

# AIR CONDITIONING/REFRIGERATION THEORY & PRACTICAL EXPERIENCE

## Curriculum Guide for Academic Year 2011-2012

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Students planning to **transfer** to a four-year college or university should refer to the ASSIST web site at [www.assist.org](http://www.assist.org) and **consult a counselor** before beginning a program of study. To meet with a counselor call 562-938-4561 for the LAC, or (562) 938-3920 for PCC. Students may also wish to visit the Transfer Center on either campus.

### Program of study leading to: Associate in Science (A.S.) Degree

<u>REQUIRED COURSES</u>		UNITS	In Progress	Completed Grade
AC_R 211	Air Conditioning & Refrig. Fundamentals	10		
AC_R 212	Electrical Theory & Component Application	10		
† AC_R 213	Psychrometrics, Ducting and Load Calculations	10		
† AC_R 214	Troubleshooting Total Comfort Systems	10		
<b>TOTAL UNITS</b>		<b>40</b>		

**REQUIRED FOR THE COMMUNICATION & ANALYTICAL THINKING General Education component:**  
 Math Requirement: Complete Math 120<sup>#</sup> or 130<sup>#</sup> or 130A<sup>#</sup> OR a more advanced level of Mathematics<sup>#</sup>.

For graduation with an **Associate in Science (A.S.) Degree with a major in Air Conditioning/Refrigeration-Theory & Practical Experience:**

- Units:** Complete a minimum of 60 units, distributed as follows:
 

<b>A/C Refrig. Theory &amp; Prac. Major:</b>	40 units
<b>General Education/A.S.</b>	19 units
<b><u>Electives/Other courses:</u></b>	<u>1 units</u>
<b>TOTAL:</b>	60 units
- Scholarship:** Maintain an **overall grade point average (GPA) of 2.0** ("C" average) based on all accredited college work applied to the degree, no matter where completed. For this **field of concentration, complete each course above with a grade of "C" or better**, or "P" if course is graded on a P/NP basis.
- Residence for the Degree:** Complete at least 30 units of the required 60 in residence at LBCC, or complete in residence at LBCC at least 20 units within the last 30 units of work applied to the degree.
- Residence for the Field of Concentration:** Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 20 units** of the required 40 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
- General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements\*, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at <http://osca.lbcc.edu>.
- Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

**A.S. requirements continue on following page.**

**A.S. requirements continued from previous page.**

\*The requirements for general education/proficiency and the field of concentration (major) need to be from the same catalog year. This catalog year may be any year between the year of initial enrollment to the present, provided continuous enrollment is maintained throughout. See the catalog for definition of "continuous enrollment".

Unless otherwise noted, "double-counting" is not allowed. That is, one course may not be used to fulfill both a field of concentration requirement and to fulfill a general education requirement.

**Program of study leading to:  
Certificate of Achievement**

**REQUIRED COURSES**—Complete the 40 units of required courses as listed in the Associate Degree requirements box on the first page.

**REQUIRED COURSES**

		In Progress	Completed
<b>TOTAL UNITS</b>	<b>40</b>	<input type="text"/>	<input type="text"/>

For graduation with a **Air Conditioning/Refrigeration Theory and Practical Experience Certificate of Achievement**:

1. Complete each of the **REQUIRED COURSES** listed above with a **minimum grade of "C"**.
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 20 units** of the required 40 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
3. Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

For both the **Associate in Arts** and the **Certificate of Achievement**, the following courses are **RECOMMENDED**, but are not **required** to earn either.

**RECOMMENDED but not required courses:**

**REQUIRED COURSES**

FORK 801

Forklift Safety & Operation

UNITS	In Progress	Completed Grade
1	<input type="text"/>	<input type="text"/>

**Career Opportunities**

Students prepare for entry-level positions in air conditioning and refrigeration. The program includes H.V.A.C.R. (Heating, Ventilation, Air Conditioning, and Refrigeration) technology for commercial and industrial applications. Emphasis will be placed on training an individual to have the theory and manipulative skills that will enable that person to be a productive member of the air conditioning and refrigeration industry.

**Program Mission and Outcomes**

The Refrigeration & Air Conditioning Technology program's mission is to provide technical training to meet the demands of the industry and the needs of the individual to provide employment and prepare students for the EPA exam which is required in the industry.

Outcomes:

- Perform service and repair tasks identified by the North America Technician Excellence (NATE).
- Perform industry standard diagnostic information to repair complex air conditioning problems using standard test equipment.

**Legend**

† This course has a prerequisite. Prerequisite courses must be complete with at least a "C" or "P" grade. Refer to the General Catalog (<http://www.lbcc.edu/cat/index.html>), the Schedule of Classes (<http://schedule.lbcc.edu/>), or the online Credit Course Outline (<http://wdb-asir.lbcc.edu/coursecurriculum/coursestetails/>) for specific prerequisite information.