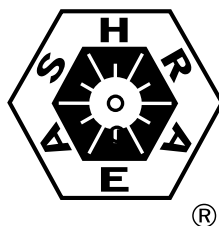


Instructions
for Participating in
ASHRAE's
**Operations & Performance
Management Professional (OPMP)**
Certification
Program

Effective date: 10/06/2009



Related Resources

Resources available to help prepare for the OPMP examination include, but are not limited to, the following:

- ANSI/ASHRAE Standard 15-2007 - Safety Standard for Refrigeration Systems
- ANSI/ASHRAE Standard 55-2004 - Thermal Environmental Conditions for Human Occupancy
- ANSI/ASHRAE Standard 62.1-2004 - Ventilation for Acceptable Indoor Air Quality
- ANSI/ASHRAE/IESNA Standard 90.1-2004 – Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings
- ANSI/ASHRAE/IESNA Standard 100-2006 – Energy Conservation in Existing Buildings
- ANSI/ASHRAE/ACCA Standard 180-2008 – Standard Practice for Inspection and Maintenance of Commercial Building HVAC Systems
- CIBSE Guide M - Maintenance Engineering and Management 2008
- Guideline 0-2005 - The Commissioning Process
- Guideline 4 - 2008 - Preparation of Operating and Maintenance Documentation for Building Systems
- Guideline 12-2000R - Minimizing the Risk of Legionellosis Associated With Building Water Systems
- The Commissioning Process & Guideline 0 – ASHRAE seminar
- Fundamentals of Standard 90.1 – ASHRAE eLearning course
- Fundamentals of Standard 62.1 – ASHRAE eLearning course
- ISO 14001-2004 - Environmental Management Systems
- Building Operator Certification (BOC) training
- Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations
- (December 2000, U.S. EPA, in cooperation with NSF International)

ASHRAE does not warrant that participation in or use of any of the above resources will guarantee successful completion of the examination. Nor does ASHRAE warrant that all information presented in all of the above resources is non-contradictory.

However, ASHRAE will do its best to avoid testing contradictory, out-of-date, or inaccurate information.



**The American Society of Heating, Refrigerating and
Air-Conditioning Engineers**

**Operations and Performance Management Professional
Examination Detailed Content Outline**

Open cells show an examination could include items from indicated cognitive levels.
Shaded cells prevent appearance of items on examinations.

	Cognitive Level			Totals
	Recall	Application	Analysis	
I. FACILITY LIFE CYCLE	4	8	4	16
A. Process	2	5	2	9
1. Commissioning				
a. advise an owner whether functional performance testing results of new building systems (e.g., mechanical, electrical, plumbing, life safety) conform to specification and performance criteria				
b. facilitate testing of existing building systems (e.g., mechanical, electrical, plumbing, life safety) for conformance to specification and performance criteria				
c. interpret functional performance testing of existing building systems (e.g., mechanical, electrical, plumbing, life safety) for conformance to specification and performance criteria				
d. determine when expert advice should be sought for potential corrective actions that will address deficiencies identified by functional performance testing				
e. implement corrective actions based on functional performance testing results				
f. recommend enforced system design requirements before occupancy				
2. Post-occupancy evaluation				
a. facilitate building operations data collection (e.g., building automation system, work order system, personal observation, occupant survey)				
b. monitor data (e.g., energy usage, complaints, temperature, pressure, repair logs) to verify performance of building systems on an ongoing basis				
c. recommend alterations to any building system based on functional changes				
d. order testing of building systems (e.g., mechanical, life safety, plumbing) for conformance to specification and performance criteria				
3. Continual improvement				
a. identify ongoing training needs for occupants, and operations and maintenance staff				
b. identify benchmarks that are appropriate for a building and staff productivity and its uses				
c. use management benchmarks to report on performance levels				
d. evaluate processes (e.g., preventive maintenance, inventory control, staffing levels) for potential energy savings and maximize life-cycle				
4. Manage end-of-service life issues for occupant spaces and building system components				



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	Cognitive Level			Totals
	Recall	Application	Analysis	
B. Costing for Building Components	2	3	2	7
1. Capital budget				
a. estimate costs associated with potential projects				
b. calculate life-cycle costs				
c. interpret life-cycle cost and related economic analyses				
d. recommend projects for the capital budgeting process				
2. Operations budget				
a. identify elements of the operations budget				
b. prepare an operations budget for a building				
c. manage the operations budget				
d. compare life-cycle costs for component options				
e. compare lease-, performance-, and purchase-contract options				
f. identify anomalies in resource and other budget items				
g. recommend operational changes in reaction to anomalies				
II. MANAGEMENT ASPECTS	18	26	17	61
A. Creation and Implementation of an Operations and Maintenance Program	3	3	3	9
1. Prepare a systems and equipment inventory				
2. Select a maintenance strategy for the functional use of individual building systems				
a. time-based				
b. reliability-centered				
c. predictive				
d. preventive				
e. run-to-failure or reactive				
3. Creation of a building operations plan				
a. develop measures of performance				
b. select inspection and maintenance tasks				
c. determine inspection frequency				
d. identify resources (e.g., inventory, staff)				
e. describe failed conditions				
f. adjust inspection frequency				
4. Write business continuation plans for emergencies (e.g., life-safety, building operations)				



