Human Factors and Ergonomics Society

Accreditation Self-Study
Report Guide

Updated March 29, 2023

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Overview

The requirements/guidelines that follow set forth the information required from graduate programs for application for accreditation by the Human Factors and Ergonomics Society. This document deliberately avoids defining the set of competencies in terms of a core set of courses required for accreditation because this approach would take too narrow a view of how knowledge and skills are achieved. For example, the written communication skills discussed might be acquired by building in proper feedback to such written course work as term papers, theses, and papers for publication. Further, the degree of emphasis on particular areas may vary from program to program. Thus one program may provide familiarity with concepts and techniques of analysis and design methodologies as separate pieces in multiple courses, whereas another program may emphasize this area in a specialized, two-course sequence. It is incumbent on each program for which accreditation is sought to show a sufficient degree of education and training in each of the areas identified.

It is recognized that the core requirements for the master's degree set –with only minimal allowance for satisfying other requirements relating to the organization housing the program (e.g., engineering or psychology) – will probably exceed 30 semester hours. This seems fully justified for the interdisciplinary field of human factors. The intent of the approach described has been to allow flexibility and diversity; however, it is not intended to imply that this flexibility should permit the accreditation of a program that is weak or minimal in all or most of the six core areas.

With few exceptions, human factors programs in the United States are found as an emphasis in some traditional academic departments. This, in addition to the multidisciplinary applications and origins of human factors, has resulted in a diversity of educational and professional backgrounds for human factors professionals. In many cases the HF/E faculty member's discipline will be determined by the discipline of the department offering the program. This diversity has played and probably will continue to play an important role in the dynamic growth and widening application of human factors.

Human Factors and Ergonomics Society

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Requirements

Accreditation shall be awarded to graduate programs of human factors and ergonomics rather than to specific degrees within the university. Therefore, a human factors and ergonomics program may be composed of a cadre of courses offered from several departments and colleges within the university. Degree requirements of the applying or university may differ from the requirements/guidelines outlined in the document. However, the criteria in the sections on curriculum (Section A), practical experience (Section B), and staffing (Section C) outlined in this Human Factors and Ergonomics Society Self-Study Report Guide must be satisfied for accreditation.

Prerequisites

Accreditation shall be possible only after at least six students have graduated from the program. Advance accreditation of programs shall not be granted.

Accreditation Decisions

Accreditation of a program shall be for a basic unit of six years. The decision following an accreditation review may be one of the following:

a. Full six-year accreditation.
b. Accreditation for a period of three years, at which time evidence of progress toward satisfying the requirements for full-term accreditation is required.
c. Immediate "show cause" notice that accreditation will be denied or revoked unless specified steps are taken.
d. Notification of denial or revocation of accreditation. This decision may be appealed to the Executive Council.

The information required for accreditation is requested in the form of a self-report instrument. Sections A, B, and C identify the criteria to be used by the Accreditation Review Panel in evaluating the qualifications of a program for approval. The contents of this report should largely follow the engineering accreditation (ABET) model; differences take into account the multidisciplinary nature of human factors and the flexible nature of the core-plus-specialization curriculum requirements described in Section A. Documentation is required whenever it is likely to be available (e.g., examinations, transcripts, sample lab reports) and may also be provided as a URL. In preparing the self-report, care should be taken to provide all the information requested in this document in order to satisfy the criteria for accreditation set forth in Sections A-C. A site visit will be necessary only in cases that cannot be resolved by the self-report

If you believe you have documentation not specifically requested which demonstrates the quality of your program, please attach it with an explanation of its relevance.

Procedural Issues

Applicants should send electronic copies of all materials to the HFES Central Office for distribution to the current Chair of the Accreditation Review Committee in an electronic form. Contact the Central Office Executive Director to determine the appropriate medium. Any paper-only documents should be scanned into PDF form for electronic submission. Electronic documents should be typed in Microsoft Word to enable insertions by reviewers. Sections on the table of contents must correspond to the sections specified in the self-study report guide because they allow:

- you to easily modify your package, and
- reviewers to easily insert updates and clarifications, which you may provide.

Arrange the course material by Departments (Psychology, Industrial Engineering, etc) and within Departments arrange the material by increasing course number. This procedure will also facilitate your preparation of material for subsequent reviews at the three or six year review point.

