

Electrical & Computer Engineering ECE Major Requirements

Name

Semester Taken Grade Notes

Writing

1. Writing 101(20)		
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Mathematics and Natural Science

2. MATH 111L (31L) [or AP credit for Math 21 (31)]		
3. MATH 112L (32L) [or AP credit for Math 22 (32)]		
4. MATH 212 (103)		
5. MATH 216 (107)		
6. MATH 353 (108)		
7. Statistics elective _____		
8. CHEM 101DL (31L) [or AP credit for Chem 20 (18) or 21(19)]		
9. PHY 151L (61L) [or AP credit for Physics 25 (61)] *		
10. PHY 152L (62L) [or AP credit for Physics 26 (62)] *		
11. Biology elective [or AP credit for Biology 20 (19)] _____		

Approved options: STA 130 (113) or Math 230 (135) or ECE 380 or ECE 555 (255)

Approved options: Bio 201L (101L), 202L (102L), 275LA (144), or 311 (147)

ECE Foundation Courses

12. EGR 103L (53L)		
13. CompSci 201 (100)		
14. ECE 110L (27L)		
15. ECE 230L (51L)		
16. ECE 250L		
17. ECE 270L (53L)		
18. ECE 280L (54L)		

ECE Concentration & Application Electives

19. ECE Concentration Elective 1 ** _____		
20. ECE Concentration Elective 2 ** _____		
21. ECE Concentration Elective 3 ** _____		
22. ECE Concentration Elective 4 ** _____		
23. ECE Elective _____		
24. ECE Elective _____		
25. ECE Design Elective _____		

Any ECE course at the 300(100)-level or above
Any ECE course at the 300(100)-level or above
Approved options: ECE 449 (135), 458, 459 (154), 539 (261), or 559 (251)

Humanities and Social Sciences ***

26. _____		
27. _____		
28. _____		
29. _____		
30. _____		

Area

Electives

31. _____		
32. _____		
33. _____		
34. _____		

* To satisfy the Physics Requirement, students must take (or have AP credit for) PHYSICS 151L(61L) and 152L(62L), and at least one physics course must be taken at Duke. If a student has AP credit for both 25 (61) & 26 (62), then one of PHYSICS 153L (63L), 264 (143), 361 (181), 362 (182), or 363 (176)) must be taken. Alternatively, AP credit for 26 (62) can be waived by taking 152L (62L). You do not have the option of taking PHY 151 (61) and then using AP for PHY 26 (62)--unless the *only* Physics AP credit you have is for PHY 26 (62).

** Courses must be selected from at least two areas, and at least two courses must be from the same area. The same course may not be used as a Concentration Elective and count as a required Design Elective or ECE Elective.

*** Five required. At least one SS and 2 from remaining areas of knowledge (FL, CZ, ALP). For depth, two must be from the same approved department or program --and one course must be at the 200-level, or above. See Pratt Policies & Procedures for detailed list of approved departments and programs (<http://www.pratt.duke.edu/undergrad/policies/3505#humanities>).

Electrical & Computer Engineering
ECE with COMPSCI Second Major Requirements

 Name

Semester Taken Grade Notes

Writing

1. Writing 101(20)		
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Mathematics and Natural Science

2. MATH 111L (31L) [or AP credit for Math 21 (31)]		
3. MATH 112L (32L) [or AP credit for Math 22 (32)]		
4. MATH 212 (103)		
5. MATH 216 (107)		
6. MATH 353 (108)		
7. Statistics elective _____		
8. CHEM 101DL (31L) [or AP credit for Chem 20 (18) or 21(19)]		
9. PHY 151L (61L) [or AP credit for Physics 25 (61)] *		
10. PHY 152L (62L) [or AP credit for Physics 26 (62)] *		
11. Biology elective [or AP credit for Biology 20 (19)] _____		

Approved options: STA 130 (113) or Math 230 (135) or ECE 380 or ECE 555 (255)

Approved options: Bio 201L (101L), 202L (102L), 275LA (144), or 311 (147)

