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**Training Delivery and Assessment Plan (TDAP)**

**REP C 53: Economic Analysis of Energy Systems**

**ITVET Belize City**

**1.0 COURSE ADMINISTRATION:**

**Qualification CODE: XXXXXXnnnnZ**

**Qualification TITLE:** **Economic Analysis of Energy Systems**

**PROGRAMS: Renewable Energy and Energy Efficiency Program (REP)**

**TRAINING CYCLE: January 8, 2024– March 28, 2024**

**Class Meeting Times: Tuesday am (2 periods), Tuesday pm (2 periods), and Wednesday am (2 periods) for 10 weeks**

**Class Venue: REP Classroom 01**

**Program Instructor: Maya Coeur**

**Consultation hours: By Class schedule**

**Telephone: ITVET Belize**: **(501) 000-0000**

**Personal cell: (501) 000-0000**

**E-Mail Address:** [**xxxxxxx@zzzzz.com**](mailto:xxxxxxx@zzzzz.com)

**Class Hours / Term: 40**

**Weeks / Term: 10**

**Classroom: Tuesday am (2 periods), Tuesday pm (2 periods), and Wednesday am (2 periods) for 10 weeks**

**New Lab: No New Lab periods**

**Course Description**

An introduction to the economic analysis of system scenarios and options having technical descriptions through the energy efficiency modeling, analysis, measurement and verification topics of earlier courses. Calculate and compare relative financial performance (e.g. “rate of return” and “payback period”) of reasonably developed and competing potential energy system options or scenarios.

**Rationale**

In addition to the technical components of a project (e.g. design, equipment, materials, construction, operations, and maintenance), the results of non-technical components such as the financial or economic analysis of options for energy systems or energy efficient measures, significantly contribute to a successful project outcome and team sustainability.

**Assessment**

Tests – 25% Assignments – 35% Projects - 30% Lab Work – 00 % Exam – 0 % Employability Skills - 10%

**Course Learning Objectives, Outcomes and Tasks:**

* Task 01: Introduce concept of interest, investment, & loans
* Task 02: Introduce the concept of the time value of money
* Task 03: Identify the present and future value of single and repeated payments for different interest rates
* Task 04: Identify the rate of return for energy systems and energy efficiency measures
* Task 05: Prepare and rank the relative benefit of potential energy system or efficient improvement decisions

**2.0 PROFILE OF THE TRAINEE:**

1. Responsible
2. Dependable
3. Punctual
4. Proficient
5. Analytical
6. Enterprising
7. Self-confident
8. Team player
9. Technologically Oriented
10. Resourceful

**3.0 PROGRAM POLICIES AND REGULATIONS:** Trainees are expected to (by date specified):

1. Complete all assessment, assignments, reports and tests on due time.
2. Abide by the rules and regulations as stated in the trainee handbook, workshop rules, online class (netiquette).
3. Practice professional and ethical behavior at all times.
4. Competent in all practical, examination, test and or quizzes.
5. Be on time to each class period/online session. If you will be late for any session, please inform the Instructor via an e-mail, telephone, or text message.
6. Attend all scheduled class periods and online sessions in the Google Classroom assigned.
7. Show personal interest and exhibit class participation.
8. All Reading Assignments must be done prior to class/lab sessions.
9. In order to prevent plagiarism, all references used while conducting research must be cited. The American Psychological Association (APA) guidelines are the recommended format. This will be provided as a separate document and there are a number of websites that provide information on the APA format.

**4.0 TECHNOLOGY REQUIREMENTS**:

(Example text – Edit as appropriate for Course) Each trainee is required to have access to an electronic device, CD or flash drive, MSWord, Excel, and PowerPoint software and internet access as well as an up to date email address (Gmail account).

**5.0 PORTFOLIO OF THE TRAINEE:**

(Example text – Edit as appropriate for Course) At the end of each unit, each trainee is required to produce a portfolio which will contain all assignments, quizzes, reflections per unit and /or cluster, and practical assessments. In addition, for trainees to be promoted to the next level, he/she must have a **completed portfolio**. An outline of the portfolio will be provided by your instructor.

**6.0 MODES OF INSTRUCTION:**

(Example text – Edit as appropriate for Course) In this program, we will utilize both face to face and online learning (blended learning) in Google Classroom using the following methodologies: Lecture (traditional and power point methods), small and large group discussion; individual and group presentations, slide show, video presentations, interactive presentations, blogs, tutorial, community of inquiry (COI), expert teaching, and guided practical. Furthermore, you will be expected to use email and WhatsApp to respond to the course instructor and peers about assigned topics.