Applicants should mail the nonrefundable application fee of $200 along with any materials that are not amenable to electronic submission to the Human Factors and Ergonomics Society at 2001 K St., NW Suite 300, Washington, DC 20006.

Please attach a copy of the payment check to the original Self-Study Report Guide or a credit card number with authorizing signature.

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Application Format

1. Cover Page

The cover page should include at least the following information:

- University name
- Name of Program for which accreditation is being sought
- Major Academic unit (e.g., college, school, and department)
- Dean/director/chair of this major unit
- Name of director of the human factors program
- Address for correspondence
- Submission Date
- Type of Submission: Original or Renewal

2. Description of the Program Environment

2.1 Describe the university in general terms (e.g., size, Colleges/Schools location). Provide material, not a series of links. However specific URLs can be provided so the reviewers can access the most current information.

If a program resides at an institution that is accredited by an educational accrediting body, a letter from the department chair or dean stating as such can be used in place of this description.

Relevant portions of text from a program's recent accreditation application can be used as the core document for the accreditation application with the stipulations that (a) supplemental materials necessary to fully answer all of the components requested in the Self-Study Guide are provided, (b) there is sufficient information about how each accreditation requirement is met, (c) the document provides a concise overview of the program

2.2 Describe the major unit(s) within which your human factors program resides (e.g., school and department). In addition, indicate all degrees and programs offered by this unit.

2.3 Describe resources available to the human factors program from the local area (e.g., libraries, other universities and human factors employers) and how these are utilized.

2.4 Specify any university/college overall entrance requirements that are in addition to your human factors program entrance requirements.

3. Human Factors Specifics

3.1 Provide a general description of your human factors program, including (brochures are welcome):

3.1.1 Degrees offered
3.1.2 Number of graduates in the graduate program over the past six years
3.1.3 Focus of the program

3.2 Specify the admission requirements for each of your human factors programs.

3.3 Program History:

3.3.1 New applications: For the year preceding the self-report year, provide the number of applicants (from within and outside of the university), number of students accepted for admission in the human factors program, and number enrolled (i.e. started classes). Indicate whether these are full- or part- time students. Also indicate the number admitted in "special" or "non degree" categories. If these data are available for more than the previous year please provide them.

3.3.2 Renewing applicants: For the years since your last application provide the number of applicants (from within and outside of the university), number of students accepted for admission in the human factors program, and number enrolled (i.e. started classes). Indicate whether these are full-or part-time students. Also indicate the number admitted in "special" or "non degree" categories.

3.4 Include actual course of studies for students in each of the degree programs for which accreditation is sought.

3.5 List and describe the specific requirements for graduation for each degree. Include courses, exams, projects, etc. Indicate any sequence or time limitations required in fulfilling these requirements.

3.6 If faculty outside the program advises students, provide an elaboration of this arrangement.

3.7 For each program for which accreditation is sought, complete a separate copy of Table 1 in these guidelines. Lines may be added to this table if necessary, but please retain the format shown

3.8 For each course offered by your unit (or other participating units), and which is considered to have significant human factors content, provide the following information:

3.8.1 Title
3.8.2 Credit hours
3.8.3 Course objectives
3.8.4 Course description
3.8.5 How often the course is offered
3.8.6 Most recent syllabus including course outline and texts

It is important that the course outline for each human factors course be sufficiently detailed to permit assessment of breadth and depth of coverage of topics. Adequate description is particularly critical for those courses listed in Table 1 as contributing to meeting core curriculum requirements. Include laboratory work; indicate the number of laboratory hours required during a semester/quarter.

3.9 Show in Table 1 how each course contributes to fulfilling the curriculum requirements stated in Section A: Curriculum Requirements.

3.10 Identify any listed course that is a joint graduate/undergraduate course (i.e., meets in the same room at the same time regardless of numbering techniques). For each such course, state the measures taken to ensure a "graduate experience" for the graduate students.

3.11 Describe specializations available in your program and the title, credit hours, and course descriptions for each specialization (follow the format in item 2.8 above).

3.12 Specify individual study requirements (e.g., thesis, dissertation, comprehensive examination and internships). Indicate whether graduate students have a non-thesis option. In addition, indicate how many theses, dissertations, etc. have been published or presented at professional meetings in the last five years.

3.13 Provide any materials that reflect the quality of your program and/or its graduates (e.g., dissertations, theses, research reports, university/grants/contract funding and videotapes of promotional materials).

