

# IFMA FOUNDATION ACCREDITED DEGREE PROGRAMS

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## SELF-STUDY REPORT/APPLICATION

For \_\_\_\_\_  
Name of Institution

\_\_\_\_\_  
Complete name of degree/program

\_\_\_\_\_  
Name of degree/program to be used on certificate, if different than above

### COMPLETED BY

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

### REVIEWED BY

\_\_\_\_\_  
SIGNATURE OF DEAN OR OTHER INSTITUTION REVIEWER

\_\_\_\_\_  
TITLE

\_\_\_\_\_  
DATE

## SELF-STUDY REPORT

The institution must complete and submit the following self-study report, which is a qualitative assessment of the strengths and limitations of the program, including the achievement of the program and institution objectives. The following form will be used for the report and can be downloaded from the IFMA Foundation Web site, [www.ifmafoundation.org](http://www.ifmafoundation.org). Please supply all information in the order listed on the form.

*Ideally, a 12 point, Times New Roman font should be used. Nothing smaller than a 10 point font will be accepted.* The preferred method of submitting this self-study is in electronic PDF format. If the report is in hard copy, format the material as you would an electronic document and send 10 copies in appropriate sized binders. The application fee is US\$1,500 and the remittance should be made payable to the IFMA Foundation, Accredited Degree Programs, 1 E. Greenway Plaza, Suite 1100, Houston, TX, 77036-0193.

### *General Information*

**Institution name:**

**Institution address:**

**Name and address of college and/or department administrative unit:**

**Name of president or chief academic officer:**

**Name and title of dean and/or department head:**

**Name and title of program head:**

**Names of other departments in administrative unit:**

**Department phone number:**

**Department fax number:**

**Number of students enrolled in facility management program:**

**1. Total number of students enrolled:**

**2. Number of full-time students enrolled:**

**3. Number of part-time students enrolled:**

**Institutional accreditation/accreditation organization and dates of accreditation<sup>1</sup>:**

**History of accreditation by IFMA:**

**Academic units within the institution:**

**Check the choices that apply:**

**Program Level:** \_\_\_\_\_ **Masters**      \_\_\_\_\_ **Baccalaureate**      \_\_\_\_\_ **Associate/Diploma**

**Is this:** \_\_\_\_\_ **Initial Accreditation**      \_\_\_\_\_ **Re-accreditation**

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<sup>1</sup> The institution shall document any actions taken by other accrediting or recognizing agencies that have denied the institution or program accreditation or pre-accreditation status, have placed the institution or program on public probationary status, or have revoked the accreditation or pre-accreditation status of the institution or program.

## ***Compliance with Standards***

**The information contained in this section of the self-study report shall deal specifically with how each program and option meet each standard. The institution is responsible for providing information that clearly illustrates how the standard and its subsections are being met. Describe how each program and option complies with the standard. Refer to the *Standard for IFMA Foundation Accredited Degree Programs* for more information on each point below.**

**Any supporting documentation should be labeled clearly and placed at the end of each section in the application binder or the electronic submission.**

**The numbering system that follows corresponds with that in *Standards for Accredited Programs*. Use this same numbering system in the application.**

### ***3.1 Philosophy and Objectives***

#### **3.1.1 Mission**

The mission and purpose of the academic division that houses the facility management program shall be compatible with the definition of facility management as set out in section 1.1 of *Standards for IFMA Foundation Accredited Programs*. Please explain the division's mission and purpose below:

#### **3.1.2 Program Goals**

The facility management program shall have clearly written goals and objectives. State the program's strategies for achieving these objectives below.

### **3.1.3 Program Acceptance**

The program shall be understood and supported by appropriate individuals and representative groups within the internal university community and facility management community. Supply examples.

## **3.2 Programs**

### **3.2.1 Program Name**

Each program and/or program option shall have the words “facility management” in the title. Titles such as “business,” “engineering,” or “architecture” which imply that the focus of the program is in a related field of study, are not appropriate. List the full program name.

### **3.2.2 Program Level**

The program shall lead to associate/diploma, baccalaureate or master’s degree, and no less than the junior and senior years of baccalaureate level study in facility management shall be offered by the institution seeking accreditation. Appropriate lower division requirements may be offered by the same institution or may be transferred from other institutions including community colleges and technical institutes. List the program level.

