

## ECE BS Quarters-to-Semesters Transition Credit Hour Calculations

### Instructions for use of these equations

The following pages are from an appendix to ECE's Q2S proposal, describing how to convert credit hours from quarters to semesters and from semesters to quarters.

Remember that ECE BS students who begin under quarters and end under semesters may choose *either*:

- To graduate meeting quarter requirements with a combination of quarter courses and semester courses

or

- To graduate meeting semester requirements with a combination of quarter courses and semester courses

Further, every student is either in the computer engineering specialization (CES) or in the electrical engineering specialization. (EES)

Thus, to see whether graduating meeting quarter or semester requirements is more advantageous, use the equations on the following pages for both cases (quarter requirements vs semester requirements) for your specialization.

## Attachment #7: Transition Principles – concise form with equations

Definition of variables:

$S$	= semester credit hours
$Q$	= quarter credit hours
$S_{MBS}$	= semester credit hours in a course that counts toward the ABET math and basic science requirement
$Q_{MBS}$	= quarter credit hours in a course that counts toward the ABET math and basic science requirement
$S_{SC}$	= semester credit hours in semesters courses comparable to Selected Core pick list (a quarters program list) courses
$Q_{SC}$	= quarter credit hours in a course from the Selected core pick list
$S_{ECETE}$	= semester credit hours in ECE Technical Elective courses
$Q_{ECETE}$	= quarter credit hours in ECE Technical Elective courses
$S_{ECETELAB}$	= semester lab credit hours in ECE Technical Elective courses
$Q_{ECETELAB}$	= quarter lab credit hours in ECE Technical Elective courses
$S_{ECE&CSETE}$	= semester credit hours in ECE and CSE Technical Elective courses from the CES pick list
$Q_{ECE&CSETE}$	= quarter credit hours in ECE and CSE Technical Elective courses from the CES pick list
$S_{ECE&CSE}$	= semester credit hours in an ECE or CSE course
$Q_{ECE&CSE}$	= quarter credit hours in an ECE or CSE course
$S_{GE}$	= semester credit hours in a General Education course
$Q_{GEC}$	= quarter credit hours in a GEC course

## Transition Principles – Quarters Requirements – EES

**Total hours to degree:**  $1.5S + Q \geq 196$

**GEC:** The category requirements of the student's GEC must be met

**Math and Basic Science hours (ABET):**  $1.5S_{MBS} + Q_{MBS} \geq 48$

### Selected Core:

- $1.5S_{SC} + Q_{SC} \geq 3$
- Allow  $1.5S_{SC} + Q_{SC} \leq 6$  *additional* hours from Selected Core pick list or semesters course topics comparable to Selected Core pick list courses. Credits here count against Outside Technical Electives.

### ECE Technical Electives

- Total ECE TE:  $1.5S_{ECETE} + Q_{ECETE} \geq 37$
- Area of concentration:  $1.5S_{ECETE} + Q_{ECETE} \geq 11$ , with at least one 700-level quarters course or 5000-level semesters course.
- Additional area(s) of concentration
  - A second area of concentration:  $1.5S_{ECETE} + Q_{ECETE} \geq 11$ , with at least one 700-level quarters course or 5000-level semesters course.
  - Or two additional areas of concentration:  $1.5S_{ECETE} + Q_{ECETE} \geq 5$
- Labs:  $1.5S_{ECETELAB} + Q_{ECETELAB} \geq 7$  (may also count toward areas of concentration)

### ECE EES Core:

- Use a mapping of semesters courses onto quarters requirements to assign credit for meeting specific course requirements
- No overall credit hour requirement
- Credit mismatches in Math and Basic Sciences
  - Must still meet minimum stated above
  - Overages count toward technical elective requirement in the Outside Technical Elective category
- Credit mismatches in ECE courses handled by adding to/subtracting from ECE Technical Electives
- Credit mismatches in non-ECE/non-MBS handled by adding to/subtracting from Outside Technical Electives

### Transfer Students Residency:

- $1.5S_{ECE\&CSE} + Q_{ECE\&CSE} \geq 45$
- Senior petition classes may be included

## Transition Principles – Quarters Requirements – CES

**Total hours to degree:**  $1.5S + Q \geq 196$

**GEC:** The category requirements of the student's GEC must be met

**Math and Basic Science hours (ABET):**  $1.5S_{MBS} + Q_{MBS} \geq 48$

### Selected Core:

- Allow  $1.5S_{SC} + Q_{SC} \leq 9$  hours from Selected Core pick list or semesters course topics comparable to Selected Core pick list courses. Credits here count against Outside Technical Electives.

### ECE Technical Electives

- Total ECE TE:  $1.5S_{ECETE} + Q_{ECETE} \geq 15$
- CES pick list:  $1.5S_{ECETE} + Q_{ECETE} \geq 12$  from the pick list of ECE & CSE courses.
  - Semesters courses available to undergraduates comparable to those on the quarters ECE-CES bingo sheet may be used.
  - ECE courses used to meet this requirement also count toward the 15 hour ECE TE requirement.

