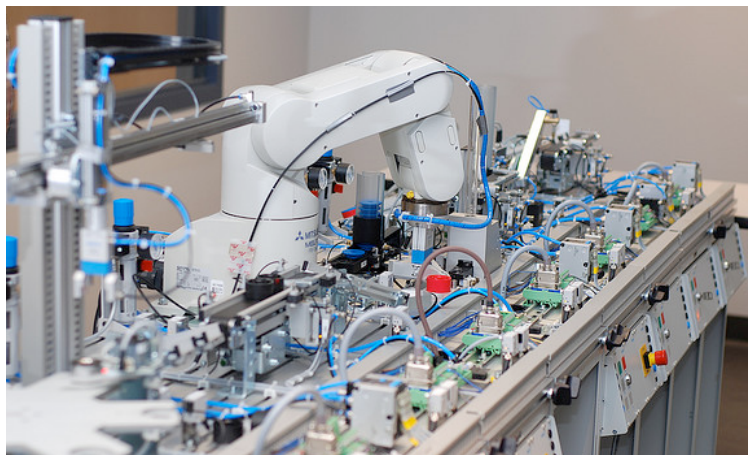




◆————◆
**STANDARD 13: RELATED EDUCATIONAL
ACTIVITIES**
◆————◆



**REPORT OF WORKING GROUP 7: CURRICULUM:
EVIDENCE-CENTERED RESEARCH AND PROFESSIONALLY-
BASED INSTRUCTION**

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13.0 WORKING GROUP ASSESSMENT CHECKLIST FOR STANDARD 13

FUNDAMENTAL ELEMENTS OF BASIC SKILLS	TEAM EVALUATION
<p>(From <i>Characteristics of Excellence in Higher Education: Requirements of Affiliation and Standards of Accreditation</i>. Philadelphia, PA: MSCHE, 2009)</p>	4=EXEMPLARY 3=EMERGING EXCELLENCE 2=MEETS STANDARD 1=DEVELOPING COMPETENCY
<ul style="list-style-type: none"> ➤ systematic procedures for identifying students who are not fully prepared for college level study; 	3
<ul style="list-style-type: none"> ➤ provision of or referral to relevant courses and support services for admitted under-prepared students; and 	3
<ul style="list-style-type: none"> ➤ remedial or pre-collegiate level courses that do not carry academic degree credit. 	3
FUNDAMENTAL ELEMENTS OF CERTIFICATE PROGRAMS	
<ul style="list-style-type: none"> ➤ certificate programs, consistent with institutional mission, that have clearly articulated program goals, objectives and expectations of student learning and that are designed, approved, administered, and periodically evaluated under established institutional procedures; 	2
<ul style="list-style-type: none"> ➤ published program objectives, requirements, and curricular sequence; 	3
<ul style="list-style-type: none"> ➤ program learning goals consistent with national criteria, as appropriate; 	3
<ul style="list-style-type: none"> ➤ available and effective student support services; and 	3
<ul style="list-style-type: none"> ➤ if courses completed within a certificate program are applicable to a degree program offered by the institution, academic oversight assures the comparability and appropriate transferability of such courses. 	3
FUNDAMENTAL ELEMENTS OF EXPERIENTIAL LEARNING	
<ul style="list-style-type: none"> ➤ credit awarded for experiential learning that is supported by evidence in the form of an evaluation of the level, quality and quantity of that learning; 	2
<ul style="list-style-type: none"> ➤ published and implemented policies and procedures defining the methods by which prior learning can be evaluated and the level and amount of credit available by evaluation; 	3