### **3.23 Program Definition**

The program may have more than one option, specialization or concentration. Specific course requirements for each option shall be clearly specified and all program options shall meet or exceed IFMA standards. Certain standards, such as follow-up studies of graduates, may not be appropriate for new options within established programs, and a waiver may be granted by the IFMA committee on accredited programs.

### **3.24 Program Emphasis**

Primary emphasis in the program shall reflect accepted facility management practices. List the program emphasis here.

### **3.25 Course Sequencing**

There shall be evidence of appropriate sequencing of course work in each program to ensure that advanced level courses build upon concepts covered in beginning level course work. Include a copy of a degree plan here.

### **3.2.6 Facility Experiences**

Each program shall include appropriate facility experiences such as facility tours, work-study options and cooperative education, or seminars focusing on problem-solving activities related to facility situations. Supply examples below.

### **3.2.7 Program Validation**

Appropriate validation of program content shall be an ongoing process and shall be accomplished through a combination of external experts, an advisory committee and follow-up studies of program graduates. Provide documentation of this validation below.

### **3.2.8 Program Development, Revision and Evaluation**

Program development, revision and evaluation shall involve currently enrolled students, individuals responsible for instruction, program graduates and representative employers. These individuals should be part of the advisory process and may be members of a formal advisory committee. Include a list of the names and phone numbers for advisory committee members in this section or in the appendix.

### **3.2.9 Transfer Course Work**

Policies shall ensure that course work transferred from other institutions is comparable to course work offered at the institution seeking program accreditation. Include a copy of the policy here.

### **3.2.10 Program Publicity**

Institutions shall broadly and accurately publicize, particularly to prospective students: (a) facility management program goals and objectives, (b) pre-admission testing or evaluation requirements and standards, (c) educational achievement rates of graduates and (d) fees and other charges. Copies of brochures and other materials should be included here or in the appendix.

### **3.2.11 Legal Authorization**

Only institutions and programs legally authorized under applicable law to provide a program beyond the secondary level are considered for accreditation. What is the name and address of the authorizing agency that accredited your institution?

## ***3.3 Instruction***

### **3.3.1 Study Guides/Course Materials**

Course syllabi/course outlines and other related materials that clearly describe appropriate course objectives, content, references utilized, student activities and evaluation criteria must be included here or in the appendix.

### **3.3.2 Learning Methodology**

The standard methodology or methodologies used for teaching and learning should be identified and explained for the curriculum overall or for each course individually.

The goals of the program and knowledge levels for graduates should also be identified.

### **3.3.3 Evaluation of Learning**

Assessment tools should be identified for the program overall or for each course individually. Evaluation of the scope of learning and tools for evaluation of student achievement of the objectives should be clearly outlined to provide the review committee an understanding of how students are evaluated and how these evaluations impact course content, development and improvement.

### **3.3.4 Program Balance**

Appropriate integrative and problem-solving activities shall be included in the program, and a reasonable balance must be maintained in course work between the practical application of "how" and the conceptual emphasis of "why." Supply examples below.

### **3.3.5 Computer Applications**

The program shall include instruction on computer applications and the use of computers for facility management problem solving. Supply examples of computer applications here.

### **3.3.6 Communications**

Oral presentations and technical report writing shall be elements of course requirements. Supply examples here.

## ***3.4 Faculty***

### **3.4.1 Full-Time Faculty**

Each program and program option shall have at least one appropriately qualified full-time faculty member dedicated to the facility management program. Faculty qualifications shall include emphasis upon: (a) extent and pertinence of academic preparation, (b) extent, recency and pertinence of facility professional level experience (such as technical supervision or management), (c) extent, recency and pertinence of applied facility experience (such as technical applications), and (d) membership and participation in appropriate professional organizations. The biographical information form on the next page should be completed on each full-time and adjunct instructor.

