

# PROFESSIONAL ENGINEER

## Summary Statement

These are the competency Units and Elements. These elements must be addressed in the Summary Statement (see Section C). If you are applying for assessment as a Professional Engineer, you will need to download this page, complete it and lodge it with your application.

Competency Element	A brief summary of how you have applied the element	Paragraph number in the career episode(s) where the element is addressed
<b>PE1 KNOWLEDGE AND SKILL BASE</b>		
PE1.1 Comprehensive, theory-based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline	<p>The technical project activities were accomplished with the conceptual skills usage in the marine engineering field. I attained the following projects:</p> <ul style="list-style-type: none"> <li>• Design of a Ship</li> <li>• Live Dry Docking Modle Demonstration.</li> <li>• Design and Fabrication of Power-Pole Marine Propulsion Unit</li> </ul>	CE 1.3, CE 2.4, CE 3.4
PE1.2 Conceptual understanding of the mathematics, numerical analysis, statistics and computer and information sciences which underpin the engineering discipline	I implemented the information sciences activities mainly for analyzing the technical issues linked with the marine engineering domain.	CE 1.12, CE 2.11, CE 3.11
	I carried out cargo structure research with the usage of Marine Engineering skills and it was followed with the web frame structure analysis.	CE 1.6
	I executed the working on the floating dry docks which worked with the structures support with dimension, strengths and lifting displacement.	CE 2.6
PE1.3 In-depth understanding of specialist bodies of knowledge within the engineering discipline	I obtained the output parameters utilizing my marine engineering understanding which resulted in the efficiencies, losses, power of shaft, and speed determination.	CE 3.6
	<p>I carried out adequate research regarding the factors associated with the marine engineering domain.</p> <p>I calculated the hull form which was estimated well based on the requirements of the ship owner and sampled ships. Moreover, it assisted well</p>	CE 1.3, CE 2.7, CE 3.4  CE 1.7

	<p>in the determination of the preliminary equation.</p> <p>I used dry docks which were based on the construction maintenance along with the ship, boat, and other watercrafts maintenance.</p> <p>I mounted the electrical motor with 1HP on the frame right end side and the propeller shaft was connected with the usage of the flange. I utilized the bearings for the tail shaft which were not mainly worked as the stern tube resulted in bearing the limit due to the unavoidable coupling to the vessel.</p>	<p>CE 2.7</p> <p>CE 3.9</p>
<p>PE1.4 Discernment of knowledge development and research directions within the engineering discipline</p>	<p>I developed the knowledge principle which was relied on the conceptual issues related to the marine engineering objectives.</p> <p>I tested the draft condition from 0 to 8m with the 1m as each draft step. I then obtained the outcome.</p> <p>I made decent research on the slime which was mainly utilized for the diatoms, algae spores and bacteria. I noted that each Nantes was the type of diatom which was found in the seas and ship as well.</p> <p>I utilized the bearings for the tail shaft which were not mainly worked as the stern tube resulted in bearing the limit due to the unavoidable coupling to the vessel. I used the bearing which was similar to the utilized bearings in pumps.</p>	<p>CE 1.4, CE 2.6, CE 3.4</p> <p>CE 1.8</p> <p>CE 2.8</p> <p>CE 3.9</p>
<p>PE1.5 Knowledge of contextual factors impacting the engineering discipline</p>	<p>I applied technical skills for carrying out research related to the marine engineering field for adequately getting the required project results.</p> <p>I obtained the large angle stability as indicated in the figure and it showed the hull parameters which included the maximum sectional area, displacement, water plane area at various heel angles.</p>	<p>CE 1.10, CE 2.11, CE 3.12</p> <p>CE 1.9</p>

	<p>I worked on the blasting which was according to the ISO standards.</p> <p>I worked on the model which resulted in supplying electrical energy of 220V to the prime mover and it converted the electrical power to the mechanical power resulted in giving the motor rotatory motion.</p>	<p>CE 2.8</p> <p>CE 3.9</p>
<p>PE1.6 Understanding of the scope, principles, norms, accountabilities and bounds of contemporary engineering practice in the specific discipline</p>	<p>I understood the norms with the contemporary engineering practices specified well with the usage of the marine engineering knowledge.</p> <p>I tested the basic ship maneuvers test which was considered as the zigzag test along with the analysis made on the preliminary parameters of the ship which were calculated accordingly.</p> <p>I noted that the welding replacement was the only considerable option. I pointed damaged occurred at the cating system from the external factors.</p> <p>I also worked on an increased shaft power which led towards the increase in the propeller speed. It resulted in showing that the shaft power was directly related to the propeller speed.</p>	<p>CE 1.8, CE 2.6, CE 3.4</p> <p>CE 1.10</p> <p>CE 2.10</p> <p>CE 3.14</p>
<p><b>PE2 ENGINEERING APPLICATION ABILITY</b></p>		
<p>PE2.1 Application of established engineering methods to complex engineering problem solving</p>	<p>I established the engineering practices which were mainly relied on the technical concepts linked with the marine engineering field.</p> <p>I implemented marine engineering knowledge for carrying out the ship design testing condition and analyzed the stability module well.</p> <p>I synchronized all the motors as the vessel was raised for insuring the point that each haul worked at the same rate.</p> <p>I used the power formula mainly for driving the shaft for the effective power</p>	<p>CE 1.4, CE 2.12, CE 3.8</p> <p>CE 1.6</p> <p>CE 2.4</p> <p>CE 3.4</p>

