



## PhD (Aerospace) Ocean Engineering Track Graduate Checklist

<b>Doctor of Philosophy: (Excludes AOE 5944)</b>					
Total minimum credits	Total minimum credits of coursework 5000 level or higher	Course	Title (excludes AOE 5944: Seminar)	Credits	
90 Credits	27 Credits		Seminar		
			Seminar		
			Seminar		
			Seminar		
			(Maximum of 4 hours) TOTAL		
<b>Research Credits and Variable Credit Courses:</b>					
Course	Title	Credits	Course	Title	Credits
AOE 7994	Research and Dissertation		AOE 5974	Independent Study	
AOE 7994	Research and Dissertation		AOE 5974	Independent Study	
AOE 7994	Research and Dissertation		AOE 5974	Independent Study	
AOE 7994	Research and Dissertation		AOE 5984	Special Study	
AOE 7994	Research and Dissertation		AOE 5984	Special Study	
AOE 7994	Research and Dissertation		AOE 5984	Special Study	
AOE 7994	Research and Dissertation				
AOE 7994	Research and Dissertation				
	(Minimum of 30 hours) TOTAL			(Maximum of 18 hours) TOTAL	

<b>Doctorate of Philosophy Track: Transfer courses as approved by Advisory Committee</b>				
University	Course	Title	Credits	Grade

<b>Ocean Engineering Track: 12 credits prior to taking the Preliminary Written Examination</b>		
Course	Title	Credits
AOE 4404	Applied Numerical Methods	3
AOE 5074	Advanced Ship Structural Analysis <sup>1</sup>	3
AOE 5104	Advanced Aero and Hydrodynamics	3
AOE 5334	Advanced Ship Dynamics	3
	TOTAL	12
<b>Two of the following courses are required prior to taking the Preliminary Written Examination:</b>		
Course	Title	Credits
AOE 4024	An Introduction to the Finite Element Method	
AOE 5034	Mechanical and Structural Vibrations	
AOE 5144	Boundary Layer Theory and Heat Transfer	
AOE 5434G	Advanced Introduction to Computational Fluid Dynamics	
AOE 5444G	Advanced Dynamics of High-Speed Craft	
AOE 5744	Linear Systems Theory	
ESM 5314	Intermediate Dynamics	
ESM 5734	Introduction to the Finite Element Method	
MATH 5425	Applied Partial Differential Equations	
MATH 5474	Finite Difference Methods for Partial Differential Equations	
	(Minimum of 6 hours) TOTAL	
<b>Ocean Engineering Track: Two of the following courses are required prior to taking the Final Examination</b>		
Note: Courses not taken from the list above can be used in this section.		
Course	Title	Credits
AOE 5064	Structural Optimization	
AOE 5314	Naval Ship System Design and Effectiveness <sup>2</sup>	
AOE 5374	Rationally-Based Design of Ocean Structures	
AOE 5454	Advanced Aerospace and Ocean Engineering Instrumentation	
AOE 6145	Computational Fluid Dynamics	
AOE 6434	Computational Fluid Dynamics and Heat Transfer	
ESM 6314	Advanced Dynamics	
	(Minimum of 6 hours) TOTAL	

<sup>1</sup> If AOE 4274: Computer-Based Design of Ocean Structures has already been taken, then one of the following two courses must be substituted: AOE 5024: Vehicle Structures or AOE 5374: Rationally-Based Design of Ocean Structures.

<sup>2</sup> It is strongly recommended that students who wish to take AOE 5314: Naval Ship System Design and Effectiveness, first take AOE 4264: Principles of Naval Engineering.

