

**NATIONAL CENTERS OF ACADEMIC EXCELLENCE
IN INFORMATION ASSURANCE EDUCATION (CAE/IAE) PROGRAM
CRITERIA FOR MEASUREMENT - October 2010**

The National Centers of Academic Excellence in Information Assurance Education Program is open to current nationally or regionally accredited 4-year colleges and graduate-level universities. The mission of a nationally accredited institution program must be in the Information Assurance (IA), Cybersecurity arena or similar. Applications must be submitted electronically via the on-line application process. Applications are assessed against criteria, listed below, which are intended to measure the depth and maturity of programs of instruction in IA at the graduate and undergraduate levels. Applicants must clearly demonstrate how they meet each of the criteria. Minimum requirements for each of the criteria must be met in order to obtain designation. Successful applicants are designated as a National Center of Academic Excellence in Information Assurance Education (CAE/IAE) for a period of 5 academic years, after which they must successfully reapply in order to retain the designation. The criteria is reviewed annually and strengthened as appropriate to keep pace with the evolving nature of IA. (*Designation as a National Center of Academic Excellence in IA Education does not carry a commitment of funding from the National Security Agency or from the Department of Homeland Security.*)

Prerequisites:

- a. Prior to submitting an application for the National Centers of Academic Excellence in IA Education Program, IA courseware must be certified under the IA Courseware Evaluation Program (<http://www.nsa.gov/ia/academia/iace.cfm?MenuID=10.1.1.1>) as meeting the Committee on National Security Systems (CNSS) Training Standards (<http://www.cnss.gov>) and the certification must be current. Specifically, certification for CNSS Training Standard 4011 is required, and certification of at least one additional CNSS Training Standard is required.*
- b. The institution must hold current regional or national accreditation.*

1. *Outreach/Collaboration:* Extending IA beyond the normal boundaries of the University and bringing current IA practitioners into the IA Center. Provide evidence of partnership(s) in IA education with minority colleges and universities*, or K-12 schools, or 2-year community colleges, or technical schools. Partnership(s) may include: Shared curriculum and resources (IA teaching material provided); shared faculty (faculty on curriculum committee or teaching); and reciprocity of credits. (Example of evidence: memorandum of agreement between both parties). **Agreement(s) should be specific to IA/cybersecurity programs. Evidence should be in the form of an articulation agreement, Memorandum of Agreement, letters of endorsement, indicators of specific IA/cyber courses in course catalogs, proof of State regulations mandating reciprocation of IA courses, etc. between the schools.**

Overall Point Value: 15 minimum/25 maximum

(*The U. S. Department of Education references (<http://www2.ed.gov/about/offices/list/ocr/edlite-minorityinst-list-tab.html>) and United States code – 20 U.S.C. 1067k refer to the term "minority institution" as an institution of higher education whose enrollment of a single minority or a combination of minorities include: American Indian, Alaskan Native, Black (not of Hispanic origin), Hispanic (including persons of Mexican, Puerto Rican, Cuban, and Central or South American origin), or Pacific Islander.

- a. Shared curriculum (e.g., IA teaching materials provided to minority colleges/universities, or 2-year community colleges, or technical schools, or K-12 schools) or shared faculty (e.g., Faculty on IA curriculum development committee and/or teaching IA at minority colleges and universities, or 2-year community colleges, or technical schools, or K-12 schools.)
Point Value: Up to 5 points/3 required
- b. Reciprocity of credits (e.g., Accepting academic credit in IA courses from minority colleges and universities, or 2-year community colleges, or technical schools.). Evidence in the form of written agreements must demonstrate that IA-related courses from the above types of schools are accepted for credit at the applying college/university.
Point Value: Up to 5 points/3 required
- c. Sponsorship/participation in Cyber Defense/Forensics Exercises within 3 years of submission. Sponsorship of state, regional, or national IA curriculum workshops, colloquia, etc. (e.g., sponsorship of workshops for K-12, community colleges, technical schools, state homeland security, industry, etc.).
Point Value: Up to 5 points
- d. CAE Collaboration. Partner in research/shared classes or shared events with other institutions. Institutions are encouraged to partner with other CAEs on cyber or IA research/instruction.
Point Value: Up to 5 points
- e. Community Outreach. Sponsor community events such as cybersecurity education for local schools, adult education centers, senior centers, etc. (e.g., schools in a target region are encouraged to participate in cybersecurity education events, like community computer diagnostic “check-ups” and IA awareness days.)
Point Value: Up to 5 points

2. *Center for IA Education (for the purpose of this document, the word “center” is used in a general sense. The university must have a formal organization where*

*faculty and students can share their research, collaborate, and interact.) **The center and the website must be operational, dynamic and current.** The University has a declared “center” for IA education or a center for IA research from which IA curriculum is emerging. The center may be school or university-based. (e.g., The Computer Science Department has an officially designated “Center for IA Studies” with a clear link to and sponsorship by the College of Engineering Sciences, with a charter signed at least at the College of Engineering level.) Provide documentation of the designation of the Center (e.g. the charter), signed by the Dean or higher, and the mission statement.*

Overall Point Value: 20 minimum/35 maximum

- a. Show formal documentation of the designation of the IA/Cybersecurity “Center”.