Instructor Name: \_\_\_\_\_

Check one:

Full-time

Part-time

Educational qualifications with degrees and dates awarded:

Professional and applied facility management experience. Include organization name, title and dates:

Memberships and participation in related professional organizations. Include dates, positions held and other applicable information:

Teaching experience with institution names, dates and course/program titles:

Recent short courses/seminars presented. Include titles and dates:

Recent publications:

### **3.4.2 Minimum Faculty Qualifications**

The minimum academic qualifications for a tenure track faculty member shall be a bachelor's and master's degree in a discipline closely related to the faculty member's instructional assignments (except in unusual circumstances that must be justified individually). Professional degrees, licenses, certifications and other professional experience also will be considered in the evaluation process. List appropriate information here that was not included in the response to 3.3.1.

### **3.4.3 Academic Preparation of Faculty**

A minimum of 50 percent of the regular full-time faculty members assigned to teach in the program shall have an earned doctorate or terminal professional degree. The committee may grant exceptions to this standard if the institution has a program in place that will bring the institution into compliance within a reasonable time. List faculty and their corresponding degrees below:

### **3.4.4 Selection and Appointment Policies**

Policies and procedures utilized in the selection and appointment of regular faculty shall be clearly specified and shall be conducive to the maintenance of high-quality instruction. Include a copy of the institution's selection and appointment policy here:

### **3.4.5 Tenure and Reappointment Policies**

Faculty tenure and reappointment policies and procedures shall be comparable to other professional program areas in the institution. Requirements in the areas of teaching, service and scholarly activity shall be clearly specified for faculty in facility management. Briefly show that facility management faculty tenure and reappointment policies are comparable to other departments in the institution.

### **3.4.6 Faculty Loads**

Faculty teaching, advising and service loads shall be comparable to those in other professional program areas at the institution. Consideration shall be given in faculty teaching-load assignments to high contact hours resulting from laboratory and studio teaching assignments. Briefly explain how facility management faculty loads are comparable to that of other departments.

## **3.5 Students**

### **3.5.1 Admission and Retention Standards**

Admission and retention standards shall be used to ensure that students enrolled are of high academic quality. These standards shall compare favorably with the institutional standards. Sources of information may include admission test scores, secondary school rankings, grade point averages, course syllabi, course examinations, written assignments and oral presentations. Supply examples here.

### **3.5.2 Scholastic Success of Students**

Students in facility management shall have scholastic success comparable to those in other curricula at the institution. Grading practices in facility management courses shall be comparable to other departments and programs in the institution. Explain grading practices here.

### **3.5.3 Placement Services**

Appropriate services shall be available to assist with the placement of program graduates. Placement of graduates shall be tracked and the effectiveness of the services shall be evaluated by the administrative unit containing the facility management program. Explain placement and tracking services here.

### **3.5.4 Placement of Graduates**

The initial placement, job titles, job descriptions and salaries of graduates shall be consistent with the program goals and objectives. Follow-up studies of graduates shall be conducted at least every five years. Summary statistics relating to follow-up studies of graduates shall be made available to prospective students. These statistics shall include placement rates as well as salary levels of program graduates. Supply examples here.

### **3.5.5 Student Evaluation of the Program**

Evaluations of the facility management program shall be made by its graduates at least every five years. Student evaluations of individual classes shall be conducted on a regular basis. Supply examples here.

### **3.5.6 Student Enrollment**

Enrollment shall be adequate in each program area to operate the program efficiently and effectively. The level of available resources shall be considered as a constraint on the maximum number of qualified students to be admitted to the program. Enrollment shall be tracked, and factors affecting enrollment patterns shall be identified and analyzed. Enrollment projections shall be made that relate closely to short- and long-range goals and resource needs. Explain how the program complies with these requirements.

### **3.5.7 Advisory and Counseling Services**

Adequate and timely advising and counseling services shall be available for students. Outline available advising and counseling services here.

### **3.5.8 Ethical practices**

Ethical practices shall be fostered, including equitable student tuition refunds and nondiscriminatory practices in admissions and employment. Briefly explain such practices below.

## ***3.6 Administration***

### **3.6.1 Program Administration**

Programs in facility management are expected to have an identifiable, qualified individual with direct responsibility for program coordination and curriculum development. This individual should be a full-time faculty or administrative employee of the institution. Identify and briefly describe this person's role and qualifications.

