

ETET Department_TCET_AAS Program_Assessment Rubric

To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3a: an ability to apply the knowledge, techniques, skills, and modern tools of the telecommunications engineering technology to narrowly-defined engineering technology activities;**

Course No:

Semester/Year:

Lab/Project

Individual/Team

Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students define and describe the objectives of the assignment (project/lab)	Very clear and complete description of design goals and objectives	Clear and complete description of design goals and objectives	Adequate description of the problem; any lack of specifics does not impair solution or design	Insufficient description of the problem; inadequately identifies objectives	
Students are able to utilize the latest hardware to achieve Lab/project assignments	Measurements are both accurate and precise. Observations are correct. Work is very neat and organized.	Measurements are accurate. Observations are thorough. Work is satisfactorily neat and organized.	Measurements are mostly accurate. Observations are generally complete.	Measurements are incomplete, inaccurate, and imprecise. Observations are incomplete or missing.	
Students are able to utilize the latest software used in telecommunication systems or networks	Have thorough knowledge about the software. Perform all simulation assignments using the software. Simulations always leading to exact output parameter values.	Have good knowledge about the software. Perform most of the simulation assignments using the software. Simulations leading to most of the time exact output parameter values	Have partial knowledge about the software. Perform some of the simulation assignments. Simulations sometimes leading to incorrect output parameter values.	Poor knowledge about the software. Perform very few simulation assignments. Simulations always leading to incorrect output parameter values.	
Students implement the principles and theories of telecommunication systems or networks when describing their project/lab	Combine all relevant scientific and telecommunications principles and theories when describing the assigned project/lab	Have good knowledge of telecommunication principles and theories when describing the assigned project/lab	Display a partial knowledge of the telecommunication principles and theories when describing the assigned project/lab	Lack relevant knowledge of the telecommunication principles and theories when describing the assigned project/lab	

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To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3b: an ability to apply knowledge of mathematics, science, engineering, and technology to telecommunications engineering technology problems that require limited application of principles but extensive practical knowledge.**

Course No:

Semester/Year:

Lab/Project

Individual/Team

Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students demonstrate an understanding of individual telecommunications systems components and their use in the holistic system	Clearly explain the applications of different telecommunications systems components and their interrelations in the network	Satisfactorily explain the applications of different telecommunications systems components and their interrelations in the network	Partially explain the applications of different telecommunications systems components however cannot give the interrelations of these components in the network	Lack of explanations of the different telecommunications system components and cannot give the interrelations of these components in the network	
Students identify and apply the basic mathematics and physics principles to the lab experiment/project and predict the results to be obtained in the actual measurements	Correctly apply the theoretical techniques to the lab/proj assignments and predict the results to be obtained in actual lab/project experiment. Use correct mathematical equations to process the data	Satisfactorily apply the theoretical techniques to the lab/proj assignments and predicts the results to be obtained in actual lab/project experiment. Use correct mathematical equations to process the data	Display a low level knowledge of the theoretical techniques to be applied to the lab/proj assignments and partially predicts the results to be obtained in actual lab/project experiment.	Display no physics and mathematics theoretical background and does not predict the results to be obtained in the experiment	
Students utilize measured data to perform calculations, plot graphs and make tables	All figures, graphs and tables are very well drawn, numbered and titled. All calculations are correct.	All figures, graphs, and tables are correctly drawn, numbered and titled. Calculations are correct.	All figures, graphs and tables are correctly drawn but are not numbered or identified. Most calculations are correct.	Figures, graphs and tables contain major errors. Some are missing. Most calculations are incorrect.	
Students show hands on skills in troubleshooting possible problems in telecommunication network components	Correctly identify the sources of errors in the telecommunication system or network and recommends solutions and improvements	Have good knowledge of the possible problems occurring in a telecommunication system or network and recommend partial solutions to these problems	Adequate knowledge of the possible problems occurring in the telecommunication system or network, however do not recommend any solutions to these problems	No knowledge of the possible errors in a telecommunications system or network	

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To be completed by the instructor regarding a project, laboratory, or other assignment; may be individual or a team.