4. Facilities

4.1 Describe any special facilities and services that support the human factors program, including:

4.1.1 Research facilities

4.1.2 Instructional facilities
4.1.3 Computational facilities
4.1.4 Simulation facilities
4.1.5 Library facilities (include a listing of journals regularly acquired that are relevant to human factors, include electronic journals from which students can download articles)
4.1.6 Student financial support (e.g., fellowships and internships)

This may be accomplished or supplemented by brochures, photos, etc. if suitable.

5. Faculty

5.1 Provide detailed information on faculty qualifications and experience. This section should specify how your program meets the staffing requirements discussed in Section B: Staffing Guidelines, including:

5.1.1 List all full- and part-time faculty and current curriculum vitae for each. The vitae should include professional affiliation, refereed and manuscript publications, research, consulting and teaching experience.
5.1.2 Indicate who are considered "core" faculty in the program and give details of their roles and responsibilities. Specify the percentage of time devoted to teaching as opposed to research as opposed to outside consulting.
5.1.3 List the courses taught by all full- and part-time faculty for the last academic cycle preceding the self-study year.
5.1.4 Describe how teaching evaluation is handled in your unit.
5.1.5 Describe the administrative and academic responsibilities for the human factors program.
5.1.6 Specify the teaching load in your unit.
5.1.7 Specify the promotion and tenure policies of your unit.

5.2 List and indicate the duties of nonacademic staff who support the program (e.g., computer support personnel, laboratory technicians).

6. Other Participating Departments

6.1 List and describe other departments that participate in your program.

6.2 Indicate the nature of their participation and how it contributes to your program. Also indicate how many students are involved.

7. Practical Experience

7.1 For doctoral programs or master's programs, which require practical experience, indicate how your program satisfies the requirements outlined in Section C: Practical Experience Requirements.

7.2 List any university units either directly or indirectly affiliated with your program which provide collaborative professionals, or student work opportunities, or which contribute in other ways to the development of human factors specialists.

8. Plans

8.1 Describe any plans that are under way to expand laboratory facilities.

8.2 Describe any plans that are under way to expand the faculty.

9. Summary

9.1 Describe the strengths of your program, including the best indicators of its quality.

9.2 Describe the areas of your program that need strengthening, if any. Indicate the resources (faculty, laboratories, etc.) that would provide this strength.

Section A
Curriculum Requirements

This section contains the criteria used in evaluating the curriculum of programs for which accreditation is sought. The results of several surveys and focus groups were reviewed during the formulation of these criteria. Some of the general conclusions from the results of the surveys are summarized below.

- Graduate education in this field takes place in the organizational context of a variety of academic disciplines. The majority, however, are located in either departments of industrial engineering or in departments of psychology, with a somewhat larger number in the former.

- Human factors specialists are employed in a variety of settings, including different types of businesses and industries, government organizations, and academic institutions.

- Human factors specialists engage or participate in a broad range of activities, including designing equipment, environments, and jobs; analyzing systems (task analysis, mission analysis, etc.); research; teaching; writing proposals, reports, and other technical documents; selling ideas, plans and people; managing human factors projects; and training operators.

- Graduates of human factors programs should have a broad range of knowledge, skills, and experience.

- There are a considerable variety of current graduate programs regarding the breadth and depth with which topics relevant to human factors are covered.

One thing is very clear from the foregoing observations: the field is broad in virtually all respects. It is to be expected that graduate programs will vary a great deal in their specifics. This line of reasoning leads to considering the accreditation in terms of what should be basic or common to all programs: in academic terms, what level of preparation across core areas is sufficient to provide a general background in HF/E, and what are the appropriate specializations that may be present in varying degrees of breadth and depth among programs.

A.1 - CORE
HUMAN FACTORS AND ERGONOMICS
An accredited program needs to require a three-credit course (or 3 credit equivalent experience) that provides a survey of the field. In particular such a course needs to cover at least seven of the areas listed under Core Area #1: An Understanding of Human Capabilities and Limitations.

Human Factors is concerned with the application of what we know about people, their abilities, characteristics, and limitations to the design of equipment they use, environments in which they function, and jobs they perform. Therefore, the core of education in this field must include instruction on the following three core areas:

CORE AREAS
To demonstrate competency in each core area students are required to take graduate classes or be exposed to equivalent experiences in one or more of the following areas listed under each core that together are equivalent to 12 graduate credit hours or four classes with a minimum of 3 credit hours in each core area.