	<p>production of 0.5kW for propelling the vessel. I calculated the output powers, forces, and effective power.</p>	
<p>PE2.2 Fluent application of engineering techniques, tools and resources</p>	<p>I applied fluent engineering practices utilizing the marine engineering skills for achieving the related project objectives.</p> <p>I conducted a complex structure analysis along with the weld seams, edges, and corners for the full coat application.</p> <p>I selected the shaft which was chrome and nickel in addition to the mild steel.</p>	<p>CE 1.6, CE 2.10, CE 3.9</p> <p>CE 2.6</p> <p>CE 3.7</p>
<p>PE2.3 Application of systematic engineering synthesis and design processes</p>	<p>I executed the systematic practices in the marine engineering field for getting the needed project outcome.</p> <p>I applied the technical knowledge for obtaining the ship speed and it was 15 knots with the 20 degrees rudder angle.</p> <p>I made decent research on the slime which was mainly utilized for the diatoms, algae spores and bacteria. I noted that each Nantes was the type of diatom which was found in the seas and ship as well.</p> <p>I mounted the electrical motor with 1HP on the frame right end side and the propeller shaft was connected with the usage of the flange.</p>	<p>CE 1.9, CE 2.8, CE 3.11</p> <p>CE 1.8</p> <p>CE 2.8</p> <p>CE 3.9</p>
<p>PE2.4 Application of systematic approaches to the conduct and management of engineering projects</p>	<p>I conducted the technical expertise utilization for the purpose of attaining the results within the specified project tenure.</p> <p>I selected the propeller which was the controller pitch propeller with the one number of the propeller. Moreover, I determined the thrust of the propeller as shown in the equation underneath.</p> <p>I analyzed the animal fouling presence on the ship which was the sign that the pain reached the service life end.</p>	<p>CE 1.10, CE 2.12, CE 3.12</p> <p>CE 1.9</p> <p>CE 2.9</p>

	I worked on the model which resulted in supplying electrical energy of 220V to the prime mover and it converted the electrical power to the mechanical power resulted in giving the motor rotatory motion.	CE 3.10
<b>PE3 PROFESSIONAL AND PERSONAL ATTRIBUTES</b>		
PE3.1 Ethical conduct and professional accountability	I professionally executed the project objectives ethically under the project supervisor's directions.	CE 1.4, CE 2.6, CE 3.6
	I implemented the preliminary ship design which provided adequate details regarding the design stage in an ethical manner.	CE 1.13
	I applied the project activities ethically in the entire work tenure.	CE 2.12
	I worked on executing the technical duties in an ethical way while coordinating with the project supervisor.	CE 3.12
PE3.2 Effective oral and written communication in professional and lay domains	I effectively applied the oral and written communication skills in the project for getting the associated project results.	CE 1.11
	I maintained the decent communication skills throughout the project.	CE 2.10
	I worked on the project with the continuous communication maintained in the entire work tenure.	CE 3.11
PE3.3 Creative innovative and proactive demeanour	I proactive applied the creative innovative techniques in the work for the purpose of achieving the technical objectives in the project.	CE 1.8, CE 2.7, CE 3.6
	I estimated the hull weight with the utilization of the statistical analysis regression.	CE 1.11
	I adopted the phenomena of high-pressure water cleaning in which	

	freshwater cleaning worked as an important element in the removal of the fouling, salts and other related contaminants.	CE 2.9
PE3.4 Professional use and management of information	<p>I managed the information with the professional conceptual skills usage resulted in achieving the related project goals.</p> <p>I analyzed the built codes based on the zigzag test and modified the codes for satisfying the designed ship.</p> <p>I applied techniques which were properly utilized for an extensive single spot cleaning.</p> <p>I also worked on the tapered utilizing the concepts related to the marine engineering field. I obtained the flange thickness which was 0.8 times.</p>	<p>CE 1.10, CE 2.9, CE 3.8</p> <p>CE 1.10</p> <p>CE 2.11</p> <p>CE 3.10</p>
PE3.5 Orderly management of self, and professional conduct	<p>I conducted the project activities well with the self-management orderly skills maintained in the work tenure.</p> <p>I used the Maxsurf stability module for testing the 3D hull stability of the ship designed.</p> <p>I implemented the pitting corrosion which was based on receiving more attention and particularly deep pits were not cleaned from salt along with other contaminants.</p> <p>I connected the motor to the intermediate point which was for transmitting the energy to the propeller using a shaft and it produced different sources loss like inertial weight and fraction.</p>	<p>CE 1.9, CE 2.8, CE 3.9</p> <p>CE 1.9</p> <p>CE 2.10</p> <p>CE 3.10</p>
PE3.6 Effective team membership and team leadership	<p>I effectively managed the team membership project for the purpose of getting the required results of the project.</p> <p>The effective team membership skills were maintained under the project supervisor's guidance.</p> <p>I constantly incremented my team</p>	<p>CE 1.12</p> <p>CE 2.12</p> <p>CE 3.11</p>

	membership skills in the project while coordinating with the project supervisor.	
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