Used to evaluate **Student Outcome TAC/ABET Criterion 3c: an ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments.**

Course No:

Semester/Year:

Project only

Individual/Team

Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students appropriately select and utilize resources and lab equipment	Innovative selection of resources; expert use of equipment	Good selection and use of resources and equipment	Appropriate selection and use of resources and equipment	Inadequate use of suggested resources.	
Students observe good laboratory safety procedures	Proper safety precautions are consistently used. Consistently thinks ahead to ensure safety. Will often help each other to conduct labs safety	Proper safety procedures are consistently used. Uses general reminders of safe practices independently	Proper safety precautions are generally used. May need to be reminded once during the lab	Proper safety precautions are often missed Needs to be reminded often during the lab	
Students precisely measure and record parameters for a project, and use the appropriate symbols, units and significant digits.	Measurements are both accurate and precise. Observations are very thorough. Work is neat and organized. Appropriate use of symbols units and significant digits.	Measurements are accurate. Observations are thorough. Adequate use of symbols units and significant digits.	Measurements are mostly accurate. Observations are generally complete. Acceptable use of symbols units and significant digits.	Measurements are incomplete inaccurate and imprecise. Observations are incomplete or missing. Symbols, units and significant digits incorrectly used or missing	
Students demonstrate mastery in the analysis, interpretations, and conclusions as related to the lab/project.	All conclusions data comparisons etc have been clearly and correctly made.	All important results have been correctly interpreted and discussed.	Most of the results have been correctly interpreted and discussed.	Conclusion is incorrect or missing. Poor interpretation of results, the student lacks basic understanding of the project	

ETET Department TCET_AAS Program Assessment Rubric

To be completed by the instructor regarding a project, laboratory, or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3c**: an ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments.

Course No: _____ Semester/Year: _____ **Lab only** Individual/Team _____ Instructor's Name _____

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students accurately follow the lab procedures by making the appropriate measurements.	Demonstrate strong knowledge of the lab procedures. Able to assist other students with procedures. Thoroughly and carefully follows each step before moving to next step.	Demonstrate good knowledge of the lab procedures. Most of the time able to assist other students with the lab procedures. Easily follows each step in sequence	Demonstrate general knowledge of lab procedures. Will discuss with peers to complete procedures. Follow each step in sequence.	Lacks appropriate knowledge of lab procedures. Often requires help from the instructor to complete even basic procedures. Some steps not completed	
Students observe good laboratory safety procedures	Proper safety precautions are consistently used. Consistently thinks ahead to ensure safety. Will often help each other to conduct labs safety	Proper safety procedures are consistently used. Uses general reminders of safe practices independently	Proper safety precautions are generally used. May need to be reminded once during the lab	Proper safety precautions are often missed Needs to be reminded often during the lab	
Students precisely measure and record circuit parameters for a given lab experiment, and use the appropriate symbols, units and significant digits	Measurements are both accurate and precise. Observations are very thorough. Work is neat and organized. Appropriate use of symbols units and significant digits.	Measurements are accurate. Observations are thorough. Adequate use of symbols units and significant digits.	Measurements are mostly accurate. Observations are generally complete. Acceptable use of symbols units and significant digits.	Measurements are incomplete inaccurate and imprecise. Observations are incomplete or missing. Symbols, units and significant digits incorrectly used or missing	
Students demonstrate mastery in the analysis, interpretations, and conclusions as related to the lab experiment.	All conclusions data comparisons etc have been clearly and correctly made. Shows an excellent understanding of the lab experiment.	All important results have been correctly interpreted and discussed. The student shows a good understanding of the experiment	Most of the results have been correctly interpreted and discussed. The student shows a basic understanding of the lab experiment.	Conclusion is incorrect or missing. Poor interpretation of results, the student lacks basic understanding of the lab experiment	

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To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3d: an ability to function effectively as a member of a technical team.**

Course No: Semester/Year: Project/Other Individual/Team Instructor's Name

<i>Performance Indicator</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students conduct themselves professionally	All team members consistently behave in a professional manner. Show up for meetings prepared and on time. Treat each other with courtesy and respect and seek outside advise if team is not productive.	All team members consistently behave in a professional manner. Often shows up for meetings and on time. Treat each other with respect and seek outside advise if the team is not productive	Team member usually behave in a professional manner. Do not repeat the same error and accept outside advise if team is not productive	Internal conflicts results in team failing to achieve projects goal	
Students Communicate with their team members	Consistent communication throughout project. Insightful use of real and virtual meetings. Meetings are productive.	Satisfactorily communication throughout project(real or virtual). Meetings are somewhat productive.	Adequate number of meetings (real or virtual). Little communication in the meeting with consequently little productivity	Inadequate meetings and no communication between team members. No productivity	
Students contribute to the team's work completion.	All team members make significant contributions and are accountable to complete the project	All team members make good contributions and are accountable to complete the project.	All team members make acceptable contributions to complete the project.	Serious problems due to poor team collaboration. Totally lack focus. Problems are not resolved. The team members do not take responsibility for failures of the group.	

