

## Course Weekly Outline

|                           |  |            |          |         |            |
|---------------------------|--|------------|----------|---------|------------|
| <b>Course Instructor</b>  | Ahmed Shihab Ahmed   |            |          |         |            |
| <b>Email</b>              | <a href="mailto:drahmedshihab14@gmail.com">drahmedshihab14@gmail.com</a>   |            |          |         |            |
| <b>Title</b>              | Heating Ventilating and Air Conditioning (HVAC)  |            |          |         |            |
| <b>Course Coordinator</b> |  |            |          |         |            |
| <b>Course Objective</b>   | study the principles of Air Conditioning and Refrigeration processes   |            |          |         |            |
| <b>Course Description</b> |  |            |          |         |            |
| <b>Textbook</b>           | Air Conditioning Engineering by W.P Jones  |            |          |         |            |
| <b>References</b>         | <p>1- Refrigeration and Air Conditioning by R.S KHURMI &amp; J.K GUPTA</p> <p>2- ASHRAE-Handbook- Fundamentals 2011</p> <p>3- خالد الجودي مباديء هندسة تكييف الهواء والتثليج-كلية الهندسة جامعة البصرة</p> |            |          |         |            |
| <b>Course Assessment</b>  | Term Tests   | Laboratory | Quizzes  | Project | Final Exam |
|                           | As (35%)   | As (15%)   | As (10%) | ----    | As (40%)   |
| <b>General Notes</b>      |  |            |          |         |            |

## Course weekly Outline-Semester(1)

| week            | Date                     | Topics Covered                                      | Lab. Experiment Assignments | Notes |
|-----------------|--------------------------|---|-----------------------------|-------|
| 1               | 20/10/2014<br>22/10/2014 | Introduction, Thermodynamic properties of moist air |                             |       |
| 2               | 27/10/2014<br>29/10/2014 | Thermodynamic properties of moist air               |                             |       |
| 3               | 3/11/2014<br>5/11/2014   | Physiological Reaction for cooling & Heating        |                             |       |
| 4               | 10/11/2014<br>12/11/2014 | Psychometric chart                                  |                             |       |
| 5               | 17/11/2014<br>19/11/2014 | First term exam<br>Psychometric processes           |                             |       |
| 6               | 24/11/2014<br>26/11/2014 | Air & Humidity Calculations                         |                             |       |
| 7               | 1/12/2014<br>3/12/2014   | Air & Humidity Calculations                         |                             |       |
| 8               | 8/12/2014<br>10/12/2014  | Basic Air Conditioning process                      |                             |       |
| 9               | 15/12/2014<br>17/12/2014 | Air Conditioning Cycles                             |                             |       |
| 10              | 22/12/2014<br>24/12/2014 | Design conditioning-heat transfer coefficients      |                             |       |
| 11              | 29/12/2014<br>31/12/2014 | Thermal comfort-ASHRAE comfort chart                |                             |       |
| 12              | 5/1/2015<br>7/1/2015     | Heating load calculation                            |                             |       |
| 13              | 12/1/2015<br>14/1/2015   | Cooling load calculation                            |                             |       |
| 14              | 19/1/2015<br>21/1/2015   | Classification of Air duct                          |                             |       |
| 15              | 26/1/2015<br>28/1/2015   | Design of Air ducts for air distribution systems    |                             |       |
| 16              | 4/2/2015<br>6/1/2015     | Ventilation & Air cleaning units.                   |                             |       |
| Half-year Break |                          |   |                             |       |

Instructor Signature:

Dean Signature:

## Course weekly Outline-Semester(2)

|    |  |  |  |  |
|----|--|--|--|--|
| 1  |  | 4Refrigerant-Method of Refrigeration                 |  |  |
| 2  |  | Basic mechanical vapors<br>compression cycle         |  |  |
| 3  |  | Basic mechanical vapors compression cycle            |  |  |
| 4  |  | Actual vapors compression Refrigeration cycle        |  |  |
| 5  |  | Refrigeration equipments                             |  |  |
| 6  |  | Absorption refrigeration system                      |  |  |
| 7  |  | Lithium bromide-water absorption system              |  |  |
| 8  |  | Aqua-ammonia absorption system                       |  |  |
| 9  |  | Other refrigeration system: Vortex-tube steam<br>jet |  |  |
| 10 |  | Thermo electric cooling system, cold storage         |  |  |
| 11 |  | Basic control of refrigeration equipment             |  |  |
| 12 |  | Basic control of refrigeration equipment             |  |  |
| 13 |  | Application of refrigeration & Air<br>Conditioning   |  |  |
| 14 |  | Application of refrigeration & Air<br>Conditioning   |  |  |
| 15 |  | Solar energy & its application A/C<br>Conditioning   |  |  |
| 16 |  | Solar energy & its application A/C<br>Conditioning   |  |  |

Instructor Signature:

Dean Signature: