

STUDENT MANUAL

2013 – 2014



SEATTLE
UNIVERSITY

College of Science & Engineering
Project Center

SCIENCE AND ENGINEERING MANUAL
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▪ "TO DO" LIST FOR THE BEGINNING OF THE SCHOOL YEAR ▪

In addition to reading the manual, you and your team will need to complete the following tasks before your project gets underway:

To Do List

____ Review this manual in its entirety and take note of the calendar and due dates.

____ Fill out and submit the following forms to ENGR 500 by **Friday, October 4, 2013**. These forms are located on the Project Center Website at <http://www.seattleu.edu/projectcenter>

- Copy Card Security Form (one form per team)
- Student Team Information (one form per team)
- Student Release – Confidentiality and Proprietary Document (one form per person)
- Project Room Conduct (one form per person)

____ Team offices are assigned by the team's department. Get the office cipher code from your department.

____ Pick up your team copy card from Project Center administrative assistant in ENGR 500.

____ Budget estimates for projects are due for Project Center approval by **November 8, 2013** at 4pm.

If you have any questions, feel free to stop by to see the Project Center administrative assistant in ENG 500 or call (206) 296-5503 for help.

▪ PROJECT CENTER DIRECTORY ▪

Your Team's Mailing Address

Science and Engineering Project Center
(Specify your name and Project #)
 Seattle University
 901 12th Avenue
 PO Box 222000
 Seattle, WA 98122-1090

General Phone: (206) 296-2822
Fax: (206) 296-2179

Science & Engineering Project Center Office

<u>Science & Engineering Project Center Office</u>	<u>Phone</u>	<u>Email</u>	<u>Location</u>
Jean Jacoby, Director	x5978	jacoby	E-500B
Christopher Stipe, Acting Director – Fall Quarter	x6941	stiphec	E-512
Ernie Lou, Corporate Relations Manager	x2822	loue	E-404A
Arielle Fissmer, Project Center Administrative Assistant	x5503	fissmera	E-500

Project Coordinators

Nirmala Gnanapragasam, CEE	x5522	nirmalag	E-523
Al Moser, ECE	x5963	almoser	BA-113
Yen-Lin Han, ME	398-4315	hanye	E-514
Jeff Gilles, CSSE	x5978	gillesj	E-515

Lab Managers

Fred Jiencke, CEE	x5528	jenckef	E-102
Gary Fernandes, ECE	x5971	fernandg	BA-218
Jeff Wilhite, ME	x5506	wilhitej	E-107
Renny Philipose, CSSE	x5514	philipr	E-413B

Departmental Administrative Assistants

Joy Crevier, CEE	x5520	crevierj	E-525
Teresa Beery, ECE	x5970	beeryt	BA-209
Joy Crevier, ME	x5540	crevierj	E-525
Mike Smith, CSSE	x5510	mikesme	E-526

Other Offices

Bookstore	x5820		USVC
Event Support Services (Room reservations)	x5620		PAVL-050
Help Desk (Computer questions)	x5571		
Classroom Support	x6220		
Lemieux Library and McGoldrick Learning Commons	x6210		
Mailing Services	x6199		PAVL-020
Public Safety (EMERGENCY - X5991)	x5990		USVC-102
Campus Support Services (Purchasing)	x6490		LYNN Mezz
Reprographic Services	x6180		PAVL-020
Writing Center	x6239		McGoldrick

▪PROJECT CENTER ACADEMIC YEAR CALENDAR▪

September 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2 LABOR DAY	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20 UNIVERSITY CONVOCAATION	21
22	23	24	25 FALL QUARTER: CLASSES BEGIN	26	27	28
29	30					

October 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3 MASS OF THE HOLY SPIRT (classes between 10am—1pm cancelled)	4 SIGNED PROJECT FORMS DUE BY 4PM	5
6	7 FALL WORKSHOP 10:30—11am sponsor orientation 11—12:30pm students, faculty luncheon CAMPION BALLROOM	8	9	10	11	12
13	14	15	14 FALL JOINT SESSION #1: PROJECT CENTER INTRO & IP PIGOTT AUDITORIUM	17	18	19
20	21 FALL JOINT SESSION #2: HOW TO GIVE A PRESENTATION PIGOTT AUDITORIUM	22	23	24	25	26
27	28 FALL JOINT SESSION #3 TEAM BUILDING STUDENT CENTER 160	29	30	31		

November 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8 PROJECT BUDGETS DUE BY 4PM	9
10	11 VETERAN'S DAY (no classes)	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27 THANKSGIVING BREAK	28 THANKSGIVING DAY	29 THANKSGIVING BREAK	30

December 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9 FINAL EXAM WEEK	10	11	12	13	14
15 WINTER BREAK BEGINS	_____→					21
22	_____→					28
29	_____→		31			