### ECE CES Core:

- Use a mapping of semesters courses onto quarters requirements to assign credit for meeting specific course requirements
- No overall credit hour requirement
- Credit mismatches in Math and Basic Sciences
  - Must still meet minimum stated above
  - Overages count toward technical elective requirement in the Outside Technical Elective category
- Credit mismatches in ECE courses handled by adding to/subtracting from ECE Technical Electives
- Credit mismatches in non-ECE/non-MBS handled by adding to/subtracting from Outside Technical Electives

### Transfer Students Residency:

- $1.5S_{ECE\&CSE} + Q_{ECE\&CSE} \geq 45$
- Senior petition classes may be included

## Transition Principles – Semesters Requirements – EES

**Total hours to degree:**  $S + (2/3)Q \geq 128$

### General Education/GEC

- For students accepted into the College of Engineering prior to the start of semesters the seven liberal arts category requirements of the student's GEC must be met.
- For students accepted into the college of Engineering after the start of semesters the eight liberal arts semesters Engineering General Education category requirements must be met. Excess credit hours resulting from the combination of semesters and quarters courses taken to meet these General Education category requirements,  $[S_{GE} + (2/3)Q_{GEC}] - 24$ , count against Directed Electives

**Math and Basic Science hours (ABET):**  $S_{MBS} + (2/3)Q_{MBS} \geq 32$

**Selected Core:** Quarters selected core courses taken that would have met quarters ECE-EES requirements but do not meet semesters ECE-EES Core requirements count against Directed Electives.

### ECE Technical Electives

- Total ECE TE:  $S_{ECETE} + (2/3)Q_{ECETE} \geq 16$ 
  - ECE TE Domain 1:  $S_{ECETE} + (2/3)Q_{ECETE} \geq 6$
  - ECE TE Domain 2:  $S_{ECETE} + (2/3)Q_{ECETE} \geq 3$
  - ECE TE Domain 3:  $S_{ECETE} + (2/3)Q_{ECETE} \geq 3$
- At least one 5000-level semesters course or 700-level quarters course.
- Labs: Two ECE technical electives that are lab courses or courses with lab content

### ECE EES Core:

- Use a mapping of quarter courses onto semester requirements to assign credit for meeting specific course requirements
- No overall credit hour requirement
- Credit mismatches in Math and Basic Sciences
  - Must still meet minimum stated above
  - Overages count toward electives in Directed Elective category
- Credit mismatches in ECE courses handled by adding to/subtracting from ECE Technical Electives
- Credit mismatches in non-ECE/non-MBS handled by adding to/subtracting from Directed Electives

### Transfer Students Residency:

- $S_{ECE\&CSE} + (2/3)Q_{ECE\&CSE} \geq 30$
- Senior petition classes may be included

## Transition Principles – Semesters Requirements – CES

**Total hours to degree:**  $S + (2/3)Q \geq 128$

### General Education/GEC

- For students accepted into the College of Engineering prior to the start of semesters the seven liberal arts category requirements of the student's GEC must be met.
- For students accepted into the college of Engineering after the start of semesters the eight liberal arts semesters Engineering General Education category requirements must be met. Excess credit hours resulting from the combination of semesters and quarters courses taken to meet the eight General Education category requirements,  $[S_{GE} + (2/3)Q_{GEC}] - 24$ , count against Directed Electives

**Math and Basic Science hours (ABET):**  $S_{MBS} + (2/3)Q_{MBS} \geq 32$

**Selected Core:** Quarters selected core courses taken that would have met quarters ECE-CES requirements but do not meet semesters ECE-CES Core requirements count against Directed Electives.

### ECE Technical Electives

- CES pick list:  $S_{ECE\&CSETE} + (2/3)Q_{ECE\&CSETE} \geq 9$  from the pick list of ECE & CSE courses on the semesters ECE-CES bingo sheet.
- Quarters courses comparable to the those on the semesters ECE-CES bingo sheet may be used.
- At least one 5000-level semesters course or 700-level quarters course.

### ECE CES Core:

- Use a mapping of quarter courses onto semester requirements to assign credit for meeting specific course requirements
- Will need to look at course-by-course
- No overall credit hour requirement
- Credit mismatches in Math and Basic Sciences
  - Must still meet minimum stated above
  - Overages count toward electives in the Directed Elective category
- Credit mismatches in ECE and CSE courses handled by adding to/subtracting from ECE-CSE TE
- Credit mismatches in non-ECE-CSE/non-MBS handled by adding to/subtracting from Directed Electives

### Transfer Students Residency:

- $S_{ECE\&CSE} + (2/3)Q_{ECE\&CSE} \geq 30$
- Senior petition classes may be included