MS Computer Engineering Computer Architecture

Department of ELECTRICAL & COMPUTER ENGINEERING — THE UNIVERSITY OF UTAH

MS Degree Requirements

- ECE 6710 Digital VLSI and ECE 6810 Computer Architecture
- 18+ hours of ECE Courses at the 6000- or 7000- level
- # of CE Restricted Elective List Courses based on Option
  - Coursework (4 Electives) | Project (3 Electives)
- 30+ hours of graduate coursework
- Final Exam Requirement Fulfilled

This is a sample MS Program of Study for a Computer Engineering student that meets the requirements for both the Coursework and Project option. Students who choose a thesis should meet with a graduate advisor to create an individualized plan.

Other Recommended Courses

Fall Semester
ECE 6680 – Elec. Forensic Eng. & Failure Analysis (3.0) *Odd Years*
ECE 6960 – Sp. Topic: Adv. Embedded Systems (3.0) *Periodic*

Spring Semester
ECE 6770 – Advanced Digital VLSI (4.0) *Pre-Req. 6710*
ECE 6910 – Graduate Seminar (1.0) *Spring*
CS 6110 – Software Verification (3.0) ★
CS 6460 – Operating Systems (3.0) ★
CS 7937 – Architecture / VLSI Seminar (1.0)

Final Exam Options

Coursework: Students must receive a B or higher in one of the approved courses to meet the Final Exam Requirement for the MS Non-Thesis degree option.

Project: Up to 6 credits of ECE 6950 – Special Study can count for industry or on-campus research. Students may enroll in ECE 6950 once or more times during Spring, Summer, and/or Fall semesters.

Program Flowchart

	Year 1		Optional	Year 2
	Fall	**Spring**	**Summer**	**Fall**
	ECE 6710 Digital VLSI — 4.0	★ **ECE 6780** Embedded System Design — 4.0	**ECE 6950** Special Study (Project Option Only) — 3-6.0	**ECE 6900** Graduate Seminar I — 1.0
	ECE 6810 Computer Architecture — 3.0	★ **ECE 7810 (3.0)** Adv. Computer Arch. / ★ **CS 6235 (3.0)** *Odd* Prog. Many-Core Arch		**ECE 6773 (3.0)** Solid State Memory / **ECE 6960 (3.0)** *Odd* Adv. Machine Learning
	★ **CS 6350** Machine Learning — 3.0 Fall & Spring	**ECE 6250** Intro to Quantum Computers — 3.0		★ **CS 6150** Advanced Algorithms — 3.0
				★ **CS 6480** Advanced Computer Networks — 3.0
	10 Credits	**10 Credits**		**10 Credits**

Total Credits: 30

Legend: Required | Advanced ECE | Allied | ★ Restricted Elective | Final Exam Option

Department of ELECTRICAL & COMPUTER ENGINEERING
THE UNIVERSITY OF UTAH

MS Computer Engineering
Digital Design

MS Degree Requirements

- ECE 6710 Digital VLSI and ECE 6810 Computer Architecture
- 18+ hours of ECE Courses at the 6000- or 7000- level
- # of CE Restricted Elective List Courses based on Option
  - Coursework (4 Electives) | Project (3 Electives)
- 30+ hours of graduate coursework
- Final Exam Requirement Fulfilled

This is a sample MS Program of Study for a Computer Engineering student that meets the requirements for both the Coursework and Project option. Students who choose a thesis should meet with a graduate advisor to create an individualized plan.