January 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
			→			
5 WINTER BREAK ENDS	6 WINTER QUARTER: CLASSES BEGIN	7	8	9	10	11
12	13	14	15	16	17	18
19	20 MARTIN LUTHER KING JR. DAY (no classes)	21	22	23	24	25
26	27	28	29	30	31	

February 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17 PRESIDENT'S DAY (no classes)	18	19	20	21	22
23	24	25	26	27	28	

March 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3 PROJECTS DAY PROGRAM PARAGRAPHS DUE BY 4PM	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18 FINAL EXAM WEEK	19	20	21	22
23 SPRING BREAK	24	25	26	27	28	29
30	31 SPRING QUARTER: CLASSES BEGIN					

April 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10 MISSION DAY (classes before 1:30pm cancelled)	11	12
13	14	15	16	17	18 EASTER BREAK (no classes)	19
20	21	22	23	24	25	26
27	28	29	30			

May 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23 PROJECT POSTERS DUE BY 4PM	24
25	26 MEMORIAL DAY (no classes)	27	28 PROJECT REPORTS DUE BY 4PM	29	30	31

June 2014

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6 PROJECTS DAY! 11:45am—5pm SULLIVAN HALL	7
8	9 FINAL EXAM WEEK	10	11	12	13 FINAL DAY TO CHECK OUT WITH PROJECT CENTER! <i>Must have ALL receipts, team copy card and check out forms in to Arielle in ENGR 500 by 4PM!</i>	14 BACCALAUREATE
15 COMMENCEMENT	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

▪ THE IMPORTANCE OF DEADLINES ▪

The deadlines on the Project Center academic calendar have been carefully selected to provide you with sufficient time to complete and turn in work. **To meet deadlines, you will need to plan accordingly!** Meeting deadlines is an important component of the senior design courses. Failure to meet deadlines will be reported to your faculty advisor and the Project Center director, and may affect your grade in the course.

If you have any questions, contact Arielle Fissmer at x5503 in ENGR 500, or via email at fissmera@seattleu.edu. If you are a CS or MSE student please contact Mike Smith at x5510 in ENGR 526, or at mikesme@seattleu.edu.

▪ BUDGET AND SPENDING ▪

Managing your senior design project includes budgeting. You are required to track your expenditures and manage your budget. It is your responsibility to familiarize yourself with the following budget procedures and policies for your senior design project.

Putting Your Budget Together—DUE to Project Center on November 8th, 2013

Some Budgeting Questions to Consider:

- How much money will we need to carry out our project?
- What reference materials and supplies will we need?
- How much will we be spending for transportation costs and phone calls?
- Will we need to purchase special equipment or software?

The proposed budget will be based on your estimations of how much your project will cost. Your expenditures are classified into five categories: *reference materials, office supplies, expendable supplies, capital equipment, and team building expenses* (Note: See “Team Building Expenditure” section below for further details). Report your projected budget on the **Budget Request Form**. Please report budget revisions to your faculty and Project Center staff.

Purchases Become Property of the Project Center or Sponsor

Please be aware that all expenditures are strictly for use in carrying out your project. All purchases become the property of the Project Center for use by future project teams or they are given to the project sponsor per contract terms.

Keep Track of Your Budget

Learning to manage your budget is an important part of your project experience. Your team must keep track of your budget. If you find any discrepancies, discuss the matter with the Project Center administrative assistant.

Team Building Expenditure

One of the expenditure categories your team will be keeping track of is *team building*. Before you claim that an expense falls under the category of *team building*, it is important for you to familiarize yourself with the guidelines below. **The guidelines will be strictly enforced.** Failure to comply with

the guidelines will result in expenses that will not be reimbursed. (Note: if you are unsure if an expense is classified as *team building*, check with the Project Center BEFORE you make the purchase.)

Team Building Guidelines:

1. \$150 is allocated to each project team.
2. Funds are to be used for **food purchases or team building activities**. (Examples: buy a pizza for team while working together on the project or go bowling with your team and invite your sponsor liaison and/or faculty)
3. NO alcohol expenses will be reimbursed.
4. Funds may be used anytime during the academic year, but no later than June 9th, 2014.
5. All receipts must list the names of the people at the team building event.
6. All ORIGINAL receipts MUST accompany the Reimbursement Request Form.
7. All ORIGINAL receipts **must be itemized**. Reimbursement requests must also include a receipt showing **method of payment**. For most food establishments this will require **TWO** receipts to be provided for reimbursement. **HINT**: Be sure to ask for the itemized receipt of what you ordered in addition to the payment receipt when you dine at a restaurant. If you do not provide both a method of payment receipt and itemized receipt, you risk not being reimbursed.
8. Reimbursement Request Forms must be submitted to the Project Center Administrative Assistant and are approved by the Project Center Budget Manager.