1. An Understanding of Human Capabilities and Limitations
2. Skills in Carrying out Evidence-Based HF/E Methods
3. Knowledge of Application Domains in the Field of HF/E

The objective of the core is to be sufficient, not exhaustive.
Area coverage is defined in terms of course credit units <u>required</u> for that degree (i.e., typical semester course = 3 credits)

- If a 3-credit course is <u>required</u> of students in that area (e.g., biomechanics) then that checked items gets 3 credit points
- If 1/3 of a 3-credit <u>required</u> course covers the topic then that item gets 1 credit point
- On-line course(s) = points equivalent to their credit hours
- Reading and discussing relevant articles in seminars = points equivalent to proportion of 3-credit seminar that covers those materials
- Independent readings under the direction of a faculty member = points equivalent to proportion of 3-credit course that covers those materials
- Research, internships, and/or project-oriented activities. Translate hours into credit points (e.g., 10 hours per week for a semester = 3 credits)

a) Total credit points for each check box
b) Total points within each of the three competency areas
c) At least three credit points in each of three competency areas and a total of at least 12 credits in all three areas are required for academic content element of accreditation
d) The 12 core credits are in addition to the three for the Human Factors and Ergonomics survey class.

CORE AREA 1. An Understanding of Human Capabilities and Limitations

- ❑ Information processing
- ❑ Biomechanics
- ❑ Perception and action
- ❑ Ecological psychology
- ❑ Anthropometry
- ❑ Kinesiology
- ❑ Neuropsychology
- ❑ Cognitive science
- ❑ Communication
- ❑ Sociology
- ❑ Anthropology
- ❑ Physiological Psychology
- ❑ Organizational Psychology
- ❑ Naturalistic decision making
- ❑ Human performance
- ❑ Social Psychology
- ❑ Situated cognition
- ❑ Macroergonomics
- ❑ Joint action
- ❑ Physiology
- ❑ Industrial/Workplace Ergonomics
- ❑ Human Systems Integration
- ❑ Human Error
- ❑ Environmental Effects
- ❑ **Other** (to be approved by accreditation committee)

CORE AREA 2. Skills in Carrying Out Evidence-Based HF/E Methods

- ❑ Cognitive task analysis
- ❑ Task analysis
- ❑ Knowledge elicitation/acquisition
- ❑ Experimental design
- ❑ Industrial design
- ❑ Computational modeling
- ❑ Dynamical Systems modeling
- ❑ Mathematical modeling
- ❑ Experimental Statistics
- ❑ Prototyping
- ❑ Simulation
- ❑ Usability Testing
- ❑ Neuroergonomics
- ❑ Discrete event simulation
- ❑ Reliability
- ❑ Control Theory
- **Other** (to be approved by accreditation committee)

CORE AREA 3. Knowledge of Application Domains in the Field of HF/E

- ❑ Environmental design
- ❑ Cognitive Engineering
- ❑ Expert Systems
- ❑ Human-Computer Interaction
- ❑ Safety
- ❑ Inspection
- ❑ Human Systems Integration
- ❑ Displays
- ❑ Controls
- ❑ Transportation
- ❑ Aviation
- ❑ Training and assessment
- ❑ Augmented cognition
- ❑ Medicine
- ❑ Energy
- ❑ Disaster Response
- ❑ Industrial Ergonomics
- ❑ System/Product design
- ❑ Workstation Design
- ❑ Tools
- ❑ **Other** (to be approved by accreditation committee)

Section B
Professional Skills

Practical Experience Requirements

Our discipline is an applied field. Although it encompasses research activities in its quest for problem solutions and in turn places a premium on research competence, nevertheless it is still primarily concerned with solving problems. In this regard practitioners should be prepared to identify and define problems and to develop and carry out approaches to solve them. This type of experience must develop expertise in the application of human factors methodology to real world operational problems. It must integrate (a) problem definition, e.g. through task analysis, error analysis, operational analysis, (b) the design of experiments or the design of equipment, (c) the statistical analysis and interpretation of such data; and (d) the presentation of the results to operational personnel. Therefore, appropriate supervision of relevant practical experiences is required. Suggestions on how to meet this requirement are:

a. Structured internships in the private or public sector

b. Formal or informal cooperative assignments in the private or public sector.

c. Work on projects which take place within the university environment but which have an external “user” who has a need for a solution to a problem involving human factors

d. Practicum assignments in extra-university organizations

e. Consultations with industry principals, which involves the application of human factors principles

Communication Skills Requirement
While oral and written communication skills should have been developed at the undergraduate level, supplemental experience may be required at the graduate level. Students must be provided with the opportunity to sharpen their speaking and writing skills at the graduate level.