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To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3e. *An ability to identify, analyze, and solve narrowly defined engineering technology problems;***

Course No: Semester/Year: Lab/Project/Other Individual/Team Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students are able to identify narrowly-defined engineering technology problems	Students are able to understand the problem and describe in details the subject area and concept involved.	Students are able to understand the problem adequately and describe with enough information the subject area and concept involved.	Students are able to partially understand the problem and have difficulties in describing the subject area and concept involved.	Students are not able to understand the problem and describe the subject area and concept involved.	
Students are able to analyze –narrowly defined engineering technology problems	Students are able to define the known and unknown variables, state all relevant laws and equations needed, list and apply assumptions to them to obtain the specific equations appropriate to the problem	Students are able to define the known and unknown variables, state enough relevant laws and equations needed, list and apply most of the assumptions to them to obtain the specific equations appropriate to the problem	Students are able to define the known and unknown variables, state partial relevant laws and equations needed, but do not list and apply assumptions to them to obtain the specific equations appropriate to the problem	Students are able to define the known and unknown variables, state enough relevant laws and equations needed, list and apply most of the assumptions to them to obtain the specific equations appropriate to the problem	
Students are able to solve narrowly defined engineering technology problems	Students are able to implement strategies to solve the problem use appropriate units, evaluate and interpret the results.	Students are able to implement strategies to solve the problem use appropriate units, sometimes evaluate and interpret the results.	Students are able to implement strategies to solve the problem but inconsistently, some inappropriate use of units, never evaluate the results	Students are not able to implement strategies to solve the problems.	

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To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET 3f. An ability to apply written, oral, and graphical communication in both technical and non-technical environment; and an ability to identify and use appropriate technical literature;**

Course No: _____ Semester/Year: _____ Lab/Project/Other _____ Individual/Team _____ Instructor's Name _____

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students prepare organized and formatted technical reports	Students accurately follow the standardized format (APA, MLA, and etc) or given instructions. All sections are present and clearly labeled, and all information in each section is appropriate. The document is neatly typed.	Students mostly follow the standardized format or the given instructions. Reports contain all sections, whose content is generally correct with only occasional lapses. Minor edits are required. The document is typed with minor editing mistakes.	Students minimally follow the standardized format or the given instruction. Have some sense of organization and structure. Contains all sections but the content in each section is not appropriate. The document is typed but without the correct format.	Student do not follow the standardized format or the given instructions. No sense of introduction, body conclusion. The report does not contain all sections required. The document is very sloppy or handwritten.	
Students use correct English language, grammar, spelling and punctuation.	The document contains very few errors in sentence structure and mechanisms; exhibits good to excellent command of language and professional terminology; sentences are complex and vocabulary is sophisticated.	The document contains few errors in spelling, grammar, verb tense and punctuation; sentence structure (subject and predicate) is generally correct also still simplistic and occasionally repetitious.	The document contains many instances of grammatical errors and demonstrates a lack of editing; sentence structure is simplistic, little variety.	The document contains numerous errors in spelling , grammar, verb tense and punctuation; no paragraphs, numerous fragmented sentences extremely limited vocabulary.	
Students provide appropriate discussions, conclusions and recommendations.	Students are able to clearly summarize all goals, objectives, and indicate if they were met Provide logical conclusions and recommendations suitable for both a technical and nontechnical reader.	Students are able to clearly summarize most of the goals, objectives, and indicate if they were met. Provide acceptable conclusions and recommendations.	Students are able to summarize most of the goals, objectives, but do not indicate if they were met, provide simple conclusions with no recommendations.	Students are unable to clearly summarize the goals, objectives, do not indicate if they were met, provide illogical conclusions and no recommendations	
Students identify and use appropriate technical literature	Have a thorough understanding of the technical literature, describe the relevance of materials reviewed for the topic, and reference it correctly in reports and presentations	Have a good knowledge of the technical literature, describe the relevance of most materials reviewed for the topic and adequately reference it in reports and presentations	Have a partial understanding of the technical literature and reference it adequately in reports and presentations.	Have no understanding of the technical literature and is inappropriately referenced in reports and presentations.	
Students are able to	Students are able to organize	Students present information in a	Students present information	Students present information	