Point Value: 5 minimum required

- b. Provide the hyperlink to the “Center”.

Point Value: 5 minimum required

- c. Demonstrate the “Center” web site is operational, dynamic and current: contains up-to-date links to key IA resources such as other academic institutions, government sites, conferences, workshops, IA news, center POCs, IA courses, etc.

Point Value: 5 required/15 maximum

- d. Provide evidence that subscription-based IA journals are available for student and faculty use on the website. (e.g., Safari, Merlot, etc.) Demonstrate that hyperlinks to key IA web sites are provided in course syllabus and/or professors’ web page or provided to students during class instruction.

Point Value: Up to 5 pts

- e. Demonstrate that physical and/or virtual IA labs and equipment are available and used for hands-on learning (provide examples of student lab projects/exercises/case studies – syllabus, links to assignments, etc.).

Point Value: Up to 5 points

3. *IA academic program is robust and active:* Academic program, within a nationally or regionally accredited 4-year college or graduate-level university, has an area of study or focus area or certificate program in IA. Identify the courses required for each area; provide syllabus, enrollment data for current academic year (not projected) and actual graduation data (not projected) for the past two academic years. Courses must be verifiable through online course catalog and syllabus. Provide link to catalog and syllabus.

Overall Point Value: 10 minimum/ 30 maximum

- a. Focus on IA/Cybersecurity at the Bachelors level.
 1. Provide link to course catalog and syllabus for IA/Cybersecurity courses.
Required for Bachelors
 2. Enrolled (current academic year)
Point Value: Up to 5 pts if up and running
 3. Graduated (past 2 academic years)
Point Value: Up to 5 pts

- b. Focus on IA/Cybersecurity at the Masters level
 1. Provide link to course catalog and syllabus for IA/Cybersecurity courses.
Required for Masters
 2. Enrolled (current academic year)
Point Value: Up to 5 pts if up and running
 3. Graduated (past 2 academic years)
Point Value: Up to 5 pts

- c. Focus on IA/Cybersecurity at the Ph.D./Doctorate level.
 1. Provide link to course catalog and syllabus for IA/Cybersecurity courses.
Required for Ph.D/Doctorate
 2. Enrolled/declared (current academic year)
Point Value: Up to 5 pts if up and running
 3. Graduated (past 2 academic years)
Point Value: Up to 5 pts

Note: If a university presents evidence that a program has existed for 2 or more years, but the university is just now formalizing the program and plans to issue credit to past students retroactively, points may be allocated.

4. *IA as a multidisciplinary science:* The academic program demonstrates that IA is not treated as a separate discipline, but as a multidisciplinary science with the body of IA knowledge incorporated into various disciplines.
Overall Point Value: 10 minimum/20 maximum
 - a. Evidence that IA is taught as modules in existing non-IA courses and that non-technical/non-IA students are being introduced to IA (e.g., IA topics are covered in courses for managers/leaders/non-technical students or, the business school provides instruction on security countermeasures for IT systems to help assure continuity of operations.). **Link to syllabus required**
Point Value: 2 pts per course/10 maximum

- b. Non-IA courses encourage papers in IA topics or projects. Provide **links** to 5 to 10 best thesis, dissertation, or projects in IA within 3 years of application. (e.g., Criminal Justice encourages Forensics as a paper topic or Business Management encourages return on investment studies in IA security.) **Link to actual papers – not a subscription site required.**

Point Value: 2 pts per paper/project/10 maximum

- 5. *Practice of IA encouraged throughout the University:* The academic program demonstrates how the university encourages the practice of IA, not merely that IA is taught. (An *example* of a government-based IA security plan may be found at:

<http://csrc.nist.gov/publications/nistpubs/800-18-Rev1/sp800-18-Rev1-final.pdf>

A paper on effectively teaching how to write a security plan may be found at:

<http://csrc.nist.gov/organizations/fissea/2005-conference/presentations/Clark/Clark-paper.pdf> (*These are examples only and are not intended to replace an existing university security plan.*)

Overall Point Value: 20 minimum/25 maximum

- a. Provide a **link** to the University IA security plan. **(required)**

Point Value: 10 required

- b. University designated Information Systems Security Officer. Provide name, position and job description for person or persons responsible for information security at the institution. **(required)**

Point Value: 5 required

- c. Provide evidence of the implementation of the University-IA security plan to encourage IA awareness throughout the campus. (e.g., Students, faculty and staff are required to take computer based training or on-line tutorials; a security banner statement is present on university or department computers; security related help screens are available; university-wide seminars are held on the importance of IA, students are provided with a guide on good security practices, etc.)