Teamwork Experience Requirement
The program should offer an exposure to a multidisciplinary team experience as part of their academic experience. Following are suggestions on how this requirement can be met**:**

a. Teach team building skills and abilities
b. Collaborative class assignments and projects
c. Feedback from fellow students on class presentations
d. Organize students into workgroups
e. Assess collaboration and cooperation

Section C
Faculty/Staff Guidelines
The selection, development, and retention of competent faculty, qualified in their respective fields, in large part determine the quality of an academic program. The number of faculty committed to human factors, their training and professional experience, their involvement in teaching, advisement, and research in the field are all elements that determine whether a department should consider that it offers a viable option or degree in human factors. The interdisciplinary and emergent character of human factors makes it inadvisable, and virtually impossible, to develop highly specific requirements for faculty in this field. Nevertheless, the following four general guidelines have been established and specifically related to the field of human factors.
1. Adequate Resources
2. Diverse Qualifications
3. Supporting Faculty
4. Balanced Responsibilities
5. Affiliation with the HF/E Profession

1. Adequate Resource Guideline:
Faculty resources addresses the number, diversity, and status of faculty assigned to the teaching, counseling, and curriculum aspects associated with the human factors program. The number of faculty dedicated to the human factors program should adequately reflect its size, the breadth of course offerings, degrees offered, teaching loads, administrative requirements, and qualifications of the faculty. This emphasis recognizes that faculty will also be involved in research, administration, consulting, and other professional activities. However, it is essential that these activities do not substitute for the primary responsibilities in the academic program and the important daily contact with students.

Rank and tenure of the faculty servicing the human factors program should likewise reflect the program's size, breadth, and importance in the department.

2. Diverse Qualifications Guideline:
Qualifications of the entire human factors faculty should be considered when assessing the adequacy of a faculty, rather than a narrow focus on specific professors. Within this framework, qualifications should be evaluated in terms of graduate degrees, identification with the field of human factors, relevant professional experience, and program goals. The academic training and experience of the faculty should be appropriate to the diversity and level(s) of degrees offered. It is a reasonable expectation that a majority of the faculty will hold doctoral degrees; however, significant experience may be substituted for academic achievement. The core faculty should identify with the field of human factors by some combination of education, experience, scholarship, and professional recognition. It is important that they be knowledgeable of issues surrounding the policies and practices of human factors and model a commitment to the professional ethics of the field.

3. Supporting Faculty Guideline:
Adjunct and part-time faculty members are important in most academic programs. They provide program breadth and are valuable links to industrial and related academic professional activities. Their involvement must have continuity and be well integrated into course offerings. A widely accepted guideline is that at least 50% of the course offerings be taught by full-time faculty members. The program may be augmented by the contributions of faculty members whose primarily academic identity is clearly outside the human factors field.

4. Balanced Responsibility Guideline
Full-time faculty workloads should reflect the full range of activities expected of academic faculty (i.e., teaching, research, publications, committee service, and professional society responsibilities). Teaching loads should be consistent with other campus units and allow reasonable time for nonteaching activities. Faculty should remain abreast of new knowledge and contribute to the development and application of human factors through professional leaves and sabbaticals.

5. Affiliation with the HF/E Profession

Faculty associated with the HF/E degree program should demonstrate an affiliation with the profession of HF/E. Affiliation can be demonstrated in multiple ways including degrees from an accredited HF/E program, membership and leadership positions in HFES, association with local or student chapters of HFES, participation in HF/E workshops and conferences, teaching HF/E courses, and publication in recognized HF/E journals.