organize and plan communication/ presentation	presentation in well structured logical interesting sequence which audience can clearly follow, stay within time limits	logical sequence which audience can follow, stay within time limits	in an unstructured sequence which audience has difficulty to follow, use a little more time than scheduled	in a disorganized sequence which audience cannot follow, do not stay within time limits	
Students display a professional appearance and are able to provide good oral delivery	Use correct grammatical English and technical terms appropriate to technical area and audience, speak with clarity and confidence, maintain good posture and eye contact with the audience, dress appropriately for the occasion	Use proper English, can be easily heard, speak comfortably with minimal prompts (note cards), make eye contact, do not block screen, no distracting nervous habits, dress appropriately for the occasion.	Occasionally use an inappropriate style of English-too conversational, sometimes difficult to hear or understand speaking, overuse prompts, eye contact is sporadic occasionally block screen, some nervous habits (um, ah, clicking pointer, etc.), appearance is casual for the circumstances	Use poor English no eye contact, difficult to hear or understand speaking, read from prepared script, block the screen, distracting nervous habits (um, ah, clicking pointer, etc.), appearance is too casual for the circumstances	

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To be completed by the instructor regarding a project, laboratory, or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3g. *An understanding of the need for and an ability to engage in self-directed continuing professional development;***

Course No:

Semester/Year:

Lab/ Project/Other

Individual/Team

Instructor's Name

Performance Indicators	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students are able to effectively use library and online resources	Students use effectively the library and online resources for their assignment by going beyond what is required. Bring information from outside sources into their assignment.	Students use appropriately the library and online resources for their assignment by going a little beyond what is required. Sometimes bring information from outside sources into their assignment.	Students show little interest in using the library and online resources. Rarely bring information from outside sources into their assignment.	Students use inefficiently the library and online resources for their assignment by not providing the minimum required. Do not bring information from outside sources into their assignment.	
Students join and participate in activities of local student chapters of professional or other organizations	Students join and participate in activities of local professional and technical societies. Take leadership role. Participate in field trips regularly and submit in depth reflections about the experience gained during the different sites visits	Students join and participate in activities of local professional and technical societies. Participate in field trips and submit in good reflections about the experience gained during the different sites visits .	Students occasionally join and participate in activities of local professional and technical societies. Occasionally participate in field trips and submit adequate reflections about the experience gained during the different sites visits	Students do not show any interest in participating in activities of local professional and technical societies. Do not participate in field trips	
Students are able to identify and take advantage of learning opportunities available on internet and elsewhere	Students show responsibility for developing their own learning opportunities such as attending seminars, webinars, conferences, workshops, and tutorials.	Students show enough responsibility for developing their own learning opportunities such as attending seminars, webinars, conferences, workshops, and tutorials.	Students do not always take responsibility for developing their own learning opportunities such as attending seminars, webinars, conferences, workshops, and tutorials.	Students show no responsibility for developing their own learning opportunities such as attending seminars, webinars, conferences, workshops, and tutorials.	

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To be completed by the instructor regarding a project, laboratory, or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3h. *An understanding of and commitment to address professional and ethical responsibilities, including a respect for diversity***

Course No: Semester/Year: Lab/Project/Other Individual/Team Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Score</i>
Students understand and demonstrate professional responsibilities	Apply professional standards in obtaining, reporting, analyzing data or in design. Attend classes on regular basis and inform professor when excused absence situation occurs	Most of the time behave professionally in obtaining, reporting, analyzing data or in design. Attend classes regularly and most of the time inform professor when absent	Sometimes exhibit unprofessional behavior in obtaining, reporting, analyzing data or in design. Sometimes miss classes without reason	Do not display professional standards in obtaining, reporting, analyzing data or in design. Most of the time miss classes and do not bother giving any reason for.	
Students understand and demonstrate ethical responsibilities	Abide by the IEEE code of ethics and the college academic integrity policy. Able to evaluate case studies and make ethical decisions. Acknowledge the work of others they use through proper permission and citation. Desist from cheating.	Abide by the IEEE code of ethics and the college academic integrity policy. Participate in class discussions and exercises on ethics and make the right decisions. Acknowledge the work of others they use through proper permission and citation. Desist from cheating.	Aware of the IEEE code of ethics and the college academic integrity policy. Do not take the discussion of ethics seriously but are willing to accept its existence Do not always acknowledge the work of others they use but desist from cheating.	Not aware of any codes for ethical behavior. Do not hesitate to cheat or plagiarize the work of others. Do not participate in or contribute to discussions of ethics; do not accept the need for professional ethics	
Students form diverse lab/project teams respecting all ethical backgrounds and display respect for diversity and tolerance.	All students are treated with respect. Students treat each other with civility, tolerance and understanding. Students always form diverse lab/project teams without regard to race, gender, nationality, etc.	Most of the time students treat others with respect, civility, tolerance and understanding. Students form diverse lab/project teams without regard to race, gender, nationality, etc. most of the time.	Students display limited respect, civility, tolerance and understanding of fellow colleagues. Students infrequently form diverse lab/project teams without regard to race, gender, nationality, etc..	Students display no respect, civility, tolerance and understanding of fellow colleagues. Students do not form diverse lab/project teams and do not respect all races, genders, nationalities, etc.	