### **3.6.2 Administrative Leadership**

Individuals assigned to administer facility management programs must demonstrate effective leadership and satisfactory support for facility management. Supply examples here.

### **3.6.3 Administrative Support**

There must be appropriate support for the facility management program from the personnel holding leadership positions in the departments and colleges where the facility management department is located. Briefly outline the administrative support received by the facility management department.

### **3.6.4 Support Personnel**

Support personnel such as teaching assistants, student work-study assistants, secretaries and service technicians shall be adequate to support program objectives. Describe how the program's support staff meets the department's needs.

## ***3.7 Facilities and Equipment***

### **3.7.1 Adequacy of Facilities and Equipment**

Physical facilities and equipment, which are suitable to serve the goals and objectives of the program, shall be available for each program option. Explain how the program meets this requirement.

### **3.7.2 Support for Facilities and Equipment**

Facility and equipment needs shall be reflected in the long-range goals and objectives for the program, and sources of potential funding shall be identified. Supply examples below.

## ***3.8 Computer Systems***

### **3.8.1 Technical Support**

Appropriate computer systems shall be available to students and faculty to cover functions and applications in each program area. These systems may be on- or off-site and centralized or decentralized as long as the systems are accessible to students and faculty by means of remote terminals and/or input-output equipment. Describe available computer systems.

### **3.8.2 Utilization of Computer Systems**

Evidence shall indicate that students and faculty are making adequate and appropriate use of computer systems. Supply examples below.

### ***3.9 Financial Resources***

#### **3.9.1 Financial Support**

The budget for the facility management program shall be adequate to support program objectives. Explain below.

### ***3.10 Library Services***

#### **3.10.1 Library Resources**

The administrative units containing the facility management program or the institutional library shall maintain a collection of current facility management reference materials adequate to meet the curriculum and research needs of students and faculty. Supply and explain examples.

### ***3.11 Facility Management Program Advisory Committee***

#### **3.11.1 Program Advisory Committee**

An advisory committee of knowledgeable professionals shall assist in the validation of program content. If more than one program or program option is available, then appropriately qualified facility representatives shall be added to the committee or more than one committee shall be maintained. Evidence shall be presented to indicate the: (a) procedures used in selecting members, (b) length of appointment, (c) organization of the committee, (d) committee responsibilities, (e) frequency of meetings, and (f) methods of conducting business. Explain these items below.

#### **3.11.2 Advisory Committee Meetings**

The program advisory committee shall meet at least once each year. Provide date of last meeting and anticipated date of next meeting.

## **5. Standards for Accreditation – Required Areas of Knowledge**

Accredited Degree Programs are required to meet the objectives outlined in each of the 10 principal areas described later in this section and are based on an outcomes assessment. The self-study must include an appraisal of the overall program objectives and include all of the material outlined in section 3.3.

The included tables are guidelines for achieving those minimum standards. It is understood that some programs may be at variance with these topics but may still be able to achieve acceptable compliance with this standard. A checklist is provided at the end of each narrative in the self-study for evaluation of the program in that specific area of knowledge.

Context in the standard and self-study means the basic classroom instruction for the specific area of knowledge, other than those listed in the FM competencies. FM competencies that are included in each area of knowledge are those defined by IFMA as necessary to be an excellent FM practitioner and earn the designation of Certified Facility Manager. In the “Course ID” column, more than one course may be listed as delivering the competency. If necessary, comments may be added in the “Additional Information” column.

