



Operations and Maintenance

Introduction..... 1

Chapter 1: Introduction to Operations and Maintenance

Topic 1: Operations and Maintenance Overview 3
Topic 2: Begin with a Plan 6

After completing this chapter, students will be able to:

- Explain the role of operations and maintenance in facility management.
- Discuss the scope of the facility manager’s duties and responsibilities in support of the organization’s missions and goals.
- Describe how to develop, recommend and manage/oversee a strategic facility plan and associated O&M tactical plans.
- Determine appropriate O&M schedules for a comprehensive list of facility assets.

Chapter 2: Assess Facility Needs

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After completing this chapter, students will be able to:

- Identify and describe building structures, systems, interiors, exteriors and grounds.
- Discuss common deficiencies in building structures, systems, interiors, exteriors and grounds.
- Identify security, health and safety considerations relative to building structures, systems, interiors, exteriors and grounds.

Chapter 3: Manage/Oversee Operations and Maintenance of Building, Systems and Equipment

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After completing this chapter, students will be able to:

- Describe how acquisition begins an asset’s life cycle and what factors are used in deciding on an acquisition.
- Explain the elements of installation and commissioning of systems, materials and equipment.
- Describe typical preventive maintenance activities.
- Explain how reliability-centered maintenance is used to balance maintenance activities effectively with analysis and management tools.
- List the elements of a typical maintenance management workflow process.
- Describe the operation of building systems such as building automation, energy management, health and safety elements and emergency preparation.
- Describe typical conditions and measurements that signal it is time to replace an asset.

Chapter 4: Manage/Oversee Occupant Services

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After completing this chapter, students will be able to:

- List typical occupant services and describe the process of determining guidelines for occupant service performance expectations.
- Describe a typical workflow process for occupant services.
- Explain the key aspects of a successful occupant services plan.
- Describe the guidelines that support the workflow process.
- Describe an effective approach to preparing for modifications to occupant services.

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After completing this chapter, students will be able to:

- Discuss the elements, value and use of service level agreements.
- Describe the process to follow when determining whether to use staff or contractors for each service or operation.
- Discuss the process of comparing and selecting among outsourcing candidates for O&M services.
- Explain the negotiation process for a typical service level agreement.
- Describe the principles of measuring competency, monitoring performance, evaluating outcomes for work/service, and developing/promoting best practices.
- Describe key factors and attitudes relative to contract disputes and their resolution.

Chapter 6: Measure Operations and Maintenance Performance

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After completing this chapter, students will be able to:

- Discuss life-cycle cost analysis relative to total cost of ownership.
- Use appropriate measuring and data-gathering tools such as reliability-centered maintenance, design for reliability, energy modeling and risk assessment.
- Describe how to use the workflow process, specific performance measurements and key performance indicators to characterize performance using a balanced scorecard.
- Explain how to determine key performance indicators that represent the strategic facility plan.
- Discuss techniques for monitoring and improving customer satisfaction.

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