

## FIRST YEAR

### I SEMESTER

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
1	Mathematics I	Scientific - Humanistic	4	N/T
2	Physics I	Scientific - Humanistic	4	N/T
3	Chemistry I	Scientific - Humanistic	3	N/T
4	General biology	Specialty	3	N/T
5	Graphic Expression I	Scientific - Humanistic	2	N/T
6	Materials science	Specialty	3	N/T
		<b>SUBTOTAL</b>	<b>19</b>	
---	English	---	---	

### II SEMESTER

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
7	Mathematics II	Scientific - Humanistic	4	Mathematics I
8	physics II	Scientific - Humanistic	4	Physics I
9	chemistry II	Scientific - Humanistic	3	Chemistry I
10	Marine facilities	Specialty	3	N/T
11	Marine ecology	Specialty	3	General biology
12	Applied Computing	Scientific - Humanistic	2	N/T
		<b>SUBTOTAL</b>	<b>19</b>	
		<b>TOTAL</b>	<b>38</b>	
---	English	---	---	

### SUMMER COURSE ( 1 )

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
13	Marine and Coastal Resources	Specialty	3	Marine ecology
14	Maritime Geography of Panama and the World	Scientific - Humanistic	2	N/T
15	Basic administration	Scientific - Humanistic	3	N/T
16	Oral and written communication	Scientific - Humanistic	2	N/T
		<b>SUBTOTAL</b>	<b>10</b>	

		<b>TOTAL</b>	<b>48</b>	

## SECOND YEAR

<b>III SEMESTER</b>				
<b>Nº</b>	<b>NAME</b>	<b>TRAINING CAMP</b>	<b>CR</b>	<b>PREREQUISITES</b>
17	Mathematics III	Scientific - Humanistic	4	Mathematics II
18	Elective subject	-----	3	N/T
19	Instrumental techniques Environmental Analysis	Scientific - Humanistic	3	N/T
20	Material resistance	Scientific - Humanistic	3	Materials science
21	Thermodynamics	Specialty	4	physics II
22	Environmental technology	Specialty	3	N/T
		<b>SUBTOTAL</b>	<b>20</b>	
		<b>TOTAL</b>	<b>68</b>	
---	English	---	---	

<b>IV SEMESTER</b>				
<b>Nº</b>	<b>NAME</b>	<b>TRAINING CAMP</b>	<b>CR</b>	<b>PREREQUISITES</b>
23	Higher Mathematics for Engineers	Scientific - Humanistic	4	Mathematics III
24	Environmental Engineering I	Specialty	4	Building Materials I
25	Electrical engineering and electronics	Specialty	3	Physics II
26	Effluent Treatment and Waste Emissions	Specialty	3	Chemistry II
27	Environmental economics	Specialty	3	Basic administration
28	Marine contamination	Specialty	3	Marine facilities
---	English	---	---	---
		<b>SUBTOTAL</b>	<b>20</b>	
		<b>TOTAL</b>	<b>88</b>	

<b>SUMMER COURSE ( 2)</b>				
<b>Nº</b>	<b>NAME</b>	<b>TRAINING CAMP</b>	<b>CR</b>	<b>PREREQUISITES</b>
<b>29</b>	Evaluation of Environmental Pollution	Specialty	3	Marine contamination
<b>30</b>	Elective subject	-----	3	N/T
<b>31</b>	Basic Statistics	Scientific - Humanistic	3	Mathematics III
<b>32</b>	General Accounting	Scientific - Humanistic	3	N/T
<b>SUBTOTAL</b>			<b>12</b>	
<b>TOTAL</b>			<b>100</b>	Indice