### 5.1 Leadership and Management (Professional practice)

Facility managers should understand organizational, managerial, ethical and legal principles for the delivery of facility management services. They should also understand the relationship between the facilities unit, overall organizational structure and other divisions. Special emphasis should include: the history of facility management; leadership; regulatory issues; legal issues; corporate culture; organizational frameworks; organization of the facility management function and team; policy and procedures; contracts and contract documents; accountability; and personnel management.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Ethical and legal responsibilities and concerns		
2	History of facility management and related professions		
3	International facility management issues		
4	Facility management industry structure		
5	Concepts and responsibilities of the FM profession and how they relate to other related professions		
	<b>FM Competencies</b>		
	<b>#1 Plan and Organize the Facility Function</b>		
6	Create a mission for the facility function		
7	Assess business trends nationally, regionally and globally		
8	Plan facility function activities		
9	Organize the facility function		
	<b>#2 Manage Personnel Assigned to the Facility Function</b>		
10	Provide leadership		
11	Plan staffing needs and requirements		
12	Hire, contract, reassign, retrain, right-size and coordinate personnel assignments		
13	Coordinate work performed as contracted services		
14	Evaluate performance and support personnel development		
	<b>#3 Administer the Facility Function</b>		
15	Administer policies, procedures and practices		
16	Administer the acquisition, distribution and use of material resources		
17	Maintain documentation systems		
	<b>#4 Manage the Delivery of Facility Services</b>		
18	Plan, assure and evaluate service delivery		

### 5.2 Operation and Maintenance

An understanding of how a facility, its people, equipment and operations are serviced and maintained is essential for a facility manager. The facility manager must be able to oversee acquisition, installation, operation, maintenance and disposition of building systems, furniture and fixtures, grounds and exterior elements. The facility professional also recommends policies and develops standards, practices and procedures for the operation and maintenance of facilities.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Maintenance management (predictive, preventive and corrective)		
2	Develop standards, practices, policies and procedures for facility operation and maintenance		
3	Computer aided facility maintenance and operation systems		
4	Building systems and related technologies		
5	Ancillary FM functions:		
5a	Food services		
5b	Transportation and fleet management		
5c	Warehouse operations		
5d	Waste management		
6	Energy management		
6a	Primary energy and site energy		
6b	Energy efficient strategies in facility operation and maintenance		
6c	Load management (peak and off-peak, demand and energy)		
	<b>#1 Oversee Acquisition, Installation, Operation, Maintenance and Disposition of Building Systems (Competency 1)</b>		
7	Assess a facility's needs for building systems		
8	Recommend building systems		
9	Oversee the acquisition, installation, operation and maintenance of building systems		
10	Recommend and establish policies, practices and procedures for building systems		
11	Determine and administer the allocation of building systems' resources		
12	Monitor and evaluate how building systems perform		
	<b>#2 Manage the Maintenance of Building Structures and Permanent Interiors</b>		
13	Evaluate building structures and permanent interiors		
14	Manage the maintenance and cleaning needs of building structures and permanent interiors		

	<b>#3 Oversee Acquisition, Installation, Operation, Maintenance and Disposition of Furniture and Fixtures</b>		
<b>15</b>	Assess needs and oversee acquisitions		
<b>16</b>	Recommend and establish policies, practices and procedures for furniture and fixtures		
<b>17</b>	Evaluate furniture and fixture performance		
<b>18</b>	Manage the maintenance and cleaning of furniture and fixtures		
	<b>#4 Oversee Acquisition, Installation, Operation, Maintenance and Disposition of Grounds and Exterior Elements</b>		
<b>19</b>	Assess the effect of climate and extreme environmental conditions on grounds and exteriors		
<b>20</b>	Assess the need for alterations in grounds and exteriors		
<b>21</b>	Recommend and establish policies, practices and procedures for grounds and exteriors		
<b>22</b>	Evaluate grounds and exterior elements performance		
<b>23</b>	Manage the maintenance and custodial needs of grounds and exteriors		