Sample Table
Required Program Components

Core Requirement Areas	Master's Level Degree Required Course Number(s)	Doctoral-Level Degree Required Course Number(s)
Human Factors and Ergonomics Course		
	_____	_____
	_____	_____
Core Area 1: An Understanding of Human Capabilities and Limitations		
	_____	_____
	_____	_____
	_____	_____
	Describe non-course <u>requirements</u> contributing to compliance	
Core Area 2: Skills in Carrying Out Evidence-Based HF/E Methods	_____	_____
	_____	_____
	_____	_____
	Describe non-course requirements contributing to compliance	
Core Area 3: Knowledge of Application Domains in the Field of HF/E		
	_____	_____
	_____	_____
	Describe non-course <u>requirements</u> contributing to compliance	
	_____	_____

Core Requirement Area	Master's-Level Degree Require Course Number (s)	Doctoral-Level Degree Required Course Number (s)

Practical Experience	**Describe specific requirements relevant to practical experience.**
Communication Skills	**Describe specific requirements, including coursework, ensuring the ability to communicate verbally and in writing**
Teamwork Skills	**Describe specific requirements, including coursework, relevant to teamwork**

Core Requirement Areas	Master's-Level Degree Required Course Number (s)	Doctoral-Level Degree Required Course Number (s)
Research Experience	**Is master's thesis required?** **If not, how is research requirement met?**	**Is dissertation required?**
Specialization	**No requirement** **(but describe if met)**	**How is requirement met?**
Practical Experience	**No requirement** **(but describe if met)**	**How is requirement met?**

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Appendix

********** **REVIEWER FORM** **********

Please complete the following information.

1. Reviewer Name_ Date

2. Applicant School

University Name:
Name of Program:
Major Academic Unit:
College :

3. Is this a new accreditation application or a renewal of accreditation application?

4. Have at least six students graduated from the program? Yes No

5. After evaluating each section, indicate recommended disposition from the options below: _____

"Accreditation of a program shall be for a basic unit of six years. The decision following an accreditation review may be one of the following:

a. Full six-year accreditation.
b. Accreditation for a period of three years, at which time evidence of progress toward satisfying the requirements for full-term accreditation is required.
c. Immediate "show cause" notice that accreditation will be denied or revoked unless specified steps are taken.
d. Notification of denial or revocation of accreditation. This decision may be appealed to the Executive Council."

RATING SCALE TO EVALUATE EACH OF SECTION OF THE *GUIDE*:

For each section that is evaluated, please use the following scale to rate the degree to which the criteria shown in self-study guide are met:

0: does not meet criteria at all
1: does not meet criteria; has major deficiencies
2: does not meet criteria; has minor deficiencies
3: meets criteria adequately
4: exceeds criteria
5: far exceeds criteria

If the rating is below 3, please describe the changes needed to meet the criteria adequately.

SECTION A. CURRICULUM REQUIREMENTS

A1. CORE

HUMAN FACTORS AND ERGONOMICS

An accredited program needs to require a three-credit course (or 3 credit equivalent experience) that provides a survey of the field. In particular such a course needs to cover at least seven of the areas listed under Core Area #1: An Understanding of Human Capabilities and Limitations. The 12 core credits (described below) are in addition to the three for the Human Factors and Ergonomics survey class.

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

CORE AREAS

To demonstrate competency in each core area students are required to take graduate classes or be exposed to equivalent experiences in one or more of the following areas listed under each core that together are equivalent to 12 graduate credit hours or four classes with a minimum of 3 credit hours in each core area.

1. An Understanding of Human Capabilities and Limitations
2. Skills in Carrying out Evidence-Based HF/E Methods
3. Knowledge of Application Domains in the Field of HF/E

The objective of the core is to be sufficient, not exhaustive.

Area coverage is defined in terms of course credit units required for that degree (i.e., typical semester course = 3 credits)

1. If a 3-credit course is <u>required</u> of students in that area (e.g., biomechanics) then that checked items gets 3 credit points

2. If 1/3 of a 3-credit <u>required</u> course covers the topic then that item gets 1 credit point

3. On-line course(s) = points equivalent to their credit hours

4. Reading and discussing relevant articles in seminars = points equivalent to proportion of 3-credit seminar that covers those materials

5. Independent readings under the direction of a faculty member = points equivalent to proportion of 3-credit course that covers those materials

6. Research, internships, and/or project-oriented activities. Translate hours into credit points (e.g., 10 hours per week for a semester = 3 credits)

    a) Total credit points for each check box

    b) Total points within each of the three competency areas

c) At least three credit points in each of three competency areas and a total of at least 12 credits in all three areas are required for academic content element of accreditation

d) The 12 core credits are in addition to the three for the Human Factors and Ergonomics survey class