## THIRD YEAR

<b>V SEMESTER</b>				
<b>Nº</b>	<b>NAME</b>	<b>TRAINING CAMP</b>	<b>CR</b>	<b>PREREQUISITES</b>
<b>33</b>	Applied Statistics	Scientific - Humanistic	3	Basic Statistics
<b>34</b>	Meteorology and Oceanography	Specialty	4	Instrumental techniques Environmental Analysis
<b>35</b>	Water treatment	Specialty	3	Effluent Treatment and Waste Emissions
<b>36</b>	Marine geology	Specialty	3	N/T
<b>37</b>	Elective subject	Specialty	3	N/T
<b>38</b>	Environmental Engineering II	Specialty	3	Environmental Engineering I
<b>SUBTOTAL</b>			<b>19</b>	
			<b>119</b>	

<b>VI SEMESTER</b>				
<b>Nº</b>	<b>NAME</b>	<b>TRAINING CAMP</b>	<b>CR</b>	<b>PREREQUISITES</b>
<b>39</b>	Process and Product Engineering	Specialty	4	Environmental Engineering I
<b>40</b>	Environmental Toxicology and Public Health	Specialty	3	Evaluation of Environmental Pollution
<b>41</b>	Air and noise pollution	Specialty	3	Meteorology and Oceanography
<b>42</b>	Maritime Environmental Management	Specialty	3	Marine ecology
<b>43</b>	Coastal infrastructure	Specialty	3	Marine geology
<b>44</b>	Formulation and Evaluation of Marine Projects	Administrativo-Gerencial	3	General Accounting

	<b>SUBTOTAL</b>	<b>19</b>	
	<b>TOTAL</b>	<b>138</b>	

### SUMMER COURSE ( 3 )

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
46	Shipboard Pollution Prevention	Specialty	4	Marine contamination
47	Panama Canal Engineering I	Specialty	3	N/T
48	Elective subject	---	3	N/T
49				
		<b>SUBTOTAL</b>	<b>10</b>	
		<b>TOTAL</b>	<b>148</b>	

## FOURTH YEAR

### VII SEMESTER

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
50	Fundamentals of Industrial Safety	Specialty	3	N/T
51	Investigation methodology	Scientific - Humanistic	3	N/T
52	Ships - tank	Specialty	3	Marine facilities
53	Climate change	Specialty	3	N/T
54	Panama Canal Engineering II	Specialty	3	Panama Canal Engineering I
55	Environmental impact on marine and coastal systems	Specialty	3	Maritime Environmental Management
		<b>SUBTOTAL</b>	<b>18</b>	
		<b>TOTAL</b>	<b>166</b>	

### VIII SEMESTER

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
56	Natural hazards	Specialty	4	Climate change
57	Hydrology and Hydraulics	Specialty	4	N/T
58	Renewable energy	Specialty	4	Process and Product Engineering
59	Technical English ( Maritime-Environmental )	Specialty	4	N/T
60	Elective subject	---	3	N/T
		<b>SUBTOTAL</b>	<b>19</b>	
		<b>TOTAL</b>	<b>185</b>	

## FIFTH YEAR

### IX SEMESTER

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
61	Moral and ethic	Scientific - Humanistic	3	N/T
62	Elective subject	---	2	N/T
63	Graduation work (Thesis , Professional Practice or Graduate Courses )	Specialty	12	Eight semesters approved
<b>SUBTOTAL</b>			<b>17</b>	
<b>TOTAL</b>			<b>202</b>	

Nº	NAME	TRAINING CAMP	CR	PREREQUISITES
	Seminars Maritime	---	3	N/T
	Panama Canal expansion project	---	3	N/T
	Chemical technology	---	3	N/T
	Printing Technology	---	3	N/T
	Update on Marine Environmental Engineering	---	3	N/T
	Electives Other Races	---	3	N/T
	Environmental legislation and Maritime	---	3	N/T
	Environmental education	---	3	N/T
	Information systems	---	3	N/T
	Limnology	---	3	N/T
	Marine Environmental Audits	---	3	N/T
	Marine microbiology	---	3	N/T
	Update on Marine Environmental Engineering	---	3	N/T
	Electives of Other Races	---	3	N/T