ETET Department_TCET_AAS Program_Assessment Rubric

To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Student Outcome ETAC/ABET Criterion 3i. A commitment to quality, timeliness and continuous improvement**

Course No: Semester/Year: LabProject/Other Individual/Team Instructor's Name

<i>Performance Indicators</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Rating</i>
Prepare and submit assignments of professional quality	Students always submit assignments of professional quality.	Students most of the time submit assignments of professional quality.	Students sometimes submit assignments of professional quality.	Students never submit assignments of professional quality.	
Present a professional attitude with respect to class assignments, submitting reports and projects in a timely fashion	Students always submit reports and projects in a timely fashion.	Students submit reports and projects in a timely fashion most of the time.	Students sometimes submit reports and projects in a timely fashion.	Students never submit reports and projects in a timely fashion	
Strive to and are able to demonstrate academic progress	Very motivated to improve their performance by refining their work (submitted reports or designs). Resubmit the assignments with proper corrections, learn from mistakes. Students demonstrate excellent academic progress.	Mostly motivated to improve their performance by refining their work (submitted reports or designs). Resubmit the assignments with acceptable corrections, learn from mistakes. Students demonstrate enough interest to achieve academic progress.	Some motivation to improve their performance by refining their work (submitted reports or designs). Resubmit the assignments with some corrections, learn from mistakes. Students demonstrate some interest to achieve academic progress.	Rarely or never are motivated to improve their performance by refining their work (submitted reports or designs). Do not resubmit the assignments with proper corrections, and do not learn from mistakes. Students show little or no interest to achieve academic progress.	

ETET Department_TCET_AAS Program_Assessment Rubric

To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Program Criteria a: the application of electric circuits, computer programming, associated software, analog and digital electronics, voice and data communications, engineering standards, and the principles of telecommunications systems in the solution of telecommunications problems.**

Course No: Semester/Year: LabProject/Other Individual/Team Instructor's Name

<i>Performance Indicator</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Rating</i>
Students master the application of electric circuit in the solution of telecommunication problems.	Excellent skills in the application of electric circuit in building, testing, operating, and maintaining telecommunication systems.	Good skills in the application of electric circuits to the testing, and operation of telecommunication systems but satisfactory knowledge of the application of electric circuits to the building and maintenance of these systems.	Adequate skills in the application of electric circuits to the testing, and operation of telecommunication systems but little knowledge of the application of electric circuits to the building and maintenance of these systems.	Little or no skills in the application of electric circuits to the building, testing, operation, and maintenance of telecommunication systems	
Students master the application of computer programming and associated software in the solution of telecommunication problems.	In depth knowledge of the IT (information technology) and its application to the building, testing, operation and maintenance of telecommunication systems.	Good application skills of the IT in the testing, and operation of telecommunication systems, but satisfactory skills in the application of IT knowledge to the building, and maintenance of these systems.	Adequate application skills of the IT (information technology) in the testing, and operation of telecommunication systems, but limited skills in the application of IT knowledge to the building, and maintenance of these systems.	Little or no application skills of the IT (information technology) in the building, testing, operation and maintenance of telecommunication system.	
Students master the application of analog and digital electronics in the solution of telecommunication problems.	Excellent skills in the application of analog and digital electronics to the building, testing, operation, and maintenance of telecommunication systems.	Have good skills in the application of analog and digital electronics to the testing, and operation of telecommunication systems, but only adequate knowledge of analog and digital electronics in the building and maintenance of these systems.	Adequate skills in the application of analog and digital electronics to the testing, and operation of telecommunication systems, but limited knowledge of analog and digital electronics in the building and maintenance of these systems.	Little or no skills in the application of analog and digital electronics to the building, testing, operation, and maintenance of telecommunication systems.	