### 5.3 Planning and Project Management

It is essential that a facility practitioner understand facilities and their components. This includes the impact of the facility on factors such as: individual and organizational effectiveness; construction, operating and maintenance costs; and the environment. The facility manager must master techniques and procedures for analyzing, planning, programming, designing, constructing, specifying, furnishing, equipping, occupying and evaluating facilities. The facility professional must be able to develop facility plans; manage all phases of projects; manage programming and design; and manage construction and relocation. Special emphasis should include: long-range and master planning for facilities; space forecasting, planning and management; the design-build cycle; project management; forming and managing the project team; standards; justifying budgets and project estimating; major procurements; interior design; specifying and ordering; codes, regulations, and standards; and management of designers, architects, engineers and other specialists.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Long-range, strategic and tactical planning		
2	Processes for planning, programming, designing, constructing and occupying facilities		
3	Basic building types and their affects on organizational functions		
4	Project management processes		
5	Cost estimating techniques		
6	Building codes, regulations, and standards		
	<b>FM Competencies</b>		
	<b>#1 Develop Facility Plans</b>		
7	Interpret the overall business goals, the organizational strategies used to accomplish those goals, and linking the facility planning to business planning		
8	Develop, maintain, and evaluate long-term, interim and short-term facility plans		
	<b>#2 Plan and Manage Projects</b>		
9	Define project scope		
10	Identify project teams		
11	Develop project plans (includes corporate and design standards) and alternative strategies		
12	Identify and secure necessary resources		
13	Develop bid specifications (includes furniture and fixtures)		
14	Setting compliance and performance criteria		
15	Develop and coordinating the approval process		
16	Coordinate and monitoring the project		
17	Identify, evaluate and control change orders		
18	Evaluate project results		
	<b>#3 Manage Program and Design</b>		
19	Manage and evaluate programming		

<b>20</b>	Manage and evaluate design		
	<b>#4 Manage Construction and Relocation</b>		
<b>21</b>	Manage and evaluate construction projects		
<b>22</b>	Manage and evaluate relocations		

#### 5.4 Communication

The ability to communicate effectively with management, users, staff and other professionals is a critical skill for facility managers. Effective communication involves the ability to receive information as well as share it. Special emphasis should include: listening skills; proper grammar and clear use of language; oral and graphic presentations; letter, e-mail, and report writing; formal and informal communications; proper use of electronic communications media; and use of multimedia devices.

<b>ID</b>	<b>Area of Knowledge</b>	<b>Course ID</b>	<b>Additional Information</b>
	<b>Context</b>		
<b>1</b>	Effective communication and reporting skills in the following areas:		
<b>1a</b>	Writing		
<b>1b</b>	Speaking		
<b>1c</b>	Presentations		
<b>1d</b>	Listening		
<b>2</b>	Comprehend financial, graphic and technical information and documents		
	<b>FM Competencies</b>		
	<b>#2 Communicate Effectively</b>		
<b>3</b>	Use effective communication strategies		
<b>4</b>	Clarify interpretations and confirm understanding		
<b>5</b>	Use communication technologies effectively		
<b>6</b>	Conduct effective group meetings		
<b>7</b>	Negotiate for services, resources, information and commitments		
<b>8</b>	Establish personal and professional networks		

### 5.5 Finance

Facility management functions include: facilities investment decisions; budget development and execution; taxation; control of expenditures; and operational and long-term planning of facilities and the facility management unit. They require a working knowledge of accounting, financial and economic principles and procedures in order to manage the finances of the facility function. This includes making the most effective use of funds to maximize the value of the owner's equity.

<b>ID</b>	<b>Area of Knowledge</b>	<b>Course ID</b>	<b>Additional Information</b>
	<b>Context</b>		
<b>1</b>	Financial analysis and justification of facilities decisions		
<b>1a</b>	Life-cycle costing		
<b>1b</b>	Payback analysis, net present value		
<b>1c</b>	Depreciation		
<b>2</b>	Financial and managerial accounting		
<b>3</b>	Risk management and analysis		
	<b>FM Competencies</b>		
	<b>#1 Manage the Finances of the Facility Function</b>		
<b>4</b>	Analyze financial data pertaining to facilities and facility services		
<b>5</b>	Develop, implement and manage building occupancy charge back system		
<b>6</b>	Prepare and manage capital and operational budgets		
<b>7</b>	Monitor revenues and expenditures to contain costs		
<b>8</b>	Manage the financial obligations of the facility function		

