

## MASE 319 - Fundamentals of Naval Architecture Design I COURSE SYLLABUS

Course Information	Fundamentals of Naval Architecture Design I - MASE 319 Fall 2014				
Course Instructor	Masoud Hayatdavoodi, F Instructional Assistant P Maritime Systems Engine	Ph.D. Professor eering Department	Office: MERC 117 E-mail: masoud@tamu.edu Phone: 409-740-4486		
Class Schedule	<ul> <li>Lecture: Monday, Wednesday 10:00 AM to 10:50 AM at Powell Marine Engineering Comp 148</li> <li>Laboratory: Friday, 8:00 AM - 10:50 AM at Powell Marine Engineering Comp 178</li> </ul>				
Office Hours	Monday: 01:00PM-0 Tuesday: 01:00PM-0 Wednesday: 01:00PM-0	03:00PM, 03:00PM, 03:00PM,			
	And by appointment.				
Grading	Assignments20%Midterm Exam30%Project20%Final Exam30%				
Grading Scale	$\begin{array}{rl} A & \geq 90\% \\ B & \geq 75\% \\ C & \geq 60\% \\ D & \geq 50\% \\ F & < 50\% \end{array}$				
Техтвоок	• Required: Gillmer, Thomas C. and Johnson, Bruce (1982), "Introduction to Naval Architecture," Naval Institute Press, Annapolis, Maryland, ISBN: 978-0870213182, 324 pp.				
	• Alternative Reference Books: Zubaly, Robert B. (1996), "Applied Naval Architecture," Cornell Maritime Press, Inc., ISBN: 978-0870334757, 360 pp.				
	Lester, Alan Robert (1985), "Merchant Ship Stability," Butterworths, ISBN: 978-0408014489, 314 pp.				
	Tupper, Eric C. (2013), "Introduction to Naval Architecture," Fifth Edition, Butterworth- Heinemann, ISBN: 978-0080982373, 496 pp.				
	Letcher, John, Edth. Paulling, J. Randolph (2010) "Principles of Naval Architecture Series: The Geometry of Ships," SNAME, ISBN: 978-0939773671, 58 pp.				
	Moore, Colin S., Edth Series: Intact Stability	h. Paulling, J. Randoly y," SNAME, ISBN: 978	ph (2010)"Principles of Naval Architecture -0939773749, 82 pp.		
	Kerwin, Justin E. and Hadler, Jacques B. (2010) "Principles of Naval Architecture Series: Propulsion," SNAME, ISBN: 978-0939773831, 208 pp.				
	Larsson, Lars and Ray tance & Flow," SNAM	ven, Hoyte C. (2010) "P ME, ISBN: 978-0939773	rinciples of Naval Architecture: Ship Resis- 763, 223 pp.		

Course Communications	Course-related material, along with class communications, are held on $eCampus$ through $Howdy$ portal. Students are expected to check and use the course webpage on regular basis	
Course Description	Introduction to Naval Architecture. Terminology. Hydrostatics and Hydrostatic Stability. Processes of the design of ships, semi-submersibles and underwater vehicles including layout, arrangements, construction and construction techniques. Hull design of ships, underwater vehicles and mobile offshore drilling units (MODUS).	
Learning Outcomes	The course is intended to familiarize students with hydrostatics, hydrodynamics and some structural considerations of ships, offshore platforms and submarines. Upon completion of this course, students should be able to discuss ship geometry, Buoyancy and Stability, Damage Stability, Ship Resistance, Ship Strength and Structure and Ship Powering. Students will practice hull line drawing, read design standards of classification societies, will use Sesam software, and will conduct laboratory experiments on ship hydrostatics and hydrodynamics. Students will experience prototype-scale experiments through multiple field trips. This course supports ABET criteria a-e, g-k, and criteria 4, 7 and 9.	
Prerequisites	CVEN311, CVEN345, ENGR221, MASE214. Junior or Senior Classification or approval of instructor. Enrollment in OCSE Major Degree Sequence.	
Attendance and Make-up Polices	Information concerning absences is contained in the University Student Rules Section 7 http://www.tamug.edu/stulife/Academic%20Rules/Rule%207.pdf.	
	The University views class attendance as an individual student responsibility. All students are expected to attend class and to complete all assignments. Late arrivals count as absences.Please consult the University Student Rules for reasons for excused absences, detailed procedures and deadlines as well as student grievance procedures (Part III, Section 45). If the absence is excused, the student will be provided an opportunity to make up any quiz, exam or other work that contributes to the final grade. The evaluation method will be decided by the instructor. The evaluation date is agreed upon by the student and instructor.	
Academic Integrity	An Aggie does not lie, cheat or steal, or tolerate those who do. For additional information visit: http://www.tamug.edu/HonorSystem.	
Americans with Disabilities Act (ADA)	The Americans with Disabilities Act (ADA) is a federal non-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this law requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Counseling Office, Seib Student Center, or call (409)740-4587. For additional information visit: http://www.tamug.edu/counsel/Disabilities.html.	

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Tentative	
Schedule	

Monday	WEDNESDAY	Friday
Sep 1st 1	3rd <b>2</b>	5th <b>3</b>
Course Introduction	Ship Geometry and Hydrostatics	Ship Line Drawings (PMEC 143)
8th 4	10th 5	12th <b>6</b>
Ship Geometry and Hydrostatics	Ship Geometry and Hydrostatics	Introduction to Sesam (PMEC 143)
15th <b>7</b>	17th 8	19th <b>9</b>
Irregular Shapes and Numerical Methods	Buoyancy and Stability	Project Preparation (PMEC 143)
22nd 10	24th <b>11</b>	26th <b>12</b>
Buoyancy and Stability	Longitudinal Stability	Pontoon Test (PMEC 178)
29th <b>13</b>	Oct 1st 14	3rd <b>15</b>
Trim	Stability at Large Angles	Stability and Inclining Test (PMEC 178)
6th <b>16</b>	8th 17	10th <b>18</b>
Damage Stability	Damage Stability	Trim and Large Angle Stability Tests (PMEC 178)
13th <b>19</b>	15th <b>20</b>	17th <b>21</b>
Launching, Dry Docking and Grounding	Stability of Submersibles & Midterm Review	Midterm Exam
20th <b>22</b>	22nd <b>23</b>	24th <b>24</b>
Ship Strength and Structure	Ship Strength and Structure	Project Revisions (PMEC 143)
27th <b>25</b>	29th <b>26</b>	31st <b>27</b>
Dimensional Analysis and Model Testing	Ship Resistance	Field Trip
Nov 3rd 28	5th <b>29</b>	7th <b>30</b>
Ship Resistance	Ship Resistance	Ship Resistance Calculations from Model Test (PMEC 178)
10th <b>31</b>	12th <b>32</b>	14th <b>33</b>
Ship Powering	Ship Powering	Field Trip
17th <b>34</b>	19th <b>35</b>	21st <b>36</b>
Propellers and Propulsion Systems	Propellers and Propulsion Systems	Project Revisions (PMEC 143)
24th <b>37</b>	26th <b>38</b>	28th
Classification Societies	Introduction to Shipbuilding	Thanksgiving Holiday
Dec 1st 39	3rd 40	5th 41
Project Presentation	Project Presentation	Project Presentation
8th 42	10th <b>43</b>	12th
Final Exam Review	Reading Day; No Class	