

# Indoor Environment and HVAC Systems

## Assessment Rubrics

### Assessment Rubrics for Assignments:

| Criteria  | Levels of performance and grades                                    |  |   |  |
|---|---|--|---|--|
|   | Insufficient (1)<br>F   | Acceptable (2)<br>D & C  | Good (3)<br>B   | Excellent (4)<br>A   |
| <b>Design of HVACR and energy recovery systems</b>  | Not able to explain and design the systems.                         | Able to explain and design some of the systems in simple cases only. | Able to explain and design the systems in complex situations. | Able to explain and design the systems effectively in more complex situations. |
| <b>Analysis of system processes and performance</b> | Not able to analyze the system processes and performance.           | Able to analyze some of the system processes and performance.        | Able to analyze all the system processes and performance.     | Able to analyze critically the system processes and performance.               |
| <b>Organization and writing</b>                     | Poor structuring and organization with many errors and bad writing. | Basic structuring, fair organization and clear writing.              | Effective structure and organization with good writing.       | Good structure, professional organization and writing skills.                  |

### Assessment Rubrics for Mini Project:

| Criteria  | Levels of performance and grades  |   |   |   |
|---|---|---|---|---|
|   | Insufficient (1)<br>F   | Acceptable (2)<br>D & C   | Good (3)<br>B   | Excellent (4)<br>A  |
| <b>Design and analysis of HVACR and energy recovery systems</b> | Very weak understanding of design concepts. Not able to analyze system performance.                 | Able to apply basic design concepts and analyze system performance in simple cases only.            | Able to apply design concepts and analyze system performance in complex situations.                             | Able to apply design concepts effectively and analyze system performance in more complex situations.                |
| <b>Project development, problem solving and analysis</b>        | Cannot identify the key problem and develop a coherent plan to solve it.                            | Fails to define the problem adequately. Develops a marginal plan only.                              | Adequately defines the problem and develops a plan to analyze and solve it.                                     | States the problem clearly, identifies underlying issues and develops a clear and effective plan to solve it.       |
| <b>Report writing</b>   | Information is not well organized and clearly presented. Lack of coherence and logical consistency. | Some information is scattered and not clearly presented. Weak coherence and logical consistency.    | The information is clearly presented. Logical interconnection and consistency are shown.                        | The information is effectively presented. Good coherence and logical consistency are demonstrated.                  |
| <b>Oral presentation</b>  | Presentation is very confused and unclear. Visual aids are poorly prepared.                         | People can follow presentation with effort. Delivery and flow are not well thought out.             | Presentation is generally clear. A few minor points may be confusing. Visual aids and delivery are appropriate. | Presentation is clear and logical. Visual aids and delivery are effective and professional.                         |
| <b>Team work</b>  | Team work was hardly observed. Each member prepares the writing in isolation with no coordination.  | Some planning and coordination are shown in the writing, but team work is not smooth and effective. | Every member contributes and collaborates in the writing. Good coordination and consistent style are observed.  | Every member contributes and collaborates in the writing. Effective coordination and division of work are achieved. |