

**PAPER SCIENCE & ENGINEERING SAMPLE CURRICULUM**  
*University of Washington*

*September 2009*

FRESHMAN – AUTUMN QUARTER	FRESHMAN – WINTER QUARTER	FRESHMAN – SPRING QUARTER
♦ <i>MATH 124 – Calculus I</i> 5	♦ <i>MATH 125 – Calculus II</i> 5	♦ <i>MATH 126 – Calculus III</i> 5
♦ <i>CHEM 142 – General Chem. &amp; Lab I</i> 5	♦ <i>CHEM 152 – General Chem. &amp; Lab II</i> 5	♦ <i>CHEM 162 – General Chem. &amp; Lab III</i> 5
PSE 201 – Pulp, Paper & Bioproducts 3	♦ <i>ENGL 131 – Composition<sup>1</sup></i> 5	I&S Elective <sup>5</sup> 2
PSE 202 – Pulp & Paper Lab/Field 1		<i>Optional: PSE 450 – PSE Seminar<sup>4</sup></i> 1
		General Elective 3
QUARTER TOTAL 14	QUARTER TOTAL 15	QUARTER TOTAL 15-16
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SOPHOMORE – AUTUMN QUARTER	SOPHOMORE – WINTER QUARTER	SOPHOMORE – SPRING QUARTER
♦ <i>MATH 307 – Differential Equations</i> 3	ECON 200 – Microeconomics 5	Q SCI 381 – Probability & Statistics 5
♦ <i>CHEM 237 – Org. Chemistry I</i> 4	CHEM 238 – Organic Chemistry II 4	♦ <i>CHEM E 325 – Energy&amp;Entropy</i> 4
♦ <i>PHYS 121 – Mech. &amp; Lab</i> 5	♦ <i>PHYS 122 – Electromag. &amp; Lab</i> 5	PHYS 123 – Waves & Lab 5
PSE 248 – Paper Properties 4	HCDE 231 Intro to Technical Writing 3	<i>Optional: PSE 450 – PSE Seminar<sup>4</sup></i> 1
QUARTER TOTAL 16	QUARTER TOTAL 17	QUARTER TOTAL 14-15
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JUNIOR – AUTUMN QUARTER	JUNIOR – WINTER QUARTER	JUNIOR – SPRING QUARTER
PSE 406 – Natural Products Chem. 3	PSE 476 – Pulping and Bleaching 3	PSE 478 – Pulp & Paper Lab I 2
CHEM E 310 – Material/Energy Bal. 4	CHEM E 330 – Transport Processes I 5	CHEM 455 – Physical Chemistry 3
Technical/Business Elective <sup>3</sup> 3	VLPA Elective <sup>2</sup> 5	CHEM E 340 – Transport Processes II 4
VLPA 5	Technical/Business Elective 3	PSE 404 – Raw Mater./Papermaking 3
		PSE 450 – PSE Seminar <sup>4</sup> 1
		General Elective <sup>4</sup> 2
QUARTER TOTAL 15	QUARTER TOTAL 16	QUARTER TOTAL 15
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SENIOR – AUTUMN QUARTER	SENIOR – WINTER QUARTER	SENIOR – SPRING QUARTER
PSE 402 – Paper Physics 3	PSE 479 – Pulp & Paper Lab II 3	PSE 487 – Pulp & Paper Design II 5
PSE 477 – Papermaking Processes 3	PSE 480 – Pulp & Paper Pro Control 3	PSE 482 – Pulp & Paper Design I 3
PSE 497 – Pulp & Paper Internship 1	PSE 481 – Pulp & Paper Unit Operat. 3	PSE 450 – PSE Seminar <sup>4</sup> 1
CHEM E 436 – Chemical Engr. Lab 3	Technical Elective <sup>3</sup> 3	General Elective 5
Technical Elective <sup>3</sup> 3	General Elective 4	
QUARTER TOTAL 13	QUARTER TOTAL 16	QUARTER TOTAL 14

<sup>1</sup> ENGL 131 is recommended. May take any course (5 cr min) from the UW's English Composition list.

<sup>2</sup> Any courses (10 cr min) from the UW's VLPA (Visual, Literary and Performing Arts) list.

<sup>3</sup> Technical Electives (12 cr min): Six credits must be taken from engineering topics list available in PSE student services. Business Options: See Student Services for approved list.

<sup>4</sup> Must take at least two times. If taken more than two times, course may be used toward technical or general electives.

<sup>5</sup> Can be general elective if ESRM 320 is completed as part of the business option.