ECE and COMPSCI Courses

12. EGR 103L (53L)		
13. ECE 110L (27L)		
14. ECE 230L (51L)		
15. ECE 250L		
16. ECE 270L (53L)		
17. ECE 280L (54L)		
18. ECE 350L		
19. CompSci 201 (100)		
20. COMPSCI 308 (108)		
21. COMPSCI 310 (110)		
22. COMPSCI 330 (130) **		
23. COMPSCI Elective _____		
24. ECE Digital Systems Elective _____		
25. ECE Concentration Elective *** _____		
26. ECE Elective _____		
27. ECE Elective _____		
28. ECE Design Elective _____		

Any COMPSCI course at the 200-level or above
 From list of approved Digital Systems Concentration courses

Any ECE course at the 300(100)-level or above
 Any ECE course at the 300(100)-level or above
 Approved options: ECE 449 (135), 458, 459 (154), 539 (261), or 559 (251)

Humanities and Social Sciences ****

Area

29. _____		
30. _____		
31. _____		
32. _____		
33. _____		

Electives

34. _____	
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* To satisfy the Physics Requirement, students must take (or have AP credit for) PHYSICS 151L(61L) and 152L(62L), and at least one physics course must be taken at Duke. If a student has AP credit for both 25 (61) & 26 (62), then one of PHYSICS 153L (63L), 264 (143), 361 (181), 362 (182), or 363 (176) must be taken. Alternatively, AP credit for 26 (62) can be waived by taking 152L (62L). You do not have the option of taking PHY 151 (61) and then using AP for PHY 26 (62)--unless the *only* Physics AP credit you have is for PHY 26 (62).

** Students who matriculated prior to Fall 2013 may substitute COMPSCI 334(140) or 220(150) for 330(130).

*** One course selected from the set of approved ECE Concentration Electives from outside the Computer Engineering and Digital Systems area.

**** Five required. At least one SS and 2 from remaining areas of knowledge (FL, CZ, ALP). For depth, two must be from the same approved department or program --and one course must be at the 200-level, or above. See Pratt Policies & Procedures for detailed list of approved departments and programs (<http://www.pratt.duke.edu/undergrad/policies/3505#humanities>).

Electrical & Computer Engineering

ECE with BME Second Major Requirements (matric ≤ 2010) Name _____

	Semester Taken	Grade	Notes
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Writing

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|--------------------|--|--|--|
| 1. Writing 101(20) | | | |
|--------------------|--|--|--|

Mathematics and Natural Science

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|---|--|--|--|
| 2. MATH 111L (31L) [or AP credit for Math 21 (31)] | | | |
| 3. MATH 112L (32L) [or AP credit for Math 22 (32)] | | | |
| 4. MATH 212 (103) | | | |
| 5. MATH 216 (107) | | | |
| 6. MATH 353 (108) | | | |
| 7. Statistics elective _____ | | | |
| 8. CHEM 101DL (31L) [AP credit for Chem 21(19)] | | | |
| 9. CHEM 201DL (151L) or CHEM 210DL(32L) | | | |
| 10. PHY 151L (61L) [or AP credit for Physics 25 (61)] * | | | |
| 11. PHY 152L (62L) [or AP credit for Physics 26 (62)] * | | | |
| 12. Biology 201L (101L) [cannot use AP credit] | | | |
| 13. Physiology or Life Science Elective ** _____ | | | |

Approved options: STA 130 (113) or Math 230 (135) or ECE 380 or ECE 555 (255)
 Alternate option : CHEM 110DL (43L)

ECE and BME Courses

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|--|--|--|--|
| 14. EGR 103L (53L) | | | |
| 15. CompSci 201 (100) | | | |
| 16. ECE 110L (27L) | | | |
| 17. ECE 230L (51L) | | | |
| 18. ECE 250L | | | |
| 19. ECE 270L (53L) | | | |
| 20. ECE 280L (54L) | | | |
| 21. ECE Concentration Elective 1 *** _____ | | | |
| 22. ECE Concentration Elective 2 *** _____ | | | |
| 23. ECE Elective _____ | | | |
| 24. BME 260L (100L) | | | |
| 25. EGR 201L (75L) | | | |
| 26. ME 221L (83L) | | | |
| 27. BME 354L (154L) | | | |
| 28. BME 301L (201L) or BME 303 (233) **** | | | |
| 29. BME Area Elective ***** _____ | | | |
| 30. BME General Elective _____ | | | |
| 31. BME Design Elective _____ | | | |