➤ published and implemented policies and procedures regarding the award of credit for prior learning that define the acceptance of such credit based on the institution's curricula and standards;	N/A
➤ published and implemented procedures regarding the recording of evaluated prior learning by the awarding institution;	N/A
➤ credit awarded appropriate to the subject and the degree context into which it is accepted; and	2
➤ evaluators of experiential learning who are knowledgeable about the subject matter and about the institution's criteria for the granting of college credit.	2
FUNDAMENTAL ELEMENTS OF NON-CREDIT OFFERINGS	
➤ non-credit offerings consistent with institutional mission and goals;	3
➤ clearly articulated program or course goals, objectives, and expectations of student learning that are designed, approved, administered, and periodically evaluated under established institutional procedures;	3
➤ academic oversight assures the comparability and appropriate transferability of such courses, if courses completed within a non-credit or certificate program are applicable to a degree program offered by the institution; and	2
➤ periodic assessment of the impact of non-credit programs on the institution's resources (human, fiscal, physical, etc.) and its ability to fulfill its institutional mission and goals.	2
FUNDAMENTAL ELEMENTS OF BRANCHES, ADDITIONAL LOCATIONS, AND OTHER INSTRUCTIONAL SITES	
➤ offerings at branch campuses, additional locations, and other instructional sites (including study abroad locations and programs offered at business/corporate sites) that meet standards for quality of instruction, academic rigor, and educational effectiveness comparable to those of other institutional offerings;	3
➤ activities and offerings at other locations meet all appropriate standards, including those related to learning outcomes;	3
➤ adequate and appropriate support services; and	2
➤ periodic assessment of the impact of branch campuses, additional locations, and other instructional sites on the institution's resources (human, fiscal, physical, etc.) and its ability to fulfill its institutional mission and goals.	3

FUNDAMENTAL ELEMENTS OF DISTANCE OR DISTRIBUTED LEARNING	
➤ distance learning offerings (including those offered via accelerated or self-paced time formats) that meet institution-wide standards for quality of instruction, articulated expectations of student learning, academic rigor, and educational effectiveness. If the institution provides parallel on-site offerings, the same institution-wide standards should apply to both;	3
➤ consistency of the offerings via distance learning with the institution's mission and goals, and the rationale for the distance learning delivery;	3
➤ planning that includes consideration of applicable legal and regulatory requirements;	3
➤ demonstrated program coherence, including stated program learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded;	3
➤ demonstrated commitment to continuation of offerings for a period sufficient to enable admitted students to complete the degree or certificate in a publicized time frame;	3
➤ assurance that arrangements with consortial partners or contractors do not compromise the integrity of the institution or of the educational offerings;	3
➤ validation by faculty of any course materials or technology-based resources developed outside the institution;	3
➤ available, accessible, and adequate learning resources (such as a library or other information resources) appropriate to the offerings at a distance;	3
➤ an ongoing program of appropriate orientation, training, and support for faculty participating in electronically delivered offerings;	3
➤ adequate technical and physical plant facilities, including appropriate staffing and technical assistance, to support electronic offerings; and	3
➤ periodic assessment of the impact of distance learning on the institution's resources (human, fiscal, physical, etc.) and its ability to fulfill its institutional mission and goals.	3
FUNDAMENTAL ELEMENTS OF CONTRACTUAL RELATIONSHIPS AND AFFILIATED PROVIDERS	
➤ contractual relationships with affiliated providers, other institutions, or organizations that protect the accredited institution's integrity and assure that the institution has appropriate oversight of and responsibility for all activities carried out in the institution's name or on its behalf;	3

➤ consistency of any course or program offered via contractual arrangement with the institution’s mission and goals; and	3
➤ adequate and appropriate accredited institutional review and approval of work performed by a contracted party in such functional areas as admissions criteria, appointment of faculty, content of courses/programs, instructional support resources (including library/information resources), evaluation of student work, and outcomes assessment.	N/A

13.1 INTRODUCTION

13.1.1 Précis: *The NJIT Student-Centered Effort*

In their 2002 response letter, the Middle States visiting team noted that much of the direct “assessments of student” informing “curricular reviews and innovations ... revolves around students' work in capstone courses,” suggesting that “largely absent ... is a systematic way to align institutional-level goals with those found at the program and course levels,” leading to a recommendation that “direct assessments of student achievement be more closely aligned with outcome goals at multiple levels” (MSCHE Visiting Team, 2002). This report discusses several different ways in which NJIT is addressing this recommendation, including creative use of online technologies and the impact of E-learning on engagement and retention. This report provides further insight, beyond our discussion of Standard 12 of the General University Requirements, into how fundamental skills are assessed and demonstrated throughout the curriculum, the impact and conduct of e-learning, and the effectiveness and scope of NJIT’s non-degree focused education programs.

