

**RH-EE360: RUBRIC FOR EVALUATING PROGRAM OUTCOME H**  
**"THE BROAD EDUCATION NECESSARY TO UNDERSTAND THE IMPACT OF ENGINEERING SOLUTIONS IN A GLOBAL, ECONOMIC, ENVIRONMENTAL, AND SOCIAL CONTEXT"**

<b>Performance Indicator</b>	<b>Exemplary 4</b>	<b>Satisfactory 3</b>	<b>Developing 2</b>	<b>Unsatisfactory 1</b>
<b>Impact of Utilization of Power Components in the National Economy</b>	Fully gained the ability to understand the impact of utilization of power system components like electrical machines, transformer, etc. in the economy of the nation	Reasonably gained the ability to understand the impact of utilization of power system components like electrical machines, transformer in the economy of the nation	Did not gain so much the ability to understand the impact of utilization of power system components like electrical machines, transformer in the economy of the nation	Did not gain the ability to understand the impact of utilization of power system components like electrical machines, transformer in the economy of the nation
<b>Environmental Impact of Power System Components</b>	Fully understand the environmental impact of the electromechanical devices in terms of noise, pollution, etc.	Reasonably understand the environmental impact of the electromechanical devices in terms of noise, pollution, etc.	Somewhat understand the environmental impact of the electromechanical devices in terms of noise, pollution, etc.	Do not understand the environmental impact of the electromechanical devices in terms of noise, pollution, etc.
<b>Role of Power System Components in Social Development</b>	Fully understand the role of power system components like generators, motors, and transformers in the development of modern society	Reasonably understand the role of power system components like generators, motors, and transformers in the development of modern society	Somewhat understand the role of power system components like generators, motors, and transformers in the development of modern society	Do not understand the role of power system components like generators, motors, and transformers in the development of modern society

**RH-EE380: RUBRIC FOR EVALUATING PROGRAM OUTCOME H**

*"The broad education necessary to understand the impact of engineering solution in a global, economic, environmental and societal context"*

<b>Performance Indicator</b>	<b>Exemplary 4</b>	<b>Satisfactory 3</b>	<b>Developing 2</b>	<b>Unsatisfactory 1</b>
<b>Understand control engineering as an enabling science</b>	Fully able to understand the role and place of a controller in a system as well as understand the types of control strategies one may use	Reasonably able to understand the role and place of a controller in a system as well as understand the types of control strategies one may use	Not quite able to understand the role and place of a controller in a system as well as understand the types of control strategies one may use	Poor ability to understand the role and place of a controller in a system as well as understand the types of control strategies one may use
<b>Understand that the yield (useful work) of a device or a system is a controller-dependant variable</b>	Fully able to obtain desired performance from a system using the simplest control strategy possible	Reasonably able to obtain desired performance from a system using the simplest control strategy possible	Not quite able to obtain desired performance from a system using the simplest control strategy possible	Poor ability to obtain desired performance from a system using the simplest control strategy possible
<b>Understand the ubiquitous nature of control systems and their presence in many aspects of modern life as embedded systems</b>	Fully able to apply controllers and control system concepts and tools to different physical systems	Reasonably able to apply controllers and control system concepts and tools to different physical systems	Not quite able to apply controllers and control system concepts and tools to different physical systems	Poor ability to apply controllers and control system concepts and tools to different physical systems

Notes:

- 1) This rubric, RH-EE380, is to be used for program outcome (a) assessment for EE380 *lectures* only.
- 2) Evaluation of students' performance using this rubric is to be reported using the corresponding excel file **RH-EE380-Section (xxx)-yyy.xls**.
- 3) Before sending the filled excel file, please rename it using the following naming codes: **xxx** = section number and **yyy** = current semester code.  
Example: **RH-EE380 Section (01)-081.xls**.
- 4) Evaluation of students' performance using this rubric is based generally on: H.W. assignments, quizzes, major exams, design project, and *especially* the final exam.

**RH-EE411: RUBRIC FOR EVALUATING PROGRAM OUTCOME H**  
**"THE BROAD EDUCATION NECESSARY TO UNDERSTAND THE IMPACT OF ENGINEERING SOLUTIONS IN A GLOBAL, ECONOMIC, ENVIRONMENTAL, AND SOCIAL CONTEXT"**

Performance Indicator	Exemplary 4	Satisfactory 3	Developing 2	Unsatisfactory 1	Score
<b>Ability to select an optimal solution based on economic factors. Inclusion of cost analysis</b>	The project design is based on economic factors and/or a comprehensive cost analysis is included	The project design is loosely based on some economic factors and/or some elements of cost analysis are included	There is some indication that economic factors have been considered.	The project design did not take economic factors into consideration. No cost analysis is included.	
<b>Environmental Impact of the project</b>	The group demonstrated full understanding of the environmental impact of the project	The group demonstrated some understanding of the environmental impact of the project	The group demonstrated little understanding of the environmental impact of the project	The group did not show any understanding of the environmental impact of the project	
<b>Role of the project in technology and its impact on society</b>	The project benefits to the industry and society are fully addressed. Conclusion and future work are well prepared in relation to the project outcomes.	Design project benefits to the industry and society are addressed. Conclusion and future work are included and show some relation to the project outcomes.	Design project benefits to the industry and society are lightly addressed. Conclusion and future work are vague.	Design project benefits to the industry and society are missing. Conclusion and future work are poor or not mentioned. No relation to the project outcomes..	

Number of Students:
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Notes:

- 1) This rubric, RH-EE411, is to be used for program outcome (h) assessment for EE411 *senior design projects*.
- 2) Evaluation of students' performance using this rubric is to be reported using the corresponding excel file **RH-EE411-Section (xxx)-yyy.xls**. This will be based on the data obtained from the individual projects.
- 3) Before sending the filled excel file, please rename it using the following naming codes: **xxx** = section number and **yyy** = current semester code. Example: **RH-EE411 Section (01)-082.xls**.
- 4) Evaluation of students' performance using this rubric is based on the project final report and the final presentation of the group