Other Recommended Courses

Fall Semester
ECE 6680 – Elec. Forensic Eng. & Failure Analysis (3.0) *Odd Years*
ECE 6960 – Sp. Topic: Adv. Embedded Systems (3.0) *Periodic*
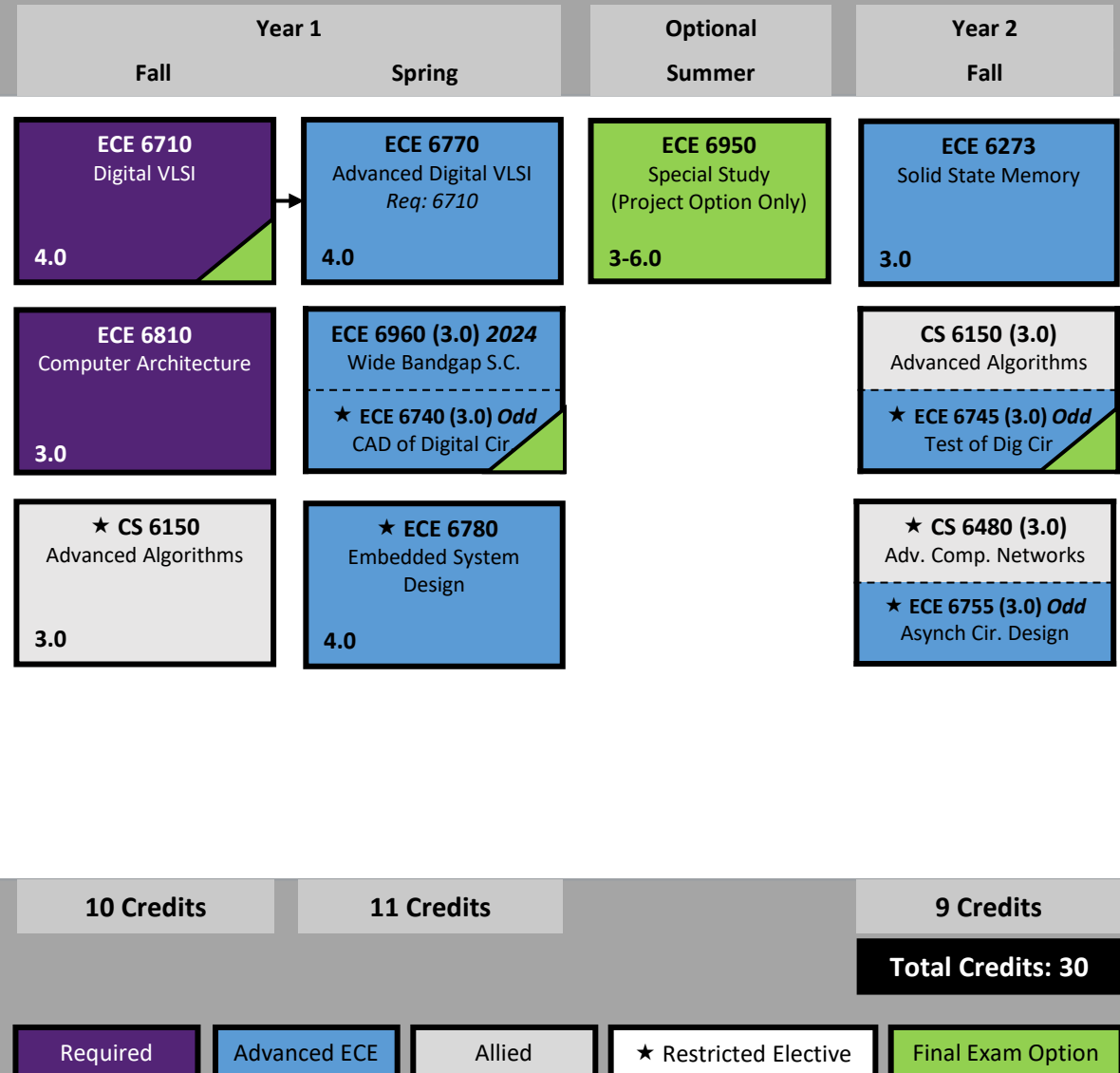CS 6350 – Machine Learning (3.0) *Fall & Spring*

Spring Semester
CS 7937 – Architecture / VLSI Seminar (1.0)
CS 6110 – Software Verification (3.0)
CS 6460 – Operating Systems (3.0)
CS 6235 – Parallel Prog. for Man-Core Arch. (3.0) *Odd Years*

Final Exam Options

Coursework: Students must receive a B or higher in one of the approved courses to meet the Final Exam Requirement for the MS Non-Thesis degree option.