▪ PURCHASING & REIMBURSEMENT INSTRUCTIONS ▪



PLEASE READ THESE INSTRUCTIONS THOROUGHLY. Mistakes could cost your design team unnecessary loss of time and/or expenses. You must submit reimbursement requests on or before the last day of each quarter!

Design teams may obtain supplies from either the campus Purchasing Department (any purchase over \$500 total), or an outside vendor (purchases under \$500 total)

Outside Vendor (for purchases totaling under \$500)

1. Refer to the Reimbursement Request Form for complete instructions for reimbursement.
 2. Give all the **original** receipts and necessary documents, along with the Reimbursement Request Form, to the administrative assistant, Arielle Fissmer, ENGR 500. CS and MSE students should bring receipts to Mike Smith, ENGR 526.
 3. The Project Center will submit your reimbursement form and any documentation of the purchase to the Controller's Office for a check reimbursement.
 4. When your check arrives, you will be notified to pick it up in ENGR 500.
- ** Reimbursement requests must be made on a quarterly basis and are due by 4pm the last Friday of each quarter** (Example: All reimbursement requests for Fall quarter are due by Friday, December 13th).

Purchasing Department (for purchases totaling over \$500)

1. Complete a Purchase Request Form listing all items needed. Attach printout of item image, number, short description, and price and any special instructions.
2. Bring the completed form and supporting documentation to your faculty advisor for signature and approval.
3. Bring Purchase Request Form plus any supporting documentation to the Project Center administrative assistant, Arielle Fissmer, ENGR 500 **at least two weeks** before the supplies are needed. CS and MSE students should bring forms to Mike Smith, ENGR 526.
4. The Project Center will send your Purchase Request Form, along with a departmental form, to the Purchasing Department.
5. After the Purchasing Department places the order with the vendor, it can take from two days to two weeks for the supplies to arrive (depending on how many orders the vendor may have to fill and whether the item is in stock). **THIS IS WHY IT IS IMPORTANT TO ORDER IN ADVANCE.**
6. When the supplies arrive, the Project Center will contact you to pick them up in ENGR 500.

Purchasing and Reimbursement Tips

1. Alcohol purchases of any kind will not be reimbursed
2. Gas receipts will not be reimbursed. See transportation guidelines for mileage reimbursement and vehicle rental information.
3. Always allow for the unexpected. Make copies for your own records and turn in your requests as soon as you can!
4. Friday, June 13th is the LAST DAY to turn in reimbursement check requests.
5. Remember to make copies of originals for your records.
6. If you make purchases over \$500 independently of the Purchasing Department, the Controller's Office may not be willing or able to reimburse you. Be sure to make all large purchases through Project Center purchasing department procedures.

▪ PROJECT RELATED TRAVEL COSTS ▪

Local Travel Using Personal Vehicle

Local travel is considered to be that travel within a radius of 10 miles of Seattle University. Local travel, such as a supply run, would not normally qualify for mileage reimbursement. An exception to this general rule would be if there were repeated requirements for local travel, such as a project that requires a weekly visit to a sponsoring organization. Such travel could be reimbursed upon the advance approval of the faculty advisor. In accordance with Seattle University's commitment to sustainability, **van rentals or carpooling should be used whenever possible.**

Travel outside the local area is reimbursed, subject to advance approval of the faculty advisor. Automobile travel is reimbursed at the Seattle University rate of .565 cents per mile. There is no reimbursement for gas as this is covered in the mileage reimbursement. A Google map showing start and finishing routes, including miles traveled, is required for mileage reimbursement. Parking costs

associated with travel are reimbursable if you have a receipt. As with other reimbursements, please accumulate requests in amounts of \$25 or more prior to reimbursement.

Renting a School Van or Renting from an Outside Vendor

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P**

PLAN AHEAD! Seattle University vans are available on a first come, first serve basis. The Purchasing Department needs five working days to process paperwork vehicle rentals.

Whether you rent a school van or a vehicle from an outside vendor, your team must register drivers with Public Safety by filling out Vehicle Driver Authorization forms for each driver, available from Public Safety.

After you've registered your drivers with Public Safety, when you want to rent an SU van you will fill out a Vehicle Rental Contract through the Public Safety office or website. The form will require that you indicate the specific dates and times you will need the vehicle and list the registered drivers and their ages. The form also requires the authorization by the Project Center. Bring the completed request form to ENGR 500.

▪ OTHER ADMINISTRATIVE PROCEDURES▪

▪ CAMPUS COPIERS▪

Copy Card & Procedures

The Project Center Administrative Assistant will give each team a copy card to be used for project team related work only. The names of your team members will be on a checklist for your team's copy card. You will be held accountable for this card and will be required to sign a Copy Card Security Agreement. **Cards are \$15 to replace if lost.** This card can be used on the various copy machines throughout campus. Each month your team will be charged for the number of copies made, at approximately 6 cents per copy. Copy cards must be returned to the Project Center by June 13, 2014.