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	Cognitive Level			Totals
	Recall	Application	Analysis	
B. Supervision of Operations and Maintenance	2	5	1	8
1. Resource allocation				
a. manage work orders including the use of computerized maintenance management systems (CMMS)				
b. prioritize tasks				
c. schedule tasks				
d. monitor task completion				
e. manage inventory (e.g., parts, tools)				
f. manage the budget				
2. Repair				
a. initiate repairs or corrective actions				
b. determine the most efficient skill or ability resource utilization				
c. identify associated work that should be recommended				
d. identify items on the predictive failure curve that deserve attention				
e. verify satisfactory completion of each repair				
3. Implement the business continuation plan (e.g., restart, relocation, data preservation)				
C. Manage Building Performance	5	5	5	15
1. Trend and performance data				
a. create trend data from building systems				
b. interpret trend data (e.g., results of water and eddy current analyses, fan and pump curves, utility bills, data loggers)				
c. interpret building management system data				
d. analyze maintenance reports				
2. Compare building performance data to design expectations from calculated or computer modeling results				
3. Access data from a building information management system				
4. Use a building information management system for problem resolution				
5. Instruct staff and contractors on design intentions behind building systems				
D. Building Automation Systems	3	3	2	8
1. Verify that systems are operating according to the designed sequence of operations				
2. Verify that building performance indicators match outputs from automated systems				
3. Correct systems that are operating out of specification				
4. Maintain sensors and controllers				
5. Document program, schedule, and setpoint changes				



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	Cognitive Level			Totals
	Recall	Application	Analysis	
6. Identify failures of building automation system components				
7. Instruct staff and contractors on design intentions and functionalities behind the building automation system				
8. Create trend logs				
E. Documentation Preparation	1	1	1	3
1. Prepare inspection reports				
2. Maintain statutory records				
3. Prepare monthly reports (e.g., variances, complaints, preventive maintenance tasks scheduled and completed, log of subcontractor work)				
4. Update record drawings				
5. Document building management system programming changes				
F. Procurement Management	1	1	1	3
1. Evaluate the cost/benefit of using outside contractors for projects				
2. Develop the scope of work for an outside contract				
3. Request or write purchase orders				
4. Manage purchase orders				
5. Manage contracted work				
6. Assess the environmental and energy impacts of purchased products and services				
G. Training	1	3	1	5
1. Identify ongoing training needs for occupants, and operations and maintenance staff				
2. Select entities who can provide training				
3. Schedule training for staff and occupants				
4. Mentor staff to expand their problem solving abilities				
5. Document training that has been completed				
6. Develop a budget and support for training activities				
7. Assess the effectiveness of training				
H. Quality Management	1	3	1	5
1. Identify benchmarks associated with building performance goals				
2. Identify benchmarks associated with operations and maintenance objectives including internal staff and external contractors				
3. Prepare a quality assurance plan				
4. Compare quality assurance data with benchmarks				
5. Implement actions to improve quality				



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	Cognitive Level			Totals
	Recall	Application	Analysis	
I. Resource Management	1	2	2	5
1. Develop a resource conservation plan including benchmarks				
2. Implement the resource conservation plan				
3. Monitor resource utilization				
4. Compare resource utilization results against benchmarks				
5. Implement actions to further improve resource utilization				
III. COMMUNICATIONS	2	5	3	10
A. Management	0	1	1	2
1. Assess building performance needs of the owner				
2. Align operations and management priorities with those of the owner				
3. Educate the property management about building performance, and operations and maintenance				
4. Advocate projects that enhance building performance and efficiency to senior management				
B. Occupants	1	1	1	3
1. Interface with customer relations (e.g., help-desk, tenant relations) staff to meet needs of occupants				
2. Prioritize needs of occupants				
3. Respond to data collected from occupants regarding building performance and corrective actions				
4. Use data from the request tracking system to respond to occupants				
5. Track responses including response times and customer satisfaction				
6. Ensure occupants are informed about and prepare for impacts from operations and maintenance activities				
C. Staff	1	3	1	5
1. Prioritize work orders for repairs, preventive maintenance, capital improvements, and occupant requests				
2. Distribute work orders for repairs, preventive maintenance, capital improvements, and occupant requests				
3. Coach staff in problem solving strategies				
4. Verify documentation of completed work				
5. Interact with staff and suppliers about scheduled work				
6. Provide information to staff regarding special events				
7. Communicate operational goals and objectives				
8. Implement rewards and discipline				



