

Student Outcomes and Performance Indicators – **Faculty Assessment**  
 Department of Engineering & Engineering Technology  
 College of Professional Studies  
 Metropolitan State University of Denver

**CET 4110 (7)**

**SENIOR PROJECT II**

**Semester/year**

**Specific, Measurable Student Behavioral Learning Objectives:**

Upon completion of this course the student should be able to:

1. Revise a project as needed based on Preliminary Report feedback.
2. Construct and demonstrate the functionality of the project.
3. Conduct and evaluate final cost estimating of the project.
4. Track project progress toward completion and document any unforeseen challenges encountered.
5. Identify impediments to project completion and make necessary modifications to the project and plan.
6. Demonstrate critical thinking and analysis in resolving problems encountered.
7. Create a formal presentation of the project technology, cost, and implementation.

ABET	Competency Area	Data Collection
a	an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities	
c	an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes	
d	an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives	
e	an ability to function effectively as a member or leader on a technical team	
g	an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature	
h	an understanding of the need for and an ability to engage in self-directed continuing professional development	
i	an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity	

ADDITIONAL COMMENTS:

PLEASE:

1. MAKE SURE ALL REFERENCES ARE IN Y DRIVE;
2. SAVE THIS FILE UNDER THE COURSE NUMBER, FOR EXAMPLE: CET1000 SPRING 2018.DOC;
3. SEND YOUR REPORT TO LINDA;

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 <Name>

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 <Date>

Following tables define the Performance Indicators for each of the Student Outcomes a through k

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ABET a: an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Identify, formulate, and solve engineering technology problems	Unable to identify the engineering problem	Able to identify and formulate but unable to obtain a solution	70% partial solutions or better	Proper solution and discussions for the solution
Use appropriate skills of the profession to conduct qualitative analysis	Unaware of needs for qualitative analysis	Working on the skills to properly use the identified tools	Use proper skills to obtain 70% partial solution or better	Proficient in using selected skills for qualitative analysis
Use appropriate tools of the profession to conduct quantitative analysis	Unable to identify tool for the needed analysis	Working on the skills to properly use the identified tools	Use proper tools to obtain 70% partial solution or better	Proficient in using selected tools for quantitative analysis

ABET c: an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Select, set up, and use equipment for experiments	Unable to identify proper equipment	Unable to use most of the identified equipment	Able to use the equipment under supervision	Conduct test and measurement properly and safely
Select, set up, and use data collection and analysis software	Not understanding the needs of data collection	Unable to use most of the identified software	Able to use the software under supervision	Properly use of the identified software
Understand the results	Not understanding the results	Some understanding of the results	Understand the results with help	Properly interpret and present the results

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ABET d: an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Establish criteria for engineering technology design problems	Unable to develop or understand design criteria	Understand the design criteria but unable to develop	Understand and developed some criteria in assigned problem	Proper solutions obtained
Develop designs of products, systems, or processes that respond to authentic needs	Unaware of or not understanding the needs	Knowledge or skill set not enough for solving the engineering technology problem	70% partial solution or better	Proper solutions obtained
Take into account the social, economic, or environmental constraints on the design	Unaware of the impacts the issues	Some awareness, but not clear	Understand the issues but unable to incorporate into the design problem	Proper considerations discussed and planned ahead

ABET e: an ability to function effectively as a member or leader on a technical team				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Fulfill Team Role's Duties	Does not perform any duties of assigned team role.	Performs very little duties.	Performs nearly all duties.	Performs all duties of assigned team role.
Share in work of team	Always relies on others to do the work.	Rarely does the assigned work-- often needs reminding.	Usually does the assigned work-- rarely needs reminding.	Always does the assigned work without having to be reminded.
Listen to Other Teammates	Is always talking-- never allows anyone else to speak.	Usually doing most of the talking— rarely allows others to speak.	Listens, but sometimes talks too much.	Listens and speaks a fair amount.

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ABET g: an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Use proper format and grammar in written and oral communications	Unaware of the need of communications in engineering technology practice	Unable to use format and grammar for effective communication	Able to communicate in technical environment	Present properly to both non-technical and technical audience
Use appropriate graphics in oral and written presentations	No understanding of importance of graphics	Unable to produce all graphics needed	Some applications of graphics in presentation	Presentation with proper graphical aids
Paraphrase technical and non-technical literature satisfactorily	Unaware of the need in technical literature	Unable to identify and research for proper literature	Some literature research	Present properly to both non-technical and technical audience

ABET h: an understanding of the need for and an ability to engage in self-directed continuing professional development				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Acknowledge the importance of professional development	Unaware of the needs for continuing professional development	Understand the needs, but show no interests in	Interested	Actively searching for the opportunities of continuing professional development
Participate in continuous education in technical specialty related subjects	Unaware of continuous education opportunities in related technical subjects	Unable to attend	Attending when ordered	Actively participating in continuing educations

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ABET i: an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity				
	Unsatisfactory	Developing	Satisfactory	Exemplary
Know the code of ethics for the related profession	Unaware of the code of conduct in profession	In progress of learning	Understand	Apply properly
Demonstrate positive attitude towards others	Show no respect to others	Understanding the importance of proper professional conduct	Proper professional conduct	Demonstrate positive attitude towards others
Show awareness for diverse ideas and cultural differences	Unaware of diversity and cultural differences	Learning in progress such as taking MC courses	Successfully completed some MC and diversity related courses	Fully aware and respectable for diversity and cultural differences