

# MODULE DESCRIPTION FORM

## نموذج وصف المادة الدراسية

| Module Information                 |                                  |                               |                                                                                                                                                                                                                                                                |
|------------------------------------|----------------------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| معلومات المادة الدراسية            |                                  |                               |                                                                                                                                                                                                                                                                |
| Module Title                       | <b>thermodynamic - Ideal Gas</b> |                               | Module Delivery                                                                                                                                                                                                                                                |
| Module Type                        | Core                             |                               | <input checked="" type="checkbox"/> Theory<br><input checked="" type="checkbox"/> Lecture<br><input checked="" type="checkbox"/> Lab<br><input checked="" type="checkbox"/> Tutorial<br><input type="checkbox"/> Practical<br><input type="checkbox"/> Seminar |
| Module Code                        | <b>ATU12034</b>                  |                               |                                                                                                                                                                                                                                                                |
| ECTS Credits                       | 5                                |                               |                                                                                                                                                                                                                                                                |
| SWL (hr/sem)                       | <b>125</b>                       |                               |                                                                                                                                                                                                                                                                |
| Module Level                       | 1                                | Semester of Delivery          |                                                                                                                                                                                                                                                                |
| Administering Department           | ATU12                            | College                       | PMTEC                                                                                                                                                                                                                                                          |
| Module Leader                      | Name                             | e-mail                        | E-mail                                                                                                                                                                                                                                                         |
| Module Leader's Acad. Title        | Professor                        | Module Leader's Qualification | Ph.D.                                                                                                                                                                                                                                                          |
| Module Tutor                       | Name (if available)              | e-mail                        | E-mail                                                                                                                                                                                                                                                         |
| Peer Reviewer Name                 | Name                             | e-mail                        | E-mail                                                                                                                                                                                                                                                         |
| Scientific Committee Approval Date | 01/06/2023                       | Version Number                | 1.0                                                                                                                                                                                                                                                            |

| Relation with other Modules       |      |          |  |
|-----------------------------------|------|----------|--|
| العلاقة مع المواد الدراسية الأخرى |      |          |  |
| Prerequisite module               | None | Semester |  |
| Co-requisites module              | None | Semester |  |

## Module Aims, Learning Outcomes and Indicative Contents

### أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Module Objectives</b><br>أهداف المادة الدراسية                | 1-The aim of this course is to provide English learners with integrated language skills such as reading, listening and writing resulting in a level of basic language knowledge.<br>2-This course will focus on grammar rules, basic word knowledge and usage, reading comprehension, reading out of the lesson, and Paragraph writing.<br>3- A student may be able to listen to native speakers and speak English Language.<br>4- A student may be able to write and have creativity in his writing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Module Learning Outcomes</b><br>مخرجات التعلم للمادة الدراسية | 1- Uses expressions of Quantity in elementary level of English.<br>2- Constructs sentences in Present Perfect Tense, Simple Future Tense and Going to Future Tense both in an oral and written task.<br>3- Defines basic Modals and employ them in elementary level of communication and writing skills.<br>4- Translates sentences in elementary level from English to another language.<br>5- Interprets the texts written in elementary level of English.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Indicative Contents</b><br>المحتويات الإرشادية                | <p><b>Language</b> is a rule-governed behavior. It is defined as the comprehension and/or use of a spoken (i.e., listening and speaking), written (i.e., reading and writing), and/or <b>other communication symbol system</b> (e.g., American Sign Language).</p> <p><b>Spoken and written language</b> are composed of receptive (i.e., listening and reading) and expressive (i.e., speaking and writing) components.</p> <p>Spoken language, written language, and their associated components (i.e., receptive and expressive) are each a synergistic system comprised of individual language domains (i.e., phonology, morphology, syntax, semantics, pragmatics) that form a dynamic integrative whole</p> <p><b>Phonology</b> study of the speech sound (i.e., phoneme) system of a language, including the rules for combining and using phonemes.</p> <p><b>Morphology</b> study of the rules that govern how morphemes, the minimal meaningful units of language, are used in a language.</p> <p><b>Syntax</b> the rules that pertain to the ways in which words can be combined to form sentences in a language.</p> <p><b>Semantics</b> the meaning of words and combinations of words in a language.</p> |

## Learning and Teaching Strategies

### استراتيجيات التعلم والتعليم

|                   |                                                                                                                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strategies</b> | 1- Uses the available material to increase his efficiency.<br>2- Constructs sentences in Present Perfect Tense, Simple Future Tense and Going to Future Tense both in an oral and written task. |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|  |                                                                                                                                                                                                                                                            |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 3-Defines basic Modals and employ them in elementary level of communication and writing skills.<br>4- Develop and enhance students' language skills to communicate in English properly.<br>5- Interprets the texts written in elementary level of English. |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| <b>Student Workload (SWL)</b><br>الحمل الدراسي للطلاب محسوب ل ١٥ اسبوعا        |     |                                                                           |   |
|--------------------------------------------------------------------------------|-----|---------------------------------------------------------------------------|---|
| <b>Structured SWL (h/sem)</b><br>الحمل الدراسي المنتظم للطلاب خلال الفصل       | 78  | <b>Structured SWL (h/w)</b><br>الحمل الدراسي المنتظم للطلاب أسبوعيا       | 7 |
| <b>Unstructured SWL (h/sem)</b><br>الحمل الدراسي غير المنتظم للطلاب خلال الفصل | 47  | <b>Unstructured SWL (h/w)</b><br>الحمل الدراسي غير المنتظم للطلاب أسبوعيا | 6 |
| <b>Total SWL (h/sem)</b><br>الحمل الدراسي الكلي للطلاب خلال الفصل              | 125 |                                                                           |   |