**7.0 INSTRUCTIONAL METHODS:**

**Face to Face Contact:**

**1.**

1. Lecture,
2. Videos
3. Practical demonstration
4. Discussion
5. Guided practice
6. Independent practice
7. Cooperative learning activities
8. Textbook and computer-based information

**2. Online Contact: (2 hrs. /Week)**

1. Google Classroom Platform
2. Zoom
3. Microsoft Office
4. Tutorials
5. PowerPoint with voice lessons
6. Videos on concepts
7. Online quizzes and tests
8. Discussion
9. Cooperative Learning Activities

**8.0 RESOURCES:**

1. Manual, Book, Industry Materials, Handouts, Powerpoint Slides
2. YouTube videos
3. Live Practice Sheets
4. Guest Lecturers

**Underpinning knowledge and Skills**

**Knowledge of:**

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**Skills**

The ability to:

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**9.0 DELIVERY SCHEDULE**

| **Date** | **Element of Competency** | **Description** | **Instructional strategies** | **Readings ,Assignments and Due Dates** | **Resources** |
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| **Week 1** | Task 01: Introduce concept of interest, investment, & loans | -Introduction/ Orientation  -Housekeeping (rules & expectations)  -Course Outline review  -Using Google meet and classroom | -Discussion  -Forum Discussion  - Peer Discussion  - Presentations  - Lecture  - Videos  - Practice Sheets |  | - Rule book  -Course outline  -powerpoint presentation  - handouts  - worksheets  - videos and You Tube  - computer |
| **Week 2** | Task 01: Introduce concept of interest, investment, & loans  Task 02: Introduce the concept of the time value of money |  |  | **Test 01 – 9% T1** |  |
| **Week 3** | Task 02: Introduce the concept of the time value of money  Task 03: : Identify the present and future value of single and repeated payments for different interest rates |  |  | **Test 02 – 8% T2**  **Assignment 01 – 05% T2** |  |
| **Week 4** | Task 03: : Identify the present and future value of single and repeated payments for different interest rates  Task 04: Identify the rate of return for energy systems and energy efficiency measures | Developing Reasonable Project Scenarios |  | **Test 03 – 8% T3** |  |
| **Week 5** | Task 04: Identify the rate of return for energy systems and energy efficiency measures |  |  | **Assignment 02 – 15% T3** |  |
| **Week 6** | Task 04: Identify the rate of return for energy systems and energy efficiency measures  Task 05: Prepare and rank the relative benefit of potential energy system or efficient improvement decisions | Rate of Return  Payback Period |  | **Assignment 03 – 10% T4** |  |
| **Week 7** | Task 04: Identify the rate of return for energy systems and energy efficiency measures  Task 05: Prepare and rank the relative benefit of potential energy system or efficient improvement decisions | Rate of Return  Payback Period  Relative Financial Performance of Options |  | **Assignment 04 – 05% T5** |  |
| **Week 8** | Task 05: Prepare and rank the relative benefit of potential energy system or efficient improvement decisions | Relative Financial Performance of Options |  | **Group Project 01 – 10% T4** |  |
| **Week 9** | Task 05: Prepare and rank the relative benefit of potential energy system or efficient improvement decisions |  |  | **Group Project 02 – 20% T5** |  |
| **Week 10** | Course Review |  |  |  |  |

* 1. **PRACTICAL GRADING CRITERIA**

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| RATING | DESCRIPTOR |
| **5**  **Competent**  Can perform the task with initiative and adaptability to problem situation. | Mastery of technical skills; can perform the task demonstrating mastery, autonomy, responsibility and control in a wide range of working conditions. Trainee applies and extends the key concepts, processes and skills. Works independently and can support the learning of others. |
| **4**  **Competent**  Can perform the task proficiently without assistance and/or supervision. | Proficient in technical skills; can perform the task in a wide range of working conditions, demonstrating good working knowledge and application of the key concepts, processes, skill, initiative, and adaptability to problem situations. Ability to work independently. |
| **3**  **Competent**  Can perform the task satisfactorily but requires periodic assistance and/or supervision. | Satisfactory technical skills; can perform the task demonstrating sufficient knowledge of the key concepts, processes, skills, and an ability to operate satisfactorily displaying some initiative and adaptability to problem situations. Works with some support. |
| **2**  **Not Yet Competent**  Can perform some parts of the task but requires considerable assistance. | Insufficient technical skills; can perform limited parts of the task but not to required standards. Trainee is well below the course level expectations and performance is inconsistent even with support. |
| **1**  **Not Yet Competent**  Cannot perform the task but has some knowledge of the task. | Inadequate evidence of attainment of competence, processes,and skill on which a judgment can be made. |

**11.0 THEORY GRADING CRITERIA**

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| RATING | DESCRIPTOR |
| **90-100 Excellent**  Can insightfully and creatively apply an in-depth understanding of learning standards in complex situations. | Mastery of the related knowledge and attitude; trainee develops a sophisticated understanding of the concepts and competencies relevant to the expected learning. |
| **80 -89 Very good**  Can transfer understanding of learning standards to both predictable and new situations. | Proficient in the related knowledge and attitude; trainee demonstrates a complete understanding of the concepts and competencies relevant to the expected learning. |
| **70 -79 Satisfactory**  Can understand the learning standards in basic or familiar situations. | Satisfactory level of the related knowledge and attitude; trainee demonstrates a partial understanding of the concepts and competencies relevant to the expected learning. |
| **57-69 Unsatisfactory**  Can demonstrate some progress towards the learning standards. | Insufficient knowledge and attitude; trainee demonstrates an initial understanding of the concepts and competencies relevant to the expected learning. |
| **Below 57 Insufficient**  Progress is not shown. | Has not demonstrated sufficient knowledge and attitude on which a judgment can be made |