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	Cognitive Level			Totals
	Recall	Application	Analysis	
IV. ENVIRONMENTAL, HEALTH, AND SAFETY	6	4	3	13
A. Legal Requirements	2	2	1	5
1. Comply with laws (e.g., environmental, occupational safety, MSDS, HAZMAT, fire and life-safety systems, labor)				
2. Comply with codes				
3. Identify tasks that require Authorized Persons				
B. Voluntary Steps	2	1	1	4
1. Manage indoor environmental quality (e.g., temperature, humidity, lighting, noise, air quality)				
2. Create safety programs for staff and occupants				
3. Manage the carbon footprint of a building				
4. Evaluate ethical and environmental impacts of building operations and maintenance				
5. Recommend potential solutions for ethical and environmental impacts of building operations and maintenance				
C. Security	2	1	1	4
1. Control access to restricted areas				
2. Manage the security of building systems against extraordinary events				
3. Test security systems against intrusion				
4. Ensure required signage is posted				
5. Integrate security and building management systems				
Totals	30	43	27	100

Renewal Requirements for ASHRAE Certification Programs

Each Certificant is required to renew his/her certification every three years. The renewal process includes submittal of a renewal fee (\$125 for members, \$195 for non-members) and evidence of earning 45 ASHRAE Continuing Education (ACE) units during each three-year renewal period.*

The three-year renewal period starts on December 31 of the year in which the Certificant earns the certification. For example, a Certificant who earns the certification anytime in 2008 will have a renewal deadline of December 31, 2011.

Individuals who fail to submit renewal fees and evidence of the required ACEs by the December 31 deadline will be considered as "non-renewing," notified accordingly, and advised to cease using the specific certification designation after their names. The names of non-renewing Certificants will be removed from the list of Certificants on ASHRAE's website.

To be reinstated, non-renewing Certificants must submit the renewal fee, a reinstatement fee (\$60), and evidence of the required ACEs by December 31 of the year following their active status. After that date, non-renewing Certificants must follow the same process as that for the initial application. Extenuating circumstances will be reviewed on a case-by-case basis by the Committee.

Acceptable Methods of Obtaining ACE credits

Type	Credits
Successful completion of a course in a related field from an accredited institution of higher learning Note: To qualify for this credit, a course must be offered regularly and must conclude with a test that sets a passing grade.	15 ACEs per credit hour (semester system) OR 10 ACEs (quarter system)
Patent Note: Credit can be claimed after a patent is issued and the inventor submits details to the board. The invention must be related to engineering.	10 ACEs
Publication of article/paper/book in recognized peer reviewed journal in relevant field (max. 3 per year). Note: A "news" article in a technical or professional bulletin is not considered a published paper.	10 ACEs per published item
Active participation in a professional or technical society relevant to the field Note: The certificant must serve as an officer and/or must actively participate in a committee of the organization. PDH credits are earned at the end of each year of service.	2 ACEs per year per organization
Writing ASHRAE certification exam items in relevant field	5 ACEs per exam
Accreditation Visit Evaluator (or ASHRAE approved equivalent)	3 ACEs per year
Professional awards	2 ACEs per award
Teaching of approved courses and workshops in relevant field Note: Teaching credit is valid for teaching a course or seminar for the first time only. It does not apply to faculty performing regular duties.	ACEs are determined by multiplying by two (2) the total number of course hours (for preparation time).
Attendance at meetings and conferences (e.g. National, Annual, Regional) or special conferences relevant to the field	Qualifying seminars and workshops will be based on one ACE unit for each hour of attendance.
Attendance and completion of approved short courses and other continued education activities in relevant field	Qualifying seminars and workshops will be based on one ACE unit for each hour of attendance.

*Certificants are not required to submit a report of Professional Development activities as part of certification renewal. A percentage of Certificants are randomly chosen for audit each year. If audited, a report of continuing professional development with documentation must be submitted to the Certification Coordinator for review.

Activities that qualify for ASHRAE's Continuing Education units **might** also qualify for continuing education credits (e.g., PDHs, CEUs, or LUs) from other credentialing bodies or organizations. The individual is responsible for contacting the relevant governing body to determine whether an activity qualifies for that body's continuing education credit.

For questions about any of the information about ASHRAE's certification renewal requirements, including clarification of acceptable and reportable qualifying activities, please contact ASHRAE's Certification Coordinator at certification@ASHRAE.org.