13.1.2 *An Overview of Group 7’s Standard 13 Charge and Questions Addressed*

Standards of excellence concerning activities contributing to NJIT’s student-centered effort include the institution’s systematic procedures for identifying students who are not fully prepared for college level study in mathematics and communication; the alignment of its non-degree certificate programs with the institutional mission and how program goals, objectives and expectations of student learning are designed, approved, administered, and periodically evaluated; the degree to which experiential learning activities are supported by evidence of the level, quality and quantity of that learning; how non-credit degree offerings are consistent with institutional mission and goals; and the ways in which distance learning offerings meet institution-wide standards for quality of instruction, articulated expectations of student learning, academic rigor, and educational effectiveness (*Characteristics of Excellence*, 2009). To investigate NJIT’s general educational program, the steering committee and working group 7 jointly developed the following charge questions:

- 1) How are the existing efforts and future direction for our basic skills placement, instructional, and assessment efforts in writing and mathematics communicated

- to students and validated by faculty? (Section 13.2.1-13.2.2)
- 2) When admitted students lack proficiency in written and oral English, are the programs and procedures in place sufficient to ensure that these students are prepared and engaged? Are the procedures in place sufficient to assist international students in securing competitive competencies? (Section 13.2.2)
 - 3) How sufficient are the existing effort, future directions, and outcomes assessment strategies for each of the following: E-Learning, Experiential Learning, Non-Credit Offerings, and Graduate Certificate Programs? (Section 13.2.3-13.2.6)
 - 4) Are existing quality assurance measures sufficient to ensure instructional and student competency in certificate programs? (Section 13.2.6)
 - 5) What evidence exists that the achievements of learning goals of students in distance learning courses is similar to that of students in face-to-face courses? (Section 13.2.3.2)
 - 6) How has the NJIT concept of distance learning evolved since the last self-study? (Section 13.2.3)
 - 7) How has the impact of E-Learning upon NJIT's student engagement and retention been measured? (Section 13.2.3.4)

13.2 SELF STUDY INQUIRY AND OUTCOMES

13.2.1 Placement Processes for Admitted Students

Mathematics

All incoming first-year students and transfer students who have not transferred the GUR in mathematics are required to take a Mathematics Placement exam. The exam consists of four different parts designed to assess students' abilities in standard High School mathematical concepts such as algebra, trigonometry and geometry. Based on the exam, students are placed directly into a GUR satisfying course that is specific to their major, or into one of two remedial mathematics tracks. The different remedial tracks deliver content specific to whether a student intends to pursue a technical/engineering/scientific or a humanities/architecture/ management major. The former prepares students to understand calculus, while the latter prepares students to be able to understand the applications of general mathematical concepts.

At the present writing, recommendations of the Task Force on Retention and Graduation are under review (Altenkirch, 2011; Gatley, et al., 2011). When implemented, these recommendations will shift first-year placement in order to enhance student learning, retention, and graduation.

English Composition

Students are placed into Basic Writing (HUM 099), Traditional Composition (HUM 101) or Honors Composition (HUM 101H) primarily based on the reported SAT-Writing score or its ACT equivalent. Should an incoming freshman challenge his or her composition placement, he or she would be required to undertake that challenge within the ETS Criterion system and achieve the designated cut score for two writing samples. In borderline cases, those SAT-W scores that are at or near the “cut” score between a HUM 099 and HUM 101 placement, the Composition Director reads and evaluates the essay generated for the SAT Writing section. Placement records are maintained by the Office of Institutional Research and Planning.

13.2.2 Placement Processes for English as Second Language Students

Programs and procedures to ensure that admitted international students, as well as recent immigrants, lacking English proficiency attain a level of proficiency conducive to academic and professional success are provided by the English as a Second Language (ESL) program, located in the Department of Humanities.

The program includes a required two-to-three semester (depending on proficiency level) course sequence: ENG 095—5 credits; HUM 099s—6 credits; HUM 100-SL—3 credits. Placement into the sequence is based on the student’s performance in English placement testing, along with assessment of the student’s test essay by the ESL program director and confirmatory ESL testing. The sequence focus is on “English for Academic Purposes,” and the sequence includes frequent reading and writing assignments, practice to develop grammar and vocabulary, video-recorded oral presentations, and weekly small-group tutoring sessions. Successful completion of this sequence satisfies the English Composition GUR.

Besides the ESL sequence, the ESL program offers ESL sections of some humanities courses that satisfy other humanities GUR, including English Composition II (HUM 102), Cultural History, Technical Writing, Oral Presentation, Literature, and Computers and Society. The purpose of these sections, which are optional, is to enable students to satisfy humanities GUR while simultaneously continuing to strengthen English skills. The instructors have backgrounds in both ESL and course subject material.