To Use Copier:

- Press
- Press , , ,
- Press
- Swipe card with magnetic stripe down and facing away from the copier
- Leave card in place, and make copies.

When finished...

- Don't forget to remove the card from the machine!
** **Your team will be charged \$15 for a lost card.**

▪ **PARKING ON-CAMPUS FOR VISITORS** ▪

To secure parking for your liaison or other visitors, request parking through the Project Center **at least four days before** the parking is needed. You will not need to secure parking for your liaison(s) for special events.

▪ **PHONE CALLS - LONG DISTANCE** ▪

Your team will be charged for long distance phone calls made on Seattle University phones. Please do not make personal long distance calls on Seattle University phones. Phone bills for all lines are reviewed by the college budget manager on a monthly basis.

▪ **REPORTS and PROJECTS DAY** ▪

Your teams will have a number of deliverables throughout the school year. Follow your department's guidelines for all submissions. Here are some key dates to remember:

Projects Day program paragraphs due March 3, 2014 by 4pm

--Complete edited versions must be approved by department coordinator

Project's Day Poster files due May 23, 2014 by 4pm.

--Follow your department's guidelines for all submissions. Your poster files **MUST** be reviewed by your team advisor and your department coordinator. Your department coordinator will turn the final draft into the Project Center for printing.

Project Report due May 28, 2014 by 4pm

--Follow your department's guidelines for all submissions. Your project reports **MUST** be reviewed by your team advisor and your department coordinator. Your department coordinator will turn the final draft into the Project Center for printing.

▪ **PROJECTS DAY PROGRAM PARAGRAPH SUBMISSION** ▪

At the beginning of March, the Project Center will request that each team turn in a descriptive paragraph about each project that will be used for the Projects Day brochure. The summary should include the following information:

Project Number:

Project Title:

Sponsor:

Sponsor Liaison(s):

Faculty Advisor:

Students:

Description should include: Why the sponsor needs the project done, what problem is to be solved, what the team did to solve the problem, and what specifications and criteria were met by the design solution

Projects Day program paragraphs should be written as though the project has been completed. Paragraphs should be between 80 and 180 words. Both your liaison and your faculty advisor must approve the final draft of your abstract before you submit it to the Project Center.

Sample Paragraph

PROJECT NUMBER: ECE 01.7
PROJECT TITLE: Smart Test Load for Defibrillators: Design and Testing
SPONSOR: Medtronic Physio-Control
SPONSOR LIAISON: Scott Eby
FACULTY ADVISOR: Prof. Robert Heeren
STUDENTS: Wyatt Erickson, Josey Sandoval, Eleazar Santos, Scott Wolf

DESCRIPTION:

Medtronic Physio-Control specializes in the design and manufacture of accurate cardiac tools that help save lives. The company currently manufactures a line of defibrillators that produces a new pulse waveform, which the current test load does not monitor accurately. The company asked the team to redesign the test load to more accurately monitor the new pulse waveform. The team redesigned the circuit using non-inductive low tolerance resistors and high accuracy instrumentation amplifiers. The new test load design produces an accurate representation of the new pulse waveform and also a better low frequency response for the old waveform.

▪ PROJECTS DAY ACTIVITIES AND PREPARATIONS ▪

June 6, 2014

Projects Day

Projects Day is the culminating function for your Project Center experience. You will present your final project to peers, corporate sponsors, potential employers, and university faculty and staff. Check last year's Projects Day program (on Project Center website, www.seattleu.edu/projectcenter) and the Projects Day prep session power point presentation at any time for details about Projects Day.

Presentations

During the week of Projects Day presentation rooms will be available for practice sessions. All presentations will be preloaded on laptops provided by Project Center. Follow your department's guidelines for presentations.

Poster Session

The poster session displays are color posters printed at Seattle University and mounted on foam core boards with a center panel and two side panels that fold in to the center. The center panel is 2' wide and 3' tall and each side panel is 1' wide and 3' tall.

A Display Board template is available for download on the Project Center website. When your team has completed the design, and had it approved by your faculty advisory, give an electronic copy of the final version to ENG 500 for printing and mounting. Follow your department's guidelines for posters, but as a basic guideline posters should include:

- the name of the sponsor (and logo if sponsor has given permission)
- Seattle University signature or seal
- title of the project
- names of team members, faculty advisor, and liaisons

- short description of the project
- information on what the team did on the project and the results using charts, graphics, photographs, screen shots, or other visuals as well as narrative to explain the visuals

During the week of Projects Day, display boards from previous years will be in the hall in front of ENGR 404A.

Each team will have one 6-foot table and one power outlet available for use. Any team needing additional display space or power requirements should coordinate with Project Center.