### 5.6 Human and Environmental Factors

The work environment contributes to employee health, safety, performance, comfort, satisfaction and quality of work life. It also contributes to organizational effectiveness and the attainment of organizational goals and plans. The actions of organizations also have substantial impact upon the natural environment. The facility manager must develop and administer programs that provide a productive work environment that is also compatible with excellent environmental sustainability practices. Therefore, it is necessary that graduates understand and be able to integrate concepts concerning relationships between the physical work environment and social, psychological and physiological needs of employees. It is also critical that graduates understand the relationship between facilities and organizational effectiveness and performance. The facility professional must develop and implement practices that promote and protect health, safety, security, the quality of work life, the environment and organizational effectiveness. Facility managers shall have as their primary goal the management of safe, humane and functional work environments in the context of sustainable ecological practices.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Environmental, psychology and physiology		
2	Human factors/ergonomics		
3	Environmental protection, laws and regulatory acts:		
3a	Energy efficacy and emission reduction		
3b	Water conservation and run-off management		
3c	Materials reuse and recycling		
3d	Solid waste reduction and management		
4	Sustainability practices		
4a	Building life cycle stages and concepts		
4b	Environmental impact analysis		
4c	Renewable energy		
4d	Functional flexibility and technological adaptability		
	<b>FM Competencies</b>		
	<b>#1 Develop and Implement Practices that Promote and Protect Health, Safety, Security, the Quality of Work Life, the Environment and Organizational Effectiveness</b>		
5	Evaluate and manage the facility's support of organizational goals and objectives		
6	Monitor changes in laws and regulations and assure that the facility is in compliance		
7	Monitor and adapt to changes in facility function and services		
8	Monitor changes in the people who use and visit the facility		
9	Monitor information and trends about human and environmental concerns		
10	Provide training to maintain safe and effective use of the facility		

<b>11</b>	Direct the development and administration of environmentally conscious programs		
<b>12</b>	Conduct due diligence studies (liability analysis)		
	<b>#2 Develop and Manage Emergency Preparedness Procedures</b>		
<b>13</b>	Develop emergency preparedness plans		
<b>14</b>	Assure people are trained in emergency preparedness procedures		
<b>15</b>	Assure all emergency systems are tested		
<b>16</b>	Assure emergency procedure drills are conducted		
<b>17</b>	Develop disaster recovery plans		

### 5.7 Quality Assessment and Innovation (Research and analytical methods)

A fundamental premise of facility management is that research-based knowledge should form the foundation for practice. This commitment to the use of research-based information requires students to be consumers of research-generated knowledge and tools and, on occasion, to carry out or manage research. With this understanding of research and analytical methods, facility practitioners evaluate conflicting priorities and know when and how to apply knowledge and procedures. The facility manager also must manage the following processes: assessing the quality of services and the facility's effectiveness; benchmarking; audit activities; and developmental efforts of facility services to make innovative improvements in facilities and facilities services.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Literature search		
2	Basic descriptive and inferential statistical methods		
3	Presentation of statistical information		
4	Understanding research design and methodologies		
5	Interpreting research		
	<b>FM Competencies</b>		
	<b>#1 Manage the Process of Assessing the Quality of Services and the Facility's Effectiveness</b>		
6	Assure customer surveys are conducted		
7	Assure processes are documented		
8	Select methods to collect, verify and analyze data		
9	Improve the facility and service delivery processes		
10	Monitor and promote the quality process		
11	<b>#2 Manage the Benchmarking Process</b>		
12	Establish benchmarks		
13	Determine the potential for improved performance		
14	Integrate finding into the facility management function and business goals		
	<b>#3 Manage Audit Activities</b>		
15	Comply with laws and regulations		
16	Conduct internal studies		
17	Conduct mandatory audits as required by regulation		
	<b>#4 Manage Developmental Efforts of Facility Services to Make Innovative Improvements in Facilities and Facility Services</b>		
18	Investigate ways to improve facility services		
19	Assess risks and opportunities		
20	Conduct pilot tests when developing new procedures		