The ESL program also provides international graduate students at NJIT with English courses tailored to their particular needs; these courses are open to undergraduates, with permission of an advisor.

13.2.3 The Role of E-Learning

Historically, NJIT held a position of national prominence in e-Learning. This section of our report described existing efforts and future directions

13.2.3.1 Existing Efforts and Future Directions

Existing efforts for both Online Programs and Graduate Certificates have both centralized and de-centralized components. In general, online Degrees at NJIT are largely at the graduate level and available from every NJIT School or College except CoAD. Graduate Certificates are 12-credit/4 course packets of learning in specific highly employable subjects and are comprised of existing NJIT graduate courses from across all NJIT Schools or Colleges. The slate of graduate certificates offered changes each year. In both enterprises, all key academic decisions and academic advisement to students are made by the departments and faculty in which the academic courses are housed.

In addition, regarding online programs, overarching guidance and policy recommendations originate from the University Distance Learning Advisory Committee, whose membership is drawn from faculty representatives of each NJIT School or College.

Two centralized support service units assist and coordinate in both enterprises: Continuing Professional Education (CPE), led by the Associate Vice President for Continuing and Distance Education, and Instructional Technology and Media Services (ITMS) led by a Director. Regarding CPE, centralized responsibilities include recruitment of students for both enterprises; assistance to students through the admission phase and then, once registered, ombudmanship regarding various non-academic tasks (e.g., registrar). Regarding ITMS, centralized responsibilities include conduct of professional development courses for faculty to hone their skills as online instructors and personalized assistance and mentoring of faculty in the up-front work to create quality online classes. CPE focuses more on students; whereas ITMS more on faculty. Future directions for Online Programs and Graduate Certificates both involve scalable growth and continuous quality improvement including appropriate incorporation of new educational technologies to advance learning.

13.2.3.2 Achievement of Learning Goals of Distance vs. Traditional Courses

Studies conducted by the Office of Institutional Research and Planning have documented the relationship between these two types of course offerings. When offered in a supported environment of digital learning, these studies have documents that students learn at an equal, if not superior, level to those offered in a traditional face-to-face format.

13.2.3.3 Changes in E-Learning Since 2002

In 2000 the Distance Learning (DL) delivery and support functions were centrally managed in the Office of Continuing Professional Education (CPE). This department was responsible for supporting both the students as well as the instructors from registration through completion.

Since the 1980's NJIT offered isolated distance learning courses, online degrees, and graduate certificates. Most of the courses required for undergraduate degrees where in

Computer Science and Information Systems. The initial course development for many of these was funded through a grant in the prior 10 years from the Sloan-C Foundation. Besides offering DL courses to NJIT students, NJIT was a member of National Technological University (NTU) through 2005. NJIT was also involved in the delivery of course materials to African Virtual University through 2006. These materials were used by instructors in Anglophone Sub-Saharan Africa to deliver instruction in basic computing and other non-credit programs.

During this time enrollment was strong, but the student evaluations for online courses were significantly lower than those for face-to-face classes. In 2000, course lecture materials consisted mainly of video recordings, were delivered to students through CD-ROM sales or VHS rentals through the university book store for a fixed price. Starting in 2000 we began encouraging the use of a course management system (WebCT). In 2006, NJIT joined Apple iTunesU and began the process of migrating all recorded lecture materials for delivery through the iTunes store for no cost to students. Most recently the majority of recorded course support materials consist of digital recording of the computer screens with accompanying digital audio files. An automated system has been established to allow instructors to record these materials anywhere and upload them to a server for processing and automated delivery through the iTunesU platform.

Since implementing these changes and hiring an additional instructional designer to work with faculty we have seen a significant increase in the student satisfaction scores for online courses – to the point where they are comparable to face-to-face counterparts.

In 2007 the responsibility to support online learning was decentralized and mostly became the responsibility of the individual departments. CPE continues to provide some support to students enrolled in Graduate Certificate Courses. However, support for most graduate and undergraduate students resides in the individual departments and the University IT Help Desk. The development and delivery of distant learning courses and degrees are the responsibility of each School or College Dean or Department Chair and their faculty.