**BOLD face courses are required for Upper-Division Admission**

**For more information contact:** Engineering Advising, 301 Loew Hall, Box 352180, Seattle, Washington 98195-2180  
phone (206) 543-1770 – email (engradv@enr.washington.edu)

OR

Paper Science & Engineering, 116 Anderson Hall, Box 352100, Seattle, Washington 98195-2100  
phone (206) 543-3077 – email (cfradv@u.washington.edu)

**PAPER SCIENCE & ENGINEERING GRADUATION REQUIREMENTS**  
*University of Washington*

September 2009

See end for Early Admission Requirements.

◆ Upper-Division **Admission** Requirements.

**Mathematics.....[23 Credits]**

- ◆ MATH 124 [5cr] Calculus with Analytic Geometry I
- ◆ MATH 125 [5cr] Calculus with Analytic Geometry II
- ◆ MATH 126 [5cr] Calculus with Analytic Geometry III
- ◆ MATH 307 [3cr] Differential Equations [pr: MATH 125]
- Q SCI 381 [5cr] Intro Prob. & Statistics [pr: MATH 120]

**Sciences.....[41 Credits]**

- ◆ CHEM 142 [5cr] General Chemistry with lab
- ◆ CHEM 152 [5cr] General Chem with lab [pr: CHEM 142]
- ◆ CHEM 162 [5cr] General Chem with lab [pr: CHEM 152]
- ◆ CHEM 237 [4cr] Organic Chemistry I [pr: CHEM 162]
- CHEM 238 [4cr] Organic Chemistry II [pr: CHEM 237]
- CHEM 455 [3cr] Physical Chemistry [pr: CHEM 162]
- ◆ PHYS 121 [5cr] Mechanics with lab [pr: MATH 124]
- ◆ PHYS 122 [5cr] Electro/Oscil. with lab [pr: MATH 125]
- PHYS 123 [5cr] Waves with lab [pr: MATH 126]

**Written and Oral Communications.....[8 Credits]**

- ◆ ENGL COMP [5cr] A&S English Composition
- HCDE 231 [3cr] Intro to Technical Writing [pr: ENGL COMP]

**Visual, Literary & Performing Arts**

**Individuals & Societies [VLPA/I&S].....[20 Credits]**

Minimum 10 credits in VLPA (formerly Humanities) required.  
Minimum 10 credits in I&S (formerly Social Sciences) required.  
(ECON 200 [5cr] and PSE 482 [3cr] are required for graduation)

**Engineering Fundamentals .....[4 Credits]**

- ◆ CHEM E 260 [4cr] Thermodynamics

**Chemical Engineering Requirements..... [16 Credits]**

- CHEM E 310 [4cr] Material & Energy Balances
- CHEM E 330 [5cr] Transport Processes I
- CHEM E 340 [4cr] Transport Processes II
- CHEM E 436 [3cr] Chemical Engineering Laboratory I

**Paper Science & Engineering Core Courses.. [45 credits]**

- PSE 201/202 [4cr] Pulp, Paper, Bioproducts Tech/Field
- PSE 248 [4cr] Paper Processes
- PSE 402 [3cr] Special Elective (see adviser)
- PSE 404 [3cr] Raw Materials/Papermaking
- PSE 406 [3cr] Natural Products Chemistry
- PSE 450 [2cr] Paper Science & Eng. Seminar
- PSE 476 [3cr] Pulping & Bleaching Processes
- PSE 477 [3cr] Papermaking Processes
- PSE 478 [2cr] Pulp & Paper Laboratory I
- PSE 479 [3cr] Pulp & Paper Laboratory II
- PSE 480 [3cr] Pulp & Paper Process Control
- PSE 481 [3cr] Pulp & Paper Unit Operation
- PSE 482 [3cr] Paper Science & Engineering Design I
- PSE 487 [5cr] Paper Science & Engineering Design II
- PSE 497 [1cr] Pulp & Paper Internship

**General Electives ..... [11 Credits]**

**Technical/Business Electives ..... [12 Credits]**

See Paper Science & Engineering Advising Guide for list of Technical Electives.

**Total credits required for graduation ..... [180]**

**Early Admission Requirements**

1. Early Admission is an option for **AUTUMN, WINTER, or SPRING QUARTERS.**
2. Student **MUST** be enrolled at UW.
3. Math 124,125 & 126; or equivalent.
4. 10 credits of physical sciences courses plus the accompanying lab at the level of CHEM 142, 152, 162.
5. 5 credits of English Composition.
6. 15 of the above 30 credits **MUST** have been completed at the University of Washington.