

**NAUTICAL SCIENCE FACULTY  
ENGINEERING SCHOOL  
BACHEROL OF SCIENCE DEGREE IN NAUTICAL ENGINEERING IN  
NAVAL MACHINERY**

**INTERNATIONAL MARITIME UNIVERSITY OF PANAMA  
NAUTICAL SCIENCE FACULTY  
ENGINEERING SCHOOL  
BACHEROL OF SCIENCE DEGREE IN NAUTICAL ENGINEERING IN  
NAVAL MACHINERY**

**FIRST YEAR  
I SEMESTER**

Nº	ABREV	CODE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
1		166	Mathematics I	Science-Humanities	3	2	5	4	N/L
2		410	Technical Drawing I	Humanities	1	2	3	2	N/L
3		417	Chemistry I	Science-Humanities	2	2	4	3	N/L
4		413	Introduction to Nautical Science II	Major	2	2	4	3	N/L
5		418	Physics I	Science-Humanities	3	2	5	4	N/L
6		411	Introduction to Naval Machinery I	Major	2	2	4	3	N/L
---			English	---	---	---	---	---	---
<b>SUBTOTAL</b>					<b>13</b>	<b>12</b>	<b>25</b>	<b>19</b>	

**II SEMESTER**

Nº	ABREV	CODE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
7		112	Mathematics II	Science-Humanities	3	2	5	4	Mathematics I
8		414	Technical Drawing II	Humanities	1	2	3	2	Technical Drawing I
9		419	Chemistry II	Science-Humanities	2	2	4	3	Chemistry I
10		415	Introduction to Nautical Science II	Major	2	2	4	3	Introduction to Nautical Science I
11		322	Physics II	Science-Humanities	3	2	5	4	Physics I
12		412	Introduction to Naval Machinery II	Major	2	2	4	3	Introduction to Naval Machinery I
<b>SUBTOTAL</b>					<b>13</b>	<b>12</b>	<b>25</b>	<b>19</b>	
<b>TOTAL</b>					<b>26</b>	<b>24</b>	<b>50</b>	<b>38</b>	
---			English	---	---	---	---	---	----

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**SUMMER COURSE (1)**

Nº	ABREV	CODE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
---		420	Maritime Seminars I	Major	---	---	---	---	
13		167	Panama and the World Maritime Geography	Science-Humanities	2	0	2	2	N/L
14		421	Moral and Ethic	Science-Humanities	2	0	2	2	N/L
15		145	Maritime Ecology	Science-Humanities	2	2	4	3	N/L
16		111	Oral and Written Communication	Science-Humanities	2	0	2	2	N/L
17		422	Applied Information Technology	Science-Humanities	1	2	3	2	N/L
18		423	Optative Subject	----	2	2	4	3	N/L
<b>SUBTOTAL</b>					<b>11</b>	<b>6</b>	<b>17</b>	<b>14</b>	
<b>TOTAL</b>					<b>37</b>	<b>30</b>	<b>67</b>	<b>52</b>	

**SECOND YEAR  
III SEMESTER**

Nº	ABREV	CODE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
19		130	Mathematics III	Science-Humanities	3	2	5	4	Mathematics II
20		148	Naval Construction I	Major	2	2	4	3	Introduction to Nautical Science II
21		425	Maritime Law I	Major	2	2	4	3	N/L
22		426	Electrotechnology and Marine Electronic Technology I	Major	2	2	4	3	Physics II
23		427	Mechanic and Resistance of Material	Major	2	2	4	3	Physics II
24		428	Industrial Safety I	Major	2	2	4	3	N/L
<b>SUBTOTAL</b>					<b>13</b>	<b>12</b>	<b>25</b>	<b>19</b>	
<b>TOTAL</b>					<b>50</b>	<b>42</b>	<b>92</b>	<b>71</b>	
---			English	---	---	---	---	---	---

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**IV SEMESTER**

Nº	ABREV	CODE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
25		436	Advands Mathematics for Engineers	Science-Humanities	3	2	5	4	Mathematics III
26		1	Naval Construction II	Major	2	2	4	3	Naval Construction I
27		501	Maritime Law II	Major	2	2	4	3	Maritime Law I
28		514	Electrotechnology and Marine Electronic Technology II	Major	2	2	4	3	Electrotechnology and Marine Electronic Technology I
29		515	Thermodynamic and Mechanic of Fluids I	Major	2	2	4	3	Mechanic and Resistances of Material
30		516	Industrial Safety II	Major	2	2	4	3	Industrial Safety I
<b>SUBTOTAL</b>					<b>13</b>	<b>12</b>	<b>25</b>	<b>19</b>	
<b>TOTAL</b>					<b>63</b>	<b>54</b>	<b>117</b>	<b>90</b>	
---			English	---	---	---	---	---	---

**SUMMER COURSE (2)**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
---		172	Maritime Seminars II	Major	---	---	---	---	----
31		32	Basic Statistic	Science-Humanities	2	2	4	3	N/L
32		274	Basic Management	Administration-Management	2	2	4	3	N/L
33		78	General Accounting	Administration-Management	2	2	4	3	N/L
34		423	Optative Subject	----	2	2	4	3	N/L
<b>SUBTOTAL</b>					<b>8</b>	<b>8</b>	<b>16</b>	<b>12</b>	
<b>TOTAL</b>					<b>71</b>	<b>62</b>	<b>133</b>	<b>102</b>	

**THIRD YEAR  
V SEMESTER**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
35		517	Internal Combustion Engine I	Major	3	2	5	4	Introduction to Naval Machinery II
36		297	Maintenance I	Major	3	2	5	4	N/L
37		518	Thermodynamic and Mechanic of Fluids II	Major	2	2	4	3	Thermodynamic and Mechanic of Fluids I
38		519	Electrotechnology and Marine Electronic Technology III	Major	2	2	4	3	Electrotechnology and Marine Electronic Technology II

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39	307	Ship Theory I	Major	2	2	4	3	Naval Construction II
40	487	Maritime Safety I	Major	2	2	4	3	N/L
				<b>SUBTOTAL</b>	<b>14</b>	<b>12</b>	<b>26</b>	<b>20</b>
				<b>TOTAL</b>	<b>85</b>	<b>74</b>	<b>159</b>	<b>122</b>
---		<b>English</b>		---	---	---	---	---

**VI SEMESTER**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PREREQUISITES
					T	P	TOTAL HOURS		
41		521	Metallurgical and Tools Machinery	Major	2	2	4	3	Maintenance I
42		493	Ship Theory II	Major	2	2	4	3	Ship Theory I
43		303	Maintenance II Internal	Major	3	2	5	4	Maintenance I
44		520	Combustion Engine II	Major	3	2	5	4	Internal Combustion Engine I
45		496	Maritime Safety II	Major	2	2	4	3	Maritime Safety I
46		522	Electrotechnology and Marine Electronic Technology IV	Major	2	2	4	3	Electrotechnology and Marine Electronic Technology III
				<b>SUBTOTAL</b>	<b>14</b>	<b>12</b>	<b>26</b>	<b>20</b>	
				<b>TOTAL</b>	<b>99</b>	<b>86</b>	<b>185</b>	<b>142</b>	
---			<b>English</b>		---	---	---	---	---

**SUMMER COURSE (3)**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PREREQUISITES
					T	P	TOTAL HOURS		
---		173	Maritime Seminars III	Major	---	---	---	---	N/L
---		178	Maritime Seminars IV	Major	---	---	---	---	N/L
47		523	Maritime Employment Health	Major	2	2	4	3	N/L
48		524	Introduction to Bridge Watchkeeping	Major	2	2	4	3	N/L
49		668	Technical Workshop Management	Major	2	2	4	3	Metallurgical and Tools Machinery
50		423	Optative Subject	----	2	2	4	3	N/T
				<b>SUBTOTAL</b>	<b>8</b>	<b>8</b>	<b>16</b>	<b>12</b>	
				<b>TOTAL</b>	<b>107</b>	<b>94</b>	<b>201</b>	<b>154</b>	