Instructional Technology and Media Services (ITMS) continues to provide full support and training for instructors creating or delivering of DL course materials as well as full support for all technology used in face-to-face or hybrid instruction. Since 2000 NJIT has migrated from WebCT, a commercial Learning Management System (LMS), to Moodle, an open LMS. When NJIT was on the WebCT system “courses” would be created for all faculty requesting such. Since the migration to Moodle, NJIT has recently begun to create a “course” for all sections (face-to-face, hybrid or online).

The experiences over the past 10 years that many instructors and students have had with delivering and enrolling in DL courses has helped those technologies become more mainstream. Currently, many of the tools used to support DL courses 10 years ago are now being used in the traditional classroom. Many new partnerships continue to be explored today both nationally and internationally.

In evaluating the university's distance learning offerings using the MSCHE's recently released *Distance Education Programs* (2011), we determined that although at NJIT "Online learning is appropriate to the institution's mission and purposes (MSCHE Standard 1)", the University should strengthen its mission statement to indicate that it "explains the role of online learning within the range of the institution's programs and services." The Teaching, Learning and Technology Committee, along with the Distance Learning Advisory Committee contribute significantly to informing faculty and students as to "how the online learning environment is created and supported" and incorporating into "its online learning programs methods of meeting the stated institutional goals for the student experience at the institution." This demonstrates compliance with Hallmark 3: "Online learning is incorporated into the institution's systems of governance and academic oversight (MSCHE Standard 4)." These committees have supported and funded efforts toward strengthening "the recruitment and admissions programs supporting the online learning courses and programs [and] appropriately [targeting] the student populations to be served.

MSCHE Standard 2 notes the following: "The institution's plans for developing, sustaining, and, if appropriate, expanding online learning offerings are integrated into its regular planning and evaluation processes." The faculty, in concert with the Office of Continuing Professional Education and with the participation of TLT and DLA, create online content and deliver the material. "Development and ownership of plans for online learning" certainly [extends] beyond the administrators directly responsible for it and the programs directly using it. The Office of Instructional Technology and Media Services, in collaboration with the Office of Web Services, support efforts to "increase numbers of programs provided through online learning courses and programs and/or numbers of students to be enrolled in them" through the services of professional instructional designers and other incentives. What should be considered are the development of specific "Plans for online learning [that] are linked effectively to budget and technology planning to ensure adequate support for current and future offerings." NJIT's participation in Open Courseware (Sebastian, Bloom, 2010; OCW, 2011) initiatives "demonstrate the institution's capacity to assure an appropriate level of quality; and the Office of Continuing Professional Education has "a track record of conducting needs analysis and of supporting programs."

As a pioneering institution in online education, NJIT is continuously revising its "curricula for ... online learning offerings [so they] are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats." ITMS offers short courses and intensive immersion workshops twice a year for faculty to align their "curricular goals and course objectives" to deliver "the best uses of online learning in different disciplines and settings. In particular, the MS in Professional and Technical Communication, NJIT's first fully online degree program, demonstrates the availability of a "curriculum [that] is coherent in its content and sequencing of courses and is effectively defined in easily available documents including course syllabi and program descriptions." Not all offerings indicate that, "The institution or program has

established and enforces a policy on online learning course enrollments to ensure faculty capacity to work appropriately with students." Moodle, our learning management system, facilitates "Course design and delivery supports [for] student-student and faculty-student interaction," and ITMS provides "Curriculum design and [help with] the course management system [to] enable active faculty contribution to the learning environment" and "Course and program structures provide schedule and support known to be effective in helping online learning students persist and succeed."

Just as with traditional face-to-face courses, NJIT complies with Hallmark 5 in that it "evaluates the effectiveness of its online learning offerings, including the extent to which the online learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals." The Office of Institutional Research and Planning, in collaboration with CPE and ITMS, engages in assessment and evaluation protocols to ensure continuous course improvement, encourage student persistence and promote student engagement. Ultimately, however, faculty are "responsible for delivering the online learning curricula and evaluating the students' success in achieving the online learning goals are appropriately qualified and effectively supported." The Office of Academic Computing, in conjunction with ITMS, provides automated and real-time human support services for "students enrolled in online learning offerings" (Hallmark 7). Under the direction of the Chief Information Officer, NJIT "provides sufficient resources to support and ... expand its online learning offerings" (Hallmark 8). Most significantly, and in compliance with federal requirements, NJIT is compliant with the elements of Hallmark 9: "The institution assures the integrity of its online offerings".

