The California State University
COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY (COAST)

STUDENT INTERNSHIP APPLICATION FORM - SUMMER 2019

Application Deadline: Monday, March 4, 2019, 5:00 p.m. PST

All application materials must be received by the deadline. Applications received after the deadline will not be considered. Submit your application form, resume and transcripts (compiled in that order; henceforth referred to as application package) as ONE PDF file named *ApplicantLastName_FirstName_InternshipName.pdf* as an attachment to the Student Internship Submission Form (http://bit.ly/COAST2019InternshipSubmission).
See page 5 of this application form for detailed instructions about Required Additional Materials.

Note: You must submit a separate application package for EACH internship you wish to be considered for. You may submit a maximum of FOUR application packages.

Internship Information

Internship Host:	Marine Applied Research & Exploration
Internship Title:	Marine Engineer
Internship Location:	Richmond

Applicant Information

First Name:	Christopher	Last Name:	Ewert
Student ID:		CSU Campus:	San Luis Obispo
Primary Email:		Major:	Mechanical Engineering
Phone:		Overall GPA:	2.9
Status (Soph, Junior, Senior, Grad Student):	Junior	Anticipated Graduation (mm/yyyy):	06/2020
Date Spring Semester/Quarter Ends:	6/13/2019	Date Available to Start Internship:	6/16/2019
		Will you be enrolled at a CSU for Fall 2019? (Y/N)	Y

Have you previously been employed by, interned with, or volunteered for the internship host?	**No**

Comments (If yes, please describe):

Relevant Experience

For each section below, provide the information requested that complements the areas of knowledge listed in the Preferred Experience and Capabilities and/or Eligibility/Requirements sections of the internship you have selected. The boxes below will expand as you type; please feel free to use as much space as you need.

Academic coursework (e.g., marine ecology or biology, fishes of California, statistics, etc.):

Philosophy of Design which has taught us to think simply before trying to solve a complex problem.
Fluid Mechanics which has given me great insight on pressure and buoyancy.
Technical Writing for Engineers taught me how to write critically, and effectively convey my findings and ideas.
Measurement and Data Analysis gave me a statistical approach to understanding a data set.
Programming for Engineering Students Taught me basics of MATLAB
Intermediate Dynamics applied MATLAB knowledge to solve moving systems
Intro to Detailed Design w/ Solidworks Broadened my knowledge of Solidworks, taught me how to read and part schematics.

Computer programs in which you are proficient (e.g., Microsoft Word, Excel, Access, R, Matlab, ArcGIS, minitab, Solidworks, etc.):

I am proficient in several programs, most relevant I believe is Solidworks and MATLAB of which I have taken several courses for both, plus some time in highschool. I'm also competent in Microsoft Excel, PowerPoint, Word, along with some background with C++.

Field and/or laboratory experience (include experience gained through coursework as well as independent study):

I recently went to the Monterey Bay Aquarium Research Institute, to test our water sampling device that we mounted on an ROV. A known sample was released at a given depth and we attempted to collect as accurate as a sample from that depth as possible. In terms of physical skills, I have taken several Manufacturing Process Labs, which include learning how to cast parts and weld. I have taken a Circuit Theory Lab where I learned how to construct basic circuits and how to operate an oscilloscope. I have also taken a Design Lab, where we analyzed, loading, fatigue, and stresses present in given shapes and materials. I have taken a Data Analysis Lab where we learned how to use various instruments common in the engineering field and applied statistical knowledge to accurately interpret the recorded data.

Interest and Qualifications

Please complete the sections below. The boxes below will expand as you type; please feel free to use as much space as you need.

Please describe why you are interested in a summer internship in general. What do you hope to gain, learn and experience?

Most important to me is industry experience. I have a belief that students are 'theoretical engineers' they know the theory very well but cannot seem to apply it. Being in a professional industry is a necessity to make the transition from theory to application. I'm trying to work on my transition. But more importantly I'm trying to have the proper company transition me to form good habits. I want to be around brilliant minds, with drive and passion for what they are doing. I want to feed off their inspiration and apply their teachings to my future careers.

How do you feel the internship you have selected will complement your educational experience at the CSU?

From my understanding Marine Applied Research and Exploration is a conservation company, built upon researching and documenting our fragile ecosystems. More important then bringing, building and design technics back to school, is bringing back information that I can share with other students about how our world is changing and what we can do as individuals to try and slow that process. As much as I want to learn engineering, I want to learn how to be sustainable. I believe this internship will give me a broader knowledge of global effects on our oceans, which I will apply to designing future parts and systems.

What are your educational and career goals?

I hope to achieve a master's in mechanical engineering as well as a minor in mathematics. At the moment I find my self more involved and more interested in my course work. For a career I see myself in either the marine or aerospace industry. I hope I can partake in an internship or co-op for both at some point. I would like a career where I can spend time outside, either testing or collecting information, I also hope to have a career that allows me to live near the ocean, as I spend a lot of time, kayaking, surfing and swimming.

Please describe your interest in the internship you have selected.

- **What interests you most?**
- **Why do you feel you are uniquely qualified for this opportunity? Please be sure to include your specific skills and qualifications and address the Preferred Experience and Capabilities section of the internship description.**

Please be as detailed as possible. This section is extremely critical in evaluating your application. The box below will expand as you type; please feel free to use as much space as you need.

I'm most interested in working with your senior engineer on MARE's ROV's. The idea of working hands on with marine equipment, testing out at sea, and innovating with a brilliant professional, is in my opinion the perfect job. I have recently taken on a project very similar to the job description. My project was to design with a team, a water sampling device that mounts to a Trident ROV (small wing shaped ROV), I worked with several other students and we ended up designing a pump system mounted to the bottom, that fed water through a one-way valve to a sterilized sample bag. My specific role was to design the sample bag. What I ended up creating, was a modified, collapsible bag that was attached to the pump by a push-to-connect fitting. The bag, when collapsed, would add little buoyancy when the ROV was attempting to dive, and was fluid dynamic enough to not severely obstruct the ROV's natural movement underwater. Since the bag was detachable, multiple samples could be retrieved. I believe this project has given me a simple, but very important look into the issues that marine engineers face daily. Although there is so much more to learn, I'm confident it will take significantly less time to bring me up to speed on current projects. This is very expensive equipment subjected to the most extreme conditions on the planet.

Part of the preferred experiences and capabilities is being able to assemble equipment and manufacture various parts. One of my projects earlier this year was to reconstruct the battery housing for an older ROV (openROV V2.8). I was able to assemble, seal, solder and mount the modified battery back given limited instructions. I have also had a fair deal of classes in manufacturing and product design with both metal and wood, in college and in high school. I will be able to find my way around a shop, and can construct simple parts on my own, and more complex parts with minimal instruction. I'm proficient in Solidworks and have done a good amount of 3D printing and rapid modeling. I have also had some experience with microcontrollers, specifically one called an 'Arduino' that I coded with C++ of which I have used to successfully completed multiple projects.

I also consistently document my work, some required others for my own personal benefit. All of my labs require concluding reports, that I and my peers have collaborated on and edited until content with the final result. I also have a personal Website that I like to add current and relevant projects to. I started the site in high school and have tried to maintain it through college. If desired I can and would be more then happy to provide a link.

Given the opportunity to working around a group of people so intelligent, talented and passionate about our oceans would be humbling. Even if I do not get the chance to be a part of your team, it reassures me that there are people, researching, reporting and in sighting change for an ocean we all depend on in a world that is rapidly altering. Thank you for your time and I look forward to hearing back from you.

Christopher Ewert