Point Value: 5 required/10 maximum

- 6. *Student-based IA/Cybersecurity research:* The academic program encourages research in IA. Provide examples. This criterion focuses on *STUDENT*-based research and is important because research fuels the relevancy and currency of IA curricula.

Overall Point Value: 20 minimum/40maximum

- a. Program with IA/Cybersecurity focus has thesis, dissertation, student papers, or project requirements. Focus areas include declared majors, declared minors, established certificates of study within a major, and produce research papers/projects. Provide **links** to 5 to 10 **best** thesis,

dissertation, student papers, or projects in IA within 3 years of application.

Point Value: 2pts per paper/project/20 maximum

- b. List IA/Cybersecurity courses that require research paper(s) or virtual/physical lab project(s). Provide IA course titles that require these papers/lab projects within 3 years of application. Provide **link** to course syllabus.

Point Value: 2 pts per course/20 maximum

- 7. *Number of IA/Cybersecurity faculty and course load:* University IA faculty consists of a sufficient number of full time IA faculty members and additional faculty members (may be part-time, adjunct, visiting professor, etc.) teaching at least one IA course. (For the purposes of this document full-time faculty may be defined as a professor dedicated to teaching 3 IA courses per semester, or 2 IA courses with research, or 1 IA course with research and with advisees at Master or Doctoral Level). Shared and cross-departmental appointments for part-time and adjunct faculty can be counted. This may include institutional agreements for cooperative use/exchange of adjunct faculty from/between universities and departments within a university. This criterion **requires** a letter signed by the Dean or higher identifying faculty and teaching workload and a **link** to a biography or curriculum vitae for each faculty member.

Overall Point Value: 9 minimum/25 maximum

- a. Identify by name full-time employee or employees, as defined above, either faculty or member of the administration working in IA with overall responsibility for the IA Instructional Program. **Provide evidence, i.e., letter of testimony or job description. Provide link to biography or CV.**

Point Value: 5 pts required

- b. Identify by name additional IA faculty members (not listed in 7.a.), as defined above (full/part-time), teaching IA courses within the department that sponsors IA programs. **Provide link to biography or CV.**

Point Value: Up to 2 pts each/10 maximum

- c. Identify by name shared (e.g., intra or inter departmental, other 4-year graduate university, industry expert, etc.) and adjunct/part-time faculty (e.g., professor teaching 1 or 2 IA courses per semester or teaching IA in existing courses). **Provide link to biography or CV.**

Point Value: 2 pts each/10 maximum

- 8. *Faculty active in current IA/Cybersecurity practice and research.* It is clearly demonstrated that the faculty is active in current IA/Cyber practice and research, contributes to IA literature, and are members of IA professional

societies, are subject matter experts or attend/present at professional IA conferences.

Overall Point Value: 20 minimum/50 maximum

- a. Peer reviewed publications – papers (electronic or traditional) on IA/Cybersecurity as evidenced in refereed journals or conference proceedings within the past 3 years. **Provide links to actual papers not subscription service.**

Point Value: 2 pts per paper/10 maximum

- b. Published books or chapters of books on Information Assurance/Cybersecurity. Books/chapters must focus on IA and have been published within the last 5 years. **Provide title, authors and date published. ID specific chapters if authoring a chapter of a book.**

Point Value: 5 pts per book/1 pt per chapter/10 maximum

- c. Faculty is involved in writing grants and obtaining funding for IA education and/or research development or lab equipment. Provide synopsis of IA related grants, funding, equipment donations, or other funding to include date and approximate monetary value for the past 3 years.

Point Value: 2 pts per award/10 maximum

- d. Faculty members are subject matter experts (IA/Cybersecurity) for accrediting bodies and professional societies for IA/Cybersecurity, (e.g., ACM, IEEE, regional accreditation, professional accreditation, etc.). Faculty members are active members in IA/Cybersecurity organizations (ISSA, Cyberwatch, Infraguard, etc.) **List involvement for last 3 years.**

Point Value: 2 pts per review/membership/10 max

- e. Faculty members are engaged in and/or initiate student IA programs (Example: faculty-driven student discussion groups, IA clubs, lunch bunch, etc.) within the last 3 years.

Point Value: 1 pt per program/5 maximum

- f. Faculty presents IA/Cybersecurity content at major Regional/National/International conferences and events. Provide synopsis of involvement for the last 3 years.

Point Value: 1 pt per conference/5 max

Total MINIMUM Point Requirement: 124

Total MAXIMUM Points Available: 250

**MINIMUM POINTS REQUIRED TO QUALIFY AS AN IA CENTER OF
ACADEMIC EXCELLENCE: 124**

Minimum points must be met for each of the eight criteria.