Through password driven system authentication methods, "The institution has in place effective procedures through which to ensure that the student who registers in a distance education course or program is the same student who participates in and completes the course or program and receives the academic credit." In its email and online services usage policies, "The institution makes clear in writing that these processes protect student privacy and notifies students at the time of registration or enrollment of any projected additional costs associated with the verification procedures." One recommendation is compliance with Hallmark 9's element that "The institution's policies on academic integrity include explicit references to online learning," even though "Issues of academic integrity are discussed during the orientation for online students [and Training] for faculty members engaged in online learning includes consideration of issues of academic integrity, including ways to reduce cheating.

13.2.3.4 Impact of E-Learning on Student Engagement and Retention

The reports on Standards 9 and 14 are relevant to this impact, and we expect implementation of the motions and recommendations from the Task Force on Retention and Graduation to have an important impact on this area (Altenkirch, 2011; Gatley et al., 2011).

13.2.4 The Role of Experiential Learning

At NJIT, matriculated undergraduates can participate in co-op and internship experiences, and these are overseen by the Office of Career Development Services and include co-ops, internships and community services programs. The emergence of Learning Communities (Redling, 2011) at NJIT is another, newer example of experiential learning. The Division of Career Development Services (CDS, 2011) provides a comprehensive approach to career management and preparing students for work place entry. Through career advising, referral services, and experiential learning opportunities, students and alumni receive benefits that complement their academic progress and accomplishments. We are focused on providing employers with responsive service and candidates who are well prepared. Our multiple initiatives include outreach to non-profit agencies to share the talents of our university with the local and state communities. We invite you to experience the many professionally managed services and programs offered through CDS.

Vision: To have Career Development Services become a widely integrated and invaluable component of the university's overall education delivery and student professional preparation strategies.

Mission: Career Development Services is a value-added contributor to the career planning and preparation of NJIT students and graduates. We are dedicated to continually improving our client services and to assuming leadership in the profession of career development.

Our Mission is fulfilled through assisting:

- Students in gaining a clear understanding of their career options and workplace requirements, in obtaining experiential learning opportunities in the private and public sectors, in developing job search and interviewing skills, and obtaining employment upon graduation;
- Alumni in refining their job search and interviewing skills, career objectives, gaining a clear understanding of their career options and workplace requirements, and obtaining meaningful employment in a specialty consistent with their education, experience, and personal goals;
- Faculty/staff in understanding the needs of employers and of the academic preparation and associated skills necessary for graduates, and thus influencing curricula content and academic advisement;

- Employers in staffing their organizations with qualified students, graduates, and alumni capable of filling their workforce needs, and in developing closer and more effective relationships with University staff;
- The community in linking students, alumni, faculty, and staff directly to service and civic engagement activities with organizations committed to improving the quality of life for New Jersey residents.

Experiential learning is an educational cornerstone at NJIT spanning numerous programs from pre-college through graduate studies. The majority of experiential learning initiatives are administered through our Division of Career Development Services (CDS). CDS is a value-added contributor to the career planning and professional preparation of NJIT students and graduates. CDS is the primary provider of formal NJIT experiential education programs which include cooperative education (co-op), internships and civic engagement. Annually, more than 1,700 students participate in some form of experiential learning. All CDS experiential learning options link direct, hands-on experience with knowledge acquired in the classroom, providing a comprehensive experience for students during their academic progress. At NJIT, options for experiential learning include, but are not limited to, workplace assignments, on campus research projects, community and public service, and Capstone course projects.

The NJIT Co-op program gives students the advantage of experience that is major-related and integrates reflection, critical analysis, and values clarification as additional learning components. Today's employers seek graduates, who are technologically proficient, possess developed communication and teamwork skills, and who understand the business environment. Students who successfully undergo experiential education are simply more fully prepared graduates. Co-op at NJIT is an academically integrated model and students are granted three credits upon the successful completion of the requirements for each co-op course.

This year at NJIT, over 1300 students improved their leadership, professional, and technical skills through active engagement in a diversity of civic and community projects. Students used their abilities, talents and enthusiasm in volunteer or paid internship projects such as mentoring and teaching computer skills to public and charter school students, helping prevent homelessness by volunteering at a local shelter, teaching children to read, researching the use of green and energy efficiency strategies in affordable housing, conducting fund-raising drives to contribute financial support to disaster victims, and leading the fight to prevent drug abuse.