| <b>Module Evaluation</b><br>تقييم المادة الدراسية |                 |             |                  |            |                           |
|---------------------------------------------------|-----------------|-------------|------------------|------------|---------------------------|
|                                                   |                 | Time/Number | Weight (Marks)   | Week Due   | Relevant Learning Outcome |
| <b>Formative assessment</b>                       | Quizzes         | 2           | 10% (10)         | 5 and 10   | LO #1, #2 and #10, #11    |
|                                                   | Assignments     | 2           | 10% (10)         | 2 and 12   | LO #3, #4 and #6, #7      |
|                                                   | Projects / Lab. | 1           | 10% (10)         | Continuous | All                       |
|                                                   | Report          | 1           | 10% (10)         | 13         | LO #5, #8 and #10         |
| <b>Summative assessment</b>                       | Midterm Exam    | 2hr         | 10% (10)         | 7          | LO #1 - #7                |
|                                                   | Final Exam      | 3hr         | 50% (50)         | 16         | All                       |
| <b>Total assessment</b>                           |                 |             | 100% (100 Marks) |            |                           |

| <b>Delivery Plan (Weekly Syllabus)</b><br>المنهاج الاسبوعي النظري |                                                                 |
|-------------------------------------------------------------------|-----------------------------------------------------------------|
|                                                                   | Material Covered                                                |
| <b>Week 1</b>                                                     | - Definitions , phase change , pure substance<br>- Steam tables |
| <b>Week 2</b>                                                     | T-s , P v diagrams and h- s chart<br>Steam process              |

|                |                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------|
| <b>Week 3</b>  | Dryness fraction measurement<br>Steam cycles Carnot cycle                                               |
| <b>Week 4</b>  | Rankine cycles<br>Ranking cycle with superheat                                                          |
| <b>Week 5</b>  | The effect of steam condition on thermal, efficiency<br>Reheat cycle                                    |
| <b>Week 6</b>  | Regenerative cycle , open feed heater<br>Regenerative cycle , closed feed heater                        |
| <b>Week 7</b>  | Air standard cycle ; Otto cycle<br>Air standard cycle ; Diesel cycle                                    |
| <b>Week 8</b>  | Air standard cycle ; Daul cycle<br>Mean effective pressure , and comparison between air standard cycles |
| <b>Week 9</b>  | Simple gas turbine cycle ; Brayton cycle                                                                |
| <b>Week 10</b> | Effect of clearance volume, Volumetric efficiency                                                       |
| <b>Week 11</b> | Actual indicator diagram                                                                                |
| <b>Week 12</b> | Multi – stage compressor :Plus inter cooler, The ideal inter mediate pressure                           |
| <b>Week 13</b> | The condition for minimum work Isothermal efficiency                                                    |
| <b>Week 14</b> | Energy balance for two – stage machine with inter – cooler                                              |
| <b>Week 15</b> | The steady flow analysis of the compressor process                                                      |
| <b>Week 16</b> | <b>Preparatory week before the final Exam</b>                                                           |

### Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

|               | Material Covered |
|---------------|------------------|
| <b>Week 1</b> |                  |
| <b>Week 2</b> |                  |
| <b>Week 3</b> |                  |
| <b>Week 4</b> |                  |
| <b>Week 5</b> |                  |
| <b>Week 6</b> |                  |
| <b>Week 7</b> |                  |

### Learning and Teaching Resources

مصادر التعلم والتدريس

|                   | Text                                                                                        | Available in the Library? |
|-------------------|---------------------------------------------------------------------------------------------|---------------------------|
| Required Texts    | Headway book for learning English                                                           | Yes                       |
| Recommended Texts | Skills in writing and Learning English                                                      | Yes                       |
| Websites          | <a href="https://www.bbc.co.uk/learningenglish/">https://www.bbc.co.uk/learningenglish/</a> |                           |

| Grading Scheme<br>مخطط الدرجات                                                                                                                                                                                                                                                                                                                                                       |                  |                     |          |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|---------------------|----------|---------------------------------------|
| Group                                                                                                                                                                                                                                                                                                                                                                                | Grade            | التقدير             | Marks %  | Definition                            |
| Success Group<br>(50 - 100)                                                                                                                                                                                                                                                                                                                                                          | A - Excellent    | امتياز              | 90 - 100 | Outstanding Performance               |
|                                                                                                                                                                                                                                                                                                                                                                                      | B - Very Good    | جيد جدا             | 80 - 89  | Above average with some errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | C - Good         | جيد                 | 70 - 79  | Sound work with notable errors        |
|                                                                                                                                                                                                                                                                                                                                                                                      | D - Satisfactory | متوسط               | 60 - 69  | Fair but with major shortcomings      |
|                                                                                                                                                                                                                                                                                                                                                                                      | E - Sufficient   | مقبول               | 50 - 59  | Work meets minimum criteria           |
| Fail Group<br>(0 – 49)                                                                                                                                                                                                                                                                                                                                                               | FX – Fail        | راسب (قيد المعالجة) | (45-49)  | More work required but credit awarded |
|                                                                                                                                                                                                                                                                                                                                                                                      | F – Fail         | راسب                | (0-44)   | Considerable amount of work required  |
|                                                                                                                                                                                                                                                                                                                                                                                      |                  |                     |          |                                       |
| <b>Note:</b> Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above. |                  |                     |          |                                       |