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FOUR YEAR  
VII SEMESTER**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
51		305	Advanced Workshop I	Major	2	2	4	3	Metallurgical and Tools Machinery
52		526	Steam Boiler and Gas Turbine I	Major	2	2	4	3	Thermodynamic and Mechanic of Fluids II
53		236	Automatic Control Systems I	Major	2	2	4	3	Electrotechnology and Marine Electronic Technology IV
54		527	Engine Watchkeeping I	Major	3	2	5	4	N/L
55		528	Marine Refrigeration and Air Condicional Compressors I	Major	2	2	4	3	Thermodynamic and Mechanic of Fluids II
56		529	Auxiliary Machinery I	Major	2	2	4	3	Internal Combustion Engine II
57		151	Technical Maritime English I	Major	3	2	5	4	N/L
<b>SUBTOTAL</b>					<b>16</b>	<b>14</b>	<b>30</b>	<b>23</b>	
<b>TOTAL</b>					<b>123</b>	<b>8</b>	<b>231</b>	<b>177</b>	

**VIII SEMESTER**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
58		530	Advanced Workshop II	Major	2	2	4	3	Advanced Workshop I
59		531	Steam Boiler and Gas Turbina II	Major	2	2	4	3	Steam Boiler and Gas Turbina I
60		275	Automatic Control Systems II	Major	2	2	4	3	Automatic Control Systems I
61		532	Engine Watchkeeping II	Major	3	2	5	4	Engine Watchkeeping I
62		533	Marine Refrigeration and Air Condicional Compressors II	Major	2	2	4	3	Marine Refrigeration and Air Condicional Compressors I
63		534	Auxiliary Machinery II	Major	2	2	4	3	Auxiliary Machinery I
64		364	Technical Maritime English II	Major	3	2	5	4	Technical Maritime English I
<b>SUBTOTAL</b>					<b>16</b>	<b>14</b>	<b>30</b>	<b>23</b>	
<b>TOTAL</b>					<b>139</b>	<b>122</b>	<b>261</b>	<b>200</b>	

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**FIFTH YEAR  
IX SEMESTRE**

Nº	ABREV	CÓDE	SUBJECT	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
65		669	Sea Project	Major	2	8	10	6	To approved all the subjects
<b>SUBTOTAL</b>					<b>2</b>	<b>8</b>	<b>10</b>	<b>6</b>	
<b>TOTAL</b>					<b>141</b>	<b>130</b>	<b>271</b>	<b>206</b>	

TOTAL OF THE BACHEROL OF SCIENCE IN NAUTICAL ENGINEERING IN NAVAL MACHINERY	THEORICAL HOURS	PRACTICAL HOURS	TOTAL OF HOURS	TOTAL OF CREDITS
	141	130	271	206

**OPTATIVES SUBJECTS**

Nº	ABREV	CÓDE	SUBJECTS	FIELD TO STUDY	HOURS			CR	PRERREQUISITES
					T	P	TOTAL HOURS		
			Complementary course to applied Information Technology	Science-Humanities	2	2	4	3	N/L
			Hydraulics Systems	Major	2	2	4	3	N/L
			Complementary Course to Workshop Management Project	Major	2	2	4	3	N/L
			Management	Administration-Management	2	2	4	3	N/L
			Noise and Vibrations on Main Engine	Major	2	2	4	3	N/L
			Electric and Autogenic Welding I	Major	2	2	4	3	N/L
			Enterprise Development	Science-Humanities	2	2	4	3	N/L
			Research Methodology	Science-Humanities	2	2	4	3	N/L
			Human Resource Management	Administration-Management	2	2	4	3	N/L
			Electric and Autogenic Welding II	Major	2	2	4	3	N/L