- Official transcripts of transfer courses – Confirm that both the Graduate School and AOE Department have transcripts in your student file.
  - Submit the [Transfer Course Approval Form](#) with a course description or syllabus for each course being considered for transfer (if applicable).
  - Submit the [Graduate Program Faculty and Additional Graduate Advisory Committee Members Form](#) with curriculum vitae of committee member (if applicable).
  - Submit the [PhD Plan of Study](#) by the end of the second semester within the program.
  - Submit the [Course Justification Request Form](#) and supporting documents if you are listing courses five years old or older on your MS Plan of Study.
  - Submit the [Change of Committee/Advisor Form](#) (if applicable).
  - Submit the [Request for Plan of Study Changes Form](#) (if applicable).
  - Schedule the Oral Preliminary Examination with Advisory Committee for a date within the four weeks immediately following the Preliminary Written Examination.
  - Submit the [Request to Admit Candidate to the Preliminary Examination Form](#) to the Graduate School at least three weeks prior to the date of the Oral Preliminary Exam.
  - Submit the [AOE Preliminary Exam Application and Eligibility Form](#) by September 1st.
  - Take the AOE Preliminary Written Examination on the 3<sup>rd</sup> Monday of September if approved.
  - The electronic Preliminary Exam Card is submitted to the Graduate School within two days of the Preliminary Exam.
  - Schedule the Dissertation Proposal with Advisory Committee at least six months prior to the expected completion date. The Chair will inform the Graduate Program Coordinator of the results of the Dissertation Proposal Defense.
  - Apply for your degree in [HokieSpa](#) by the following dates:
 

Fall – October 1<sup>st</sup>      Spring – March 1<sup>st</sup>      Summer I – June 1<sup>st</sup>      Summer II – August 1<sup>st</sup>
  - Schedule the Final Exam with Advisory Committee prior to the following [dates](#) if participating in the ceremony:
 

Fall – October 31<sup>st</sup>      Spring – March 27<sup>th</sup>
  - Schedule the Final Exam with Advisory Committee prior to the following [dates](#) if not participating in the ceremony:
 

Fall – December 10<sup>th</sup>      Spring – May 6<sup>th</sup>      Summer I – July 2<sup>nd</sup>      Summer II – August 13<sup>th</sup>
  - Submit a copy of the FINAL version of your dissertation to the Advisory Committee two weeks in advance of the date of the Final Exam.
  - Submit the [Request to Admit Candidate to the Final Examination Form](#) to the Graduate School at least three weeks prior to the date of the Final Exam.
  - Submit the [Start of Semester Defense Exception Request Form](#) with the [Request to Admit Candidate to the Final Examination Form](#) if you plan to defend by the following dates (and not register for coursework that semester):
 

Fall – September 26<sup>th</sup>      Spring – February 20<sup>th</sup>      Summer I & II – May 26<sup>th</sup> through August 13<sup>th</sup>
- These forms must be submitted to the Graduate School at least **three weeks** prior to the date of the Final Exam.
- The electronic Final Exam Card is submitted to the Graduate School within two days of the Final Exam.

Submit your [Thesis and Dissertation \(ETD\)](#) to the Graduate School within two weeks after the Final Exam and by the following dates if participating in the ceremony:

Fall – November 14<sup>th</sup>    Spring – April 10<sup>th</sup>

Submit your [ETD](#) to the Graduate School within two weeks after the Final Exam and by the following [dates](#) if not participating in the ceremony:

Fall – December 24<sup>th</sup>    Spring – May 20<sup>th</sup>    Summer I – July 16<sup>th</sup>    Summer II – August 27<sup>th</sup>

Confirm completion of all coursework and degree requirements by the following [dates](#) if participating in the ceremony:

Fall – December 12<sup>th</sup>    Spring – May 8<sup>th</sup>

Confirm completion of all coursework and degree requirements by the following [dates](#) if not participating in the ceremony:

Fall – February 6<sup>th</sup>    Spring – July 3<sup>rd</sup>    Summer I – August 7<sup>th</sup>    Summer II – September 18<sup>th</sup>

Pay all student fees on account prior to graduation.

### **Graduation Requirements and Commencement Deadlines**

The specific dates for deadlines listed above should be confirmed based on the graduation requirements and commencement deadlines for the academic term in which you plan to graduate. This information is found on the Graduate School's website at [http://graduateschool.vt.edu/academics/commencement\\_deadlines](http://graduateschool.vt.edu/academics/commencement_deadlines).

### **Forms**

Graduate School (<http://graduateschool.vt.edu/academics/forms>)

AOE Department (<http://www.aoe.vt.edu/graduate/forms/.html>)

All forms must be submitted to either the Graduate Program Coordinator or the Graduate Program Director for Department Head and Graduate Program approval. The department will submit forms to the Graduate School in order to ensure that departmental requirements have been met and proper records are maintained.