Project: Up to 6 credits of ECE 6950 – Special Study can count for industry or on-campus research. Students may enroll in ECE 6950 once or more times during Spring, Summer, and/or Fall semesters.

Year 1		Optional	Year 2
Fall	**Spring**	**Summer**	**Fall**
ECE 6710 Digital VLSI — 4.0	**ECE 6770** Advanced Digital VLSI *Req: 6710* — 4.0	**ECE 6950** Special Study (Project Option Only) — 3-6.0	**ECE 6273** Solid State Memory — 3.0
ECE 6810 Computer Architecture — 3.0	**ECE 6960 (3.0) 2024** Wide Bandgap S.C. / ★ **ECE 6740 (3.0) Odd** CAD of Digital Cir		**CS 6150 (3.0)** Advanced Algorithms / ★ **ECE 6745 (3.0) Odd** Test of Dig Cir
★ **CS 6150** Advanced Algorithms — 3.0	★ **ECE 6780** Embedded System Design — 4.0		★ **CS 6480 (3.0)** Adv. Comp. Networks / ★ **ECE 6755 (3.0) Odd** Asynch Cir. Design
10 Credits	**11 Credits**		**9 Credits**
			Total Credits: 30

Legend: Required | Advanced ECE | Allied | ★ Restricted Elective | Final Exam Option

Department of ELECTRICAL & COMPUTER ENGINEERING — THE UNIVERSITY OF UTAH

MS Computer Engineering Communications / DSP

MS Degree Requirements

- ECE 6710 Digital VLSI and ECE 6810 Computer Architecture
- 18+ hours of ECE Courses at the 6000- or 7000- level
- # of CE Restricted Elective List Courses based on Option
  - Coursework (4 Electives) | Project (3 Electives)
- 30+ hours of graduate coursework
- Final Exam Requirement Fulfilled

This is a sample MS Program of Study for a Computer Engineering student that meets the requirements for both the Coursework and Project option. Students who choose a thesis should meet with a graduate advisor to create an individualized plan.

Other Recommended Courses

Fall Semester
ECE 6680 – Elec. Forensic Eng. & Failure Analysis (3.0) *Odd Years*
ECE 6960 – Sp. Topic: Adv. Embedded Systems (3.0) *Periodic*
CS 6350 – Machine Learning (3.0) *Fall & Spring*
CS 6150 – Advanced Algorithms (3.0)
Spring Semester
ECE 6770 – Advanced VLSI Design (4.0)
CS 6235 – Parallel Prog. for Many-Core Arch. (3.0) *Odd Years*
CS 6460 – Operating Systems (3.0)

Final Exam Options

Coursework: Students must receive a B or higher in one of the approved courses to meet the Final Exam Requirement for the MS Non-Thesis degree option.

Project: Up to 6 credits of ECE 6950 – Special Study can count for industry or on-campus research. Students may enroll in ECE 6950 once or more times during Spring, Summer, and/or Fall semesters.

	Year 1		Optional	Year 2
	Fall	Spring	Summer	Fall
	ECE 6710 Digital VLSI — 4.0	**ECE 6324** Antenna Theory / ★ **ECE 5520 (3.0)** *Odd* Dig. Comm. Systems	**ECE 6950** Special Study (Project Option Only) 3-6.0	★ **CS 6480** Advanced Computer Networks — 3.0
	ECE 6810 Computer Architecture — 3.0	**ECE 6961 (3.0)** *Even* Fund. Wireless Comm. / ★ **ECE 5325 (3.0)** *Odd* Wireless Comm.		**ECE 6960** Spec. Top.: Neural Data Analysis & Modeling — 3.0
	★ **ECE 6530** Digital Signal Processing — 3.0	**CS 6110** Software Verification — 3.0		**ECE 6532** Digital Image Processing *Req: 6530* — 3.0
		ECE 6960 Special Topics: Graph. Methods of DSP — 1.0		**ECE 6960** Special Topics: Image Analysis Seminar — 1.0
	10 Credits	**10 Credits**		**10 Credits**

Total Credits: 30

Legend: **Required** | **Advanced ECE** | **Allied** | ★ **Restricted Elective** | **Final Exam Option**