Any ECE course at the 300(100)-level or above

Approved options: BME 436L (236L) or 464L (264L)

Humanities and Social Sciences *****

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|-----------|--|--|--|
| 32. _____ | | | |
| 33. _____ | | | |
| 34. _____ | | | |
| 35. _____ | | | |
| 36. _____ | | | |

Area

* To satisfy the Physics Requirement, students must take (or have AP credit for) PHYSICS 151L(61L) and 152L(62L), and at least one physics course must be taken at Duke. If a student has AP credit for both 25 (61) & 26 (62), then one of PHYSICS 153L (63L), 264 (143), 361 (181), 362 (182), or 363 (176) must be taken. Alternatively, AP credit for 26 (62) can be waived by taking 152L (62L). You do not have the option of taking PHY 151 (61) and then using AP for PHY 26 (62)--unless the *only* Physics AP credit you have is for PHY 26 (62).

** If BME 303 (233) is taken, choose from approved list of Physiology Electives (see BME Handbook Table 7a)
 If BME 301L (201L) is taken, choose from the approved list of Life Science Electives (see BME Handbook Table 7)

*** Courses must be selected from the same concentration area.

**** If BME 301L (201L) is taken the Area Elective must be from the Bioelectricity Area
 If BME 303 (233) is taken the Area Elective must be from the Imaging and Sensors Area

***** Five required. At least one SS and 2 from remaining areas of knowledge (FL, CZ, ALP). For depth, two must be from the same approved department or program --and one course must be at the 200-level, or above. See Pratt Policies & Procedures for detailed list of approved departments and programs (<http://www.pratt.duke.edu/undergrad/policies/3505#humanities>).

Electrical & Computer Engineering

ECE with BME Second Major Requirements (matric ≥ 2011) Name _____

Semester Taken Grade Notes

Writing

1. Writing 101(20)			
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Mathematics and Natural Science

2. MATH 111L (31L) [or AP credit for Math 21 (31)]			
3. MATH 112L (32L) [or AP credit for Math 22 (32)]			
4. MATH 212 (103)			
5. MATH 216 (107)			
6. MATH 353 (108)			
7. Statistics elective _____			
8. CHEM 101DL (31L) [AP credit for Chem 21(19)]			
9. CHEM 201DL (151L) or CHEM 210DL(32L)			
10. PHY 151L (61L) [or AP credit for Physics 25 (61)] *			
11. PHY 152L (62L) [or AP credit for Physics 26 (62)] *			
12. Biology 201L (101L) [cannot use AP credit]			
13. Life Science Elective ** _____			

Approved options: STA 130 (113) or Math 230 (135)
or ECE 380 or ECE 555 (255)
Alternate option : CHEM 110DL (43L)

ECE and BME Courses

14. EGR 103L (53L)			
15. CompSci 201 (100)			
16. ECE 110L (27L)			
17. ECE 230L (51L)			
18. ECE 250L			
19. ECE 270L (53L)			
20. ECE 280L (54L)			
21. ECE Concentration Elective 1 *** _____			
22. ECE Concentration Elective 2 *** _____			
23. ECE Elective _____			
24. BME 244L (144L)			
25. EGR 201L (75L)			
26. ME 221L (83L)			
27. BME 260L (100L)			
28. BME 354L (154L)			
29. BME 301L (201L) or BME 303 (233) ****			
30. BME Area Elective ***** _____			
31. BME General Elective _____			
32. BME Design Elective _____			

Any ECE course at the 300(100)-level or above

Approved options: BME 436L (236L) or 464L (264L)

Humanities and Social Sciences *****

			Area
33. _____			
34. _____			
35. _____			
36. _____			
37. _____			

* To satisfy the Physics Requirement, students must take (or have AP credit for) PHYSICS 151L(61L) and 152L(62L), and at least one physics course must be taken at Duke. If a student has AP credit for both 25 (61) & 26 (62), then one of PHYSICS 153L (63L), 264 (143), 361 (181), 362 (182), or 363 (176) must be taken. Alternatively, AP credit for 26 (62) can be waived by taking 152L (62L). You do not have the option of taking PHY 151 (61) and then using AP for PHY 26 (62)—unless the *only* Physics AP credit you have is for PHY 26 (62).

** If BME 303 (233) is taken, choose from approved list of Physiology Electives (see BME Handbook Table 7a)
If BME 301L (201L) is taken, choose from the approved list of Life Science Electives (see BME Handbook Table 7)

*** Courses must be selected from the same concentration area.

**** If BME 301L (201L) is taken the Area Elective must be from the Bioelectricity Area
If BME 303 (233) is taken the Area Elective must be from the Imaging and Sensors Area

***** Five required. At least one SS and 2 from remaining areas of knowledge (FL, CZ, ALP). For depth, two must be from the same approved department or program --and one course must be at the 200-level, or above. See Pratt Policies & Procedures for detailed list of approved departments and programs (<http://www.pratt.duke.edu/undergrad/policies/3505#humanities>).

Electrical & Computer Engineering ECE with PHYSICS Second Major Requirements

(assuming one Math AP credit)

Name _____

	Semester Taken	Grade	Notes
Writing			
1. Writing 101(20)			

	Pre-matriculation	AP	
Mathematics and Natural Science			
2. AP credit for Math 21 (31)			
3. MATH 122L (41L) [or AP credit for Math 22 (32)]			
4. MATH 212 (103)			
5. MATH 216 (107)			
6. MATH 353 (108)			
7. Statistics elective _____			
8. CHEM 101DL (31L) [or AP credit for Chem 20 (18) or 21(19)]			
9. PHY 151L (61L) [or AP credit for Physics 25 (61)] *			
10. PHY 152L (62L) [or AP credit for Physics 26 (62)] *			
11. PHY 264L (143L)			
12. PHY 361 (181)			
13. PHY 362 (182)			
14. PHY 417S (217S)			
15. PHY 464 (211)			
16. PHY Elective _____			
17. PHY Elective _____			
18. Biology elective [or AP credit for Biology 20 (19)] _____			

Approved options: STA 130 (113) or Math 230 (135) or ECE 380 or ECE 555 (255)

Any PHY course at the 200-level or above
Any PHY course at the 300-level or above
Approved options: Bio 201L (101L), 202L (102L), 275LA (144), or 311 (147)

ECE Foundation Courses			
19. EGR 103L (53L)			
20. CompSci 201 (100)			
21. ECE 110L (27L)			
22. ECE 230L (51L)			
23. ECE 250L			
24. ECE 270L (53L)			
25. ECE 280L (54L)			

ECE Concentration & Application Electives			
26. ECE Concentration Elective 1 ** _____			
27. ECE Concentration Elective 2 ** _____			
28. ECE Concentration Elective 3 ** _____			
29. ECE Concentration Elective 4 ** _____			
30. ECE 311 (176)			
31. ECE Elective _____			
32. ECE Design Elective _____			

Cross-listed as PHY 363 (176)
Any ECE course at the 300(100)-level or above
Approved options: ECE 449 (135), 458, 459 (154), 539 (261), or 559 (251)

	Area		
Humanities and Social Sciences **			
33. _____			
34. _____			
35. _____			
36. _____			
37. _____			

* The sequence of PHY 161L and 162L is also accepted in lieu of PHY 151L and 152L.

** Courses must be selected from at least two areas, and at least two courses must be from the same area. The same course may not be used as a Concentration Elective and count as a required Design Elective or ECE Elective.

*** Five required. At least one SS and 2 from remaining areas of knowledge (FL, CZ, ALP). For depth, two must be from the same approved department or program --and one course must be at the 200-level, or above. See Pratt Policies & Procedures for detailed list of approved departments and programs (<http://www.pratt.duke.edu/undergrad/policies/3505#humanities>)