Students master the application of voice and data communications in the solution of telecommunication problems.	Excellent skills in the application of telephony systems, TCP/IP, VoIP, video and data communications (analog and digital) in the solution of telecommunication systems.	Good skills in the application of telephony systems, TCP/IP, VoIP, video and data communication (analog and digital) in the solution of telecommunication systems.	Adequate skills in the application of telephony systems, TCP/IP, VoIP, video and data communication (analog and digital) in the solution of telecommunication systems.	No skills in the application of telephony systems, TCP/IP, VoIP, video and data communication (analog and digital) in the solution of telecommunication systems.	
Students master the application of engineering standards in the solution of telecommunication problems.	Excellent application of standards developed by IEEE, EIA, ISO, and other organizations in the solution of telecommunication problems.	Good application skills of standards developed by IEEE, EIA, ISO, and organizations in the solution of telecommunication problems.	Adequate application skills of standards developed by IEEE, EIA, ISO, other organizations in the solution of telecommunication problems.	No skills in the application of standards developed by IEEE, EIA, ISO, and other organizations in the solution of telecommunication problems.	
Students master the application of principles of telecommunication systems in the solution of telecommunications problems.	Very good application of electromagnetic fields, transmission lines, types of network connections, analog and digital transmission, and multiplexing in the solution of telecommunications problems.	Good application of electromagnetic fields, transmission lines, types of network connections, analog and digital transmission, and multiplexing in the solution of telecommunications problems.	Adequate application of electromagnetic fields, transmission lines, types of network connections, analog and digital transmission, and multiplexing in the solution of telecommunications problems.	Poor application of electromagnetic fields, transmission lines, types of network connections, analog and digital transmission, and multiplexing in the solution of telecommunications problems.	

ETET Department_TCET_AAS Program_Assessment Rubric

To be completed by the instructor regarding a project, laboratory or other assignment; may be individual or a team.

Used to evaluate **Program Criteria b: the applications of physics to telecommunications systems in a rigorous mathematical environment at or above the level of algebra and trigonometry.**

Course No: Semester/Year: LabProject/Other Individual/Team Instructor's Name

<i>Performance Indicator</i>	<i>Exceeds criterion 4</i>	<i>Meets criterion 3</i>	<i>Progressing towards criterion 2</i>	<i>Below Criterion 1</i>	<i>Rating</i>
Students master the applications of physics to telecommunications systems	Excellent application skills of physics laws and principles like electromagnetic fields, modes, parameters (S, SWR, etc) and impedance matching in transmission lines and telecommunication systems in general.	Good application skills of physics laws and principles like electromagnetic fields, modes, parameters (S, SWR, etc) and impedance matching in transmission lines and telecommunication systems in general.	Adequate application skills of physics laws and principles like electromagnetic fields, modes, parameters (S, SWR, etc) and impedance matching in transmission lines and telecommunication systems in general.	Poor application skills of physics laws and principles like electromagnetic fields, modes, parameters (S, SWR, etc) and impedance matching in transmission lines and telecommunication systems in general.	
Students apply rigorous mathematical principles in solving problems in telecommunications systems at or above the level of college algebra and trigonometry .	Excellent use of rigorous mathematical formulae and tables at or above the level of college algebra and trigonometry.	Good use of mathematical formulae and tables at or above the level of college algebra and trigonometry.	Satisfactory use of mathematical formulae and tables at or above the level of college algebra and trigonometry.	Poor use of mathematical formulae and tables at or above the level of college algebra and trigonometry.	

*** ETAC/ABET Criterion 3 for TCET AAS:**

- a.** An ability to apply knowledge, techniques, skills and modern tools of the disciplines to narrowly defined engineering technology activities.
- b.** An ability to apply knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;
- c.** An ability to conduct standard tests and measurements, and to conduct, and interpret experiments.
- d.** An ability to function effectively as a member of a technical team.
- e.** An ability to identify, analyze and solve narrowly defined engineering technology problems;
- f.** 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;
- g.** An understanding of the need for and an ability to engage in self-directed continuing professional development;
- h.** An understanding of and a commitment to address professional, and ethical responsibilities, including a respect for diversity, and
- i.** A commitment to quality, timeliness, and continuous improvement.

PCI: the application of electric circuits, computer programming, associated software, analog and digital electronics, voice and data communications, engineering standards, and the principles of telecommunications systems in the solution of telecommunications problems.

PC2: the applications of physics to telecommunications systems in a rigorous mathematical environment at or above the level of algebra and trigonometry.