CORE AREA 1. AN UNDERSTANDING OF HUMAN CAPABILITIES AND LIMITATIONS

□ Information processing
□ Biomechanics
□ Perception and action
□ Ecological psychology
□ Anthropometry
□ Kinesiology
□ Neuropsychology
□ Cognitive science
□ Communication
□ Sociology
□ Anthropology
□ Physiological Psychology
□ Organizational Psychology
□ Naturalistic decision making
□ Human performance
□ Social Psychology
□ Situated cognition
□ Macroergonomics
□ Joint action
□ Physiology
□ Industrial/Workplace Ergonomics
□ Human Systems Integration
□ Human Error
□ Environmental Effects
□ Other (to be approved by accreditation committee)

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

CORE AREA 2. SKILLS IN CARRYING OUT EVIDENCE-BASED HF/E METHODS

- □ Cognitive task analysis
- □ Task analysis
- □ Knowledge elicitation/acquisition
- □ Experimental design
- □ Industrial design
- □ Computational modeling
- □ Dynamical Systems modeling
- □ Mathematical modeling
- □ Experimental Statistics
- □ Prototyping
- □ Simulation
- □ Usability Testing
- □ Neuroergonomics
- □ Discrete event simulation
- □ Reliability
- □ Control Theory
- □ Other (to be approved by accreditation committee)

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

CORE AREA 3. KNOWLEDGE OF APPLICATION DOMAINS IN THE FIELD OF HF/E

- □ Environmental design
- □ Cognitive Engineering
- □ Expert Systems
- □ Human-Computer Interaction
- □ Safety
- □ Inspection
- □ Human Systems Integration
- □ Displays
- □ Controls
- □ Transportation
- □ Aviation
- □ Training and assessment
- □ Augmented cognition
- □ Medicine
- □ Energy
- □ Disaster Response
- □ Industrial Ergonomics
- □ System/Product design
- □ Workstation Design
- □ Tools
- □ Other (to be approved by accreditation committee)

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

SECTION B. PROFESSIONAL SKILLS

PRACTICAL EXPERIENCE REQUIREMENTS

Practitioners should be prepared to identify and define problems and to develop and carry out approaches to solve them. This type of experience must develop expertise in the application of human factors methodology to real world operational problems. It must integrate (a) problem definition, e.g. through task analysis, error analysis, operational analysis, (b) the design of experiments or the design of equipment, (c) the statistical analysis and interpretation of such data; and (d) the presentation of the results to operational personnel. Therefore, appropriate supervision of relevant practical experiences is required.

Suggestions on how to meet this requirement are:

a. Structured internships in the private or public sector
b. Formal or informal cooperative assignments in the private or public sector.
c. Work on projects which take place within the university environment but which have an external "user" who has a need for a solution to a problem involving human factors
d. Practicum assignments in extra-university organizations
e. Consultations with industry principals, which involves the application of human factors principles

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:
Weaknesses:

COMMUNICATION SKILLS REQUIREMENT

While oral and written communication skills should have been developed at the undergraduate level, supplemental experience may be required at the graduate level. Students must be provided with the opportunity to sharpen their speaking and writing skills at the graduate level.

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

TEAMWORK EXPERIENCE REQUIREMENT

The program should offer an exposure to a multidisciplinary team experience as part of their academic experience. Following are suggestions on how this requirement can be met**:**

a. Teach team building skills and abilities
b. Collaborative class assignments and projects
c. Feedback from fellow students on class presentations
d. Organize students into workgroups
e**.** Assess collaboration and cooperation

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

SECTION C. FACULTY/STAFF GUIDELINES

The selection, development, and retention of competent faculty, qualified in their respective fields, in large part determine the quality of an academic program. The number of faculty committed to human factors, their training and professional experience, their involvement in teaching, advisement, and research in the field are all elements that determine whether a department should consider that it offers a viable option or degree in human factors. The interdisciplinary and emergent character of human factors makes it inadvisable, and virtually impossible, to develop highly specific requirements for faculty in this field. Nevertheless, the following four general guidelines have been established and specifically related to the field of human factors.

1. Adequate Resources
2. Diverse Qualifications
3. Supporting Faculty
4. Balanced Responsibilities
5. Affiliation with the HF/E Profession

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

OTHER: FACILITIES

Rate the degree to which the criteria in the *Guide* are met (using rating scale provided): _____
(If the rating is below 3, please describe the changes needed to meet the criteria adequately):

Optional Comments:

Strengths:

Weaknesses:

OPTIONAL COMMENTS: