Part I

Course Title: HVAC Engineering Elective II
Course Code: CA4724
Course Duration: 1 Semester
(Course Duration: (Some courses offered in Summer Term may start a few weeks earlier than the normal University schedule. Please check the teaching schedules with CLs before registering for the courses.)
Credit Units: 3
Level: B4
Medium of Instruction: English
Prerequisites: Nil
Precursor: CA4723 HVAC Engineering Elective I
Students must have attempted (including class attendance, coursework submission, and examination) the precursor course(s) so identified.
Equivalent Courses: BC4724/BC4724P HVAC Engineering Elective II
Exclusive Courses: Nil

Part II

1. Course Aims:

The course aims to provide students with the knowledge of thermal behaviour and performance of HVAC equipment; and also the computer simulation as an advanced tool to analyse building and associated environmental system performance.

2. Course Intended Learning Outcomes (CILOs):

Upon successful completion of this course, students should be able to:

<table>
<thead>
<tr>
<th>No.</th>
<th>CILOs</th>
<th>Weighting (if applicable)</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>discover the heat and mass transfer theories as applied to HVAC equipment;</td>
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<tr>
<td>2.</td>
<td>implement the steady state performance of major HVAC equipment;</td>
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<td>3.</td>
<td>curate the dynamic thermal behaviour of the environmental plants;</td>
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<td>4.</td>
<td>apply the basic thermal simulation and modeling techniques.</td>
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3. Teaching and Learning Activities (TLAs):

<table>
<thead>
<tr>
<th>Semester Hours:</th>
<th>3 hours per week</th>
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<tbody>
<tr>
<td>Lecture/Tutorial/Laboratory Mix:</td>
<td>Lecture (2); Tutorial (1); Laboratory (0)</td>
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<table>
<thead>
<tr>
<th>CILO No.</th>
<th>TLAs</th>
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<tbody>
<tr>
<td></td>
<td>Total Hours (if applicable)</td>
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4. Assessment Tasks/Activities:

Coursework: 50%
Examination: 50% (Examination duration = 2 hours)

To pass a course, a student must obtain minimum marks of 30% in both coursework and examination components, and an overall mark of at least 40%.

<table>
<thead>
<tr>
<th>CILO No.</th>
<th>Type of assessment tasks/activities</th>
<th>Weighting (if applicable)</th>
<th>Remarks</th>
</tr>
</thead>
</table>
| CILO 1   | ● Coursework: scenario type question(s) in these areas - request students to exercise analyzing technique and provide solution  
          ● Mid-term Test/ Examination: question(s) in these areas                                           | ---                       | ● Nil   |
| CILO 2   | ● Coursework: scenario type question(s) in these areas - request students to exercise analyzing technique and provide solution  
          ● Mid-term Test/ Examination: question(s) in these areas                                           | ---                       | ● Nil   |
| CILO 3   | ● Coursework: scenario type question(s) in these areas - request students to exercise analyzing technique and provide solution  
          ● Mid-term Test/ Examination: question(s) in these areas                                           | ---                       | ● Nil   |
| CILO 4   | ● Coursework: scenario type question(s) in these areas - request students to exercise analyzing technique and provide solution  
          ● Mid-term Test/ Examination: question(s) in these areas                                           | ---                       | ● Nil   |

5. Grading of Student Achievement:

Grading Pattern:

Standard

Refer to Grading of Courses in the Academic Regulations.

Part III

Keyword Syllabus:

**Recommended Reading:**

- **Texts:**
  5. Yuill, G. K. & Associates Ltd., 1990, An annotated guide to models and algorithms for energy calculations relating to HVAC equipment, ASHRAE.

- **Online Resources:**
  1. Nil