 | Soft Radios  | (3-2) |
|  | EC 4550 | Digital Communications | (4-0) |
|  | EC 4560 | Spread Spectrum Communications  | (3-2) |
|  | EC 4570 | Signal Detection and Estimation | (4-0) |
|  | EC 4580 | Error Correction Coding  | (4-0) |
|  | EC 4590 | Communications Satellite Systems Engineering | (3-0) |
|  | EC 4580 | Coding and Information Theory | (4-0) |
|  | EC 4590 | Communications Satellite Systems Engineering | (3-0) |

***Computer Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3800 | Microprocessor Based System Design | (3-2) |
|  | EC 3820 | Computer Systems | (3-1) |
|  | EC 3830 | Digital Computer Design Methodology | (3-2) |
|  | EC 3840 | Introduction to Computer Architecture | (3-2) |

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| --- | --- | --- | --- |
|  | EC 4800 | Advanced Topics in Computer Engineering | (3-0) |
|  | EC 4810 | Fault Tolerant Computing | (3-2) |
|  | EC 4820 | Advanced Computer Architecture | (3-1) |
|  | EC 4830 | Digital Computer Design | (3-1) |
|  | EC 4870 | VLSI Systems Design | (3-2) |

***Cyber Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3730 | Cyber Network & Physical Infrastructures | (3-2) |
|  | EC 3740 | Reverse Engineering in Electronic Syst. | (3-2) |
|  | [EC 3750](http://www.nps.edu/Academics/Schools/GSEAS/Departments/ECE/Handbook/CourseList/ec_courses.html)  | SIGINT Systems I (C) | (3-2) |
|  | EC 3760 | Information Operations Systems(C) | (3-2) |
|  | EC 3795 | Mobile Telecommunication Fundamentals | (3-2) |
|  |  |  |  |
|  | EC 4715 | Cyber System Vulnerabilities & Risk Assessment  | (3-2) |
|  | EC 4730 | Covert Communications  | (3-2) |
|  | EC 4735 | Telecommunications Systems Security  | (3-2) |
|  | EC 4747 | Data Mining in Cyber Applications | (3-2) |
|  | EC 4755 | Network Traffic, Activity Detection, & Tracking  | (3-2) |
|  | EC 4765 | Cyber Warfare(C)  | (3-2) |
|  | EC 4770 | Wireless Communications Network Security  | (3-2) |
|  | EC 4790 | Cyber Architectures & Eng. | (3-2) |
|  | EC 4795 | Wireless Device Security  | (3-2) |

 (c): Classified Course

***Guidance, Control, & Navigation Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3310 | Optimal Estimation: Sensor and Data Association | (3-2) |
|  | EC 3320 | Optimal Control Systems | (3-2) |
|  |  |  |  |
|  | EC 4310 | Robotics Systems | (3-1) |
|  | EC 4320 | Design of Robust Control Systems | (3-2) |
|  | EC 4330 | Navigation, Missile, and Avionics Systems | (3-2) |
|  | EC 4350 | Nonlinear Control Systems | (3-2) |
|  | EC 4330 | Navigation, Missile, and Avionics Systems | (3-2) |
|  | EC 4350 | Nonlinear Control Systems | (3-2) |

***Machine Power Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3110 | Electrical Energy | (3-2) |
|  | EC 3130 | Electrical Machinery Theory | (3-3) |
|  | EC 3150 | Solid State Power Conversion | (3-2) |

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 4130 | Advanced Electrical Machinery Systems | (3-3) |
|  | EC 4150 | Advanced Solid State Power Conversion | (3-2) |

***Network Engineering***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3710 or CS3502 | Computer Communications MethodsorComputer Communication Networks | (3-2)(4-2) |
|  |  |  |  |
|  | EC 4700 | Advanced Topics in Network Eng.  | (3-2) |
|  | EC 4710 | High-Speed Networking | (3-2) |
|  | EC 4725 | Advanced Telecom. Systems Eng. | (3-2) |
|  | EC 4745 | Mobile Ad Hoc Wireless Networking | (3-2) |
|  | EC 4785 | Internet Engineering | (3-2) |

***Sensor Systems Engineering***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3210 | Introduction to Electro-Optical Eng. | (4-1) |
|  | EC 3600 | Antennas & Propagation | (3-2) |
|  | EC 3610 | Microwave Engineering | (3-2) |
|  | EC 3615 | Radar Fundamentals | (3-2) |
|  | EC 3630 | Radiowave Propagation | (3-2) |
|  | EC 3700 | Joint Network-enabled El. Warfare I | (3-2) |

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| --- | --- | --- | --- |
|  | EC 4600 | Advanced Topics in Sensor Systems | (v-v) |
|  | EC 4610 | Radar Systems | (3-2) |
|  | EC 4615 | Advanced Radar | (3-2) |
|  | EC 4630 | RCS Prediction | (3-2) |
|  | EC 4640 | Airborne Radar Mode Processing | (3-2) |
|  | EC4685 | Principles of Electronic Warfare  | (3-2) |

***Signal Processing Systems***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3400 | Digital Signal Processing | (3-2) |
|  | EC 3410 | Discrete-Time Random Signals | (3-2) |
|  | EC 3460 | Machine Learning for Signal Analytics | (3-2) |
|  |  |  |  |
|  | EC 4400 | Advanced Topics in Signal Proc. | (3-0) |
|  | EC 4430 | Multimedia Info & Communications | (3-1) |
|  | EC 4440 | Statistical Digital Signal Processing  | (3-2) |
|  | EC 4450 | Array Signal Processing | (3-2) |
|  | EC 4480 | Image Processing and Recognition | (3-2) |
|  | EC 4910 | DSP for Wireless Communications | (3-2) |

***Solid State Microelectronics***

|  |  |  |  |
| --- | --- | --- | --- |
|  | EC 3200 | Advanced Electronics Engineering | (3-2) |
|  | EC 3220 | Semiconductor Device Technologies | (3-2) |
|  | EC 3230 | Space Power and Radiation Effects | (3-1) |
|  | EC 3240 | Renewable Energy at Military Bases | (3-2) |

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|  | EC 4220 | Introduction to Analog VLSI | (3-2) |
|  | EC 4230 | Reliability Issues for Military Electronics | (3-2) |

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**Non-NPS based transferred courses**

List **non-NPS** based transferred course(s) - include school name, credits (sem/quarter), Academic Council dates of approval for transfer. A maximum of 25% (8 quarter credits) are transferrable, per AC policy 6.6.3.

|  |  |
| --- | --- |
| **Course No.** | **Credit Information (School Name, credits, AC approval date)** |
|  |  |
|  |  |
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**Course credit requirements**

List all graduate courses taken in approved engineering disciplines (including transferred courses). Lab credits count as half credits. **Note:** course credit numbers are periodically re-evaluated and may have changed since you took a course. *Only the credits shown on student transcripts will be counted to satisfy minimum requirements.*

|  |  |  |  |
| --- | --- | --- | --- |
| **3000-level courses** | **Credits (X-X)** | **4000-level courses** | **Credits (X-X)** |
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(a) Total graduate credits in approved1 engineering, mathematics,
 physical science, and/or computer science
 (32 minimum at 3xxx and 4xxx-level, which must be graded, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 & include a minimum of 5 graduate-level graded ECE courses):

 (b) Total credits from (a) at 4000 level: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 (10 minimum, 3 ECE courses minimum, which must be graded)

*1Note: Courses taken in other engineering disciplines require the* ***advanced approval*** *of the ECE Academic Associate & Chair.*