### 5.8 Real Estate

Real property constitutes a significant percentage of an organization's total assets. Managing these assets as an investment and profit center is an important aspect of facility management. Facility practitioners also must be knowledgeable in the acquisition, disposal and leasing of property. Special emphasis should include: real estate master planning; property acquisition and disposal; leasing practices and lease management; real estate marketing and market analysis; feasibility analysis; taxation; real estate finance; site evaluation and selection; occupancy and use constraints; regulations and incentives.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Marketing, market analysis and appraisal		
2	Real estate taxation		
3	Real estate financing and development economics		
4	Property development		
	<b>FM Competencies</b>		
	<b>#1 Manage and Implement the Real Estate Master Planning Process</b>		
5	Manage the development and implementation of a real estate master plan for the organization		
6	Maintain the real estate master plan		
	<b>#2 Manage Real Estate Assets</b>		
7	Manage the negotiation, acquisition, and disposition of company leased and owned property		
8	Evaluate and recommend action on development decisions		
9	Direct highest and best use studies		
10	Evaluate the effects of economic change on real estate assets		
11	Evaluate the effects of proposed real estate changes on different business units		
12	Manage the real estate lease portfolio		
13	Inventory, track and report real estate assets		
14	Maintain real estate documents		

### 5.9 Technology

Information technology systems are critical to supporting an organization's business strategies. Facility managers must assess and predict future requirements supporting both the FM departments and the organization's overall IT strategy. This includes the ability to acquire, implement and maintain systems; deploy assets; and dispose of technologies as required. Facility managers must understand technologies that support all aspects of facility operations, and employee office equipment requirements. These may include, but are not limited to: common application software (word processing, spreadsheet, presentation, database, and so forth), CAD/CADD, CAFM/CMMS, project management, asset management, energy management, cost analysis, building information modeling for design and construction, integrated workplace management systems, and other software systems. Additionally, facility managers are increasingly challenged to establish and maintain the infrastructure and technology required to support their organization's business goals. These may include, but are not limited to: hardware and software supporting voice, information and data; and media systems.

ID	Area of Knowledge	Course ID	Additional Information
	<b>Context</b>		
1	Common FM and office application software		
2	FM technology systems and technology trends		
3	Understand basic information and communication technologies and their application to buildings and FM software		
4	Organizational IT systems and trends		
	<b>FM Competencies</b>		
	<b>#1 Plan, Direct, and Manage FM Business and Operational Technologies</b>		
5	Identify and interface with accountable internal and external entities		
6	Criteria for evaluating and recommending FM technology solutions		
7	Assess how changes to FM technologies will impact current infrastructure, processes and building systems		
8	FM technology installation, acquisition, operation, maintenance, upgrade and disposition of FM components		
9	Develop, recommend and communicate policies and procedures		
10	Develop and implement training programs for facilities staff and ancillary resources		
11	Monitor performance of FM technologies and make appropriate recommendations when systems changes are needed		
	<b>#2 Plan, Direct, Manage and/or Support the Organization's Technological Infrastructure</b>		
12	Identify and interface with accountable internal and external entities		

<b>13</b>	Contribute an FM perspective to the identification of evaluation criteria of the organization's technology infrastructure		
<b>14</b>	Assess how changes being made by other entities to infrastructure technologies will impact in place infrastructure, processes and building systems		
<b>15</b>	Direct, manage and support the acquisition, operation, maintenance and disposition of components supporting infrastructure technologies		
<b>16</b>	Manage or participate in the development of policies, practices and procedures		

### 5.10 Integrative and Problem Solving Skills (Capstone Course)

There must be at least one major integrative, problem-solving exercise in which students apply the key competencies learned in the specific knowledge areas, one through nine, to a problem that spans several phases of planning and managing facilities. This problem must require real information gathering and measurement. The project will culminate in a professional quality report and presentation to an audience.

<b>ID</b>	<b>Area of Knowledge</b>	<b>Course ID</b>	<b>Additional Information</b>
	<b>Context</b>		
<b>1</b>	This is intended for students who have successfully completed most of the courses required for graduation with a degree in facility management		
	<b>Capstone Course Requirements</b>		
<b>2</b>	Identify a problem/issue/area of investigation		
<b>3</b>	Determine resources needed to address the problem/issue/investigation		
<b>4</b>	Collect and verify required data		
<b>5</b>	Analyze data and options/solutions		
<b>5a</b>	Management		
<b>5b</b>	Technical		
<b>5c</b>	Financial		
<b>5d</b>	Health and safety		
<b>5e</b>	Customer service		
<b>5f</b>	Sustainability		
<b>6</b>	Prepare best case solution		
<b>7</b>	Prepare reports, written and electronic		
<b>8</b>	Project presentation and defense		

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