NJIT received in 2010 for a second time, designation as a member of the President's National Higher Education Community Service Honor Roll under the auspices of CDS. We were recognized for implementing three exemplary community service programs; the Wachovia/NJDCA Housing and Community Development Scholars Program; the Civic Engagement Computer Center@ NJIT, and the NJIT Annual "Community of Caring" Volunteerism Campaign.

Capstone Projects at NJIT call upon students to help develop solutions for real-world needs in many fields. Capstone courses are offered through many academic majors. One outstanding example is the capstone program initiated within the College of Computing Sciences. Since its inception in 2002, more than 1, 800 students have completed over 330 projects ranging from large corporations to smaller high-tech firms.

13.2.5 The Role of Non-Credit Offerings

Non-credit programs at NJIT are overseen by CPE. Instructors are drawn both from NJIT faculty ranks with Dean approval, and from fully-vetted industry practitioners. During the period of this review, the majority of activity involved conduct of short training classes offered at company sites that are either funded by New Jersey training grants or the company itself. That is, between 2002 and 2010, 73,878 employees in 605 companies were trained. By definition, all training events are tailored to company needs to ensure that incumbent workforces are performing at the highest levels. Recently, CPE resuscitated an earlier activity to provide non-credit short courses on a regular schedule to professionals each of whom pay tuition to NJIT largely from their own pockets. These courses are scheduled both in NJIT training rooms and online. Future directions include a greater emphasis on developing and conducting training courses of this sort, especially since effective January 2011, New Jersey Professional Engineers are now required to take 24 hours of continuing education every two years to renew their licenses (Consumer Affairs, 2011).

13.2.6 The Role of Graduate Certificate Programs

Many NJIT offices, both academic and support, are involved in these steps. Regarding (a), since the slate of Graduate Certificates offered each year is changed to reflect the latest external data regarding “in-demand” professional jobs in the region, CPE is the engine that annually initiates a 4-month formal process resulting each year in a new slate. However, after initiating the process, responsibility for all academic aspects including selection of courses is entirely under academic control. Once the academics have designed a new or revised a current certificate, CPE then reviews the submissions and recommends a new slate with some 15 credentials. The recommendation is presented at the April meeting of the NJIT Graduate Council for their approval. Regarding (b), CPE and ITMS, as described above, are involved; for (c), Admissions, with assistance from CPE, is prime; and for (d), Graduate Studies is the final office that reviews all candidates for certificate award and triggers the request that results in this award being recorded on NJIT transcripts. In addition, because the Associate Provost responsible for Graduate Studies is the Chair of the NJIT Graduate Council, this office is responsible for seeking approval of any changes to Graduate Certificate policy and conduct from the Council. In these various ways, quality is maintained in the particularly dynamic NJIT Graduate Certificate Program (CPE, 2011).

Quality Assurance

Quality is assured for certificate students through: (a) the existence of a formal process involving approval of Deans and Chairs for every certificate proposed by NJIT faculty and eventually appearing on the slate of offerings by the University each year, (b) the guidelines faculty follow to create quality online versions of any NJIT course that is selected to be part of a Certificate, (c) the manner in which students are admitted to the Certificate Program as non-matriculants but which nevertheless follow all regular NJIT standards for matriculated admission to NJIT, except that of a GRE score; and (d) the monitoring of students' academic performance to ensure that only those achieving the required 3.0 GPA are awarded Certificates, as this accomplishment is recorded officially on the NJIT transcript.

13.2.7 The Center for Pre-College Programs

The Center for Pre-College Programs (CPCP, 2011) was established in 1978 in order to increase access to scientific and technological fields among traditionally underrepresented populations and to improve the teaching of science and mathematics in secondary and elementary schools. Achievement is reflected in the accomplishments of its many pre-college alumni who become teachers who show the way to disadvantaged youngsters, engineers who create technology that allows astronauts to rendezvous in space, scientists researching new avenues to control and cure diseases, and financiers who strive to keep our economy flourishing. All programs involve corporate partners, local school districts, non-profit educational organizations, and NJIT. The corporate partners provide classroom speakers, financial support, role models, field trips, and expertise in the teaching of science and engineering.

Over two decades of involvement in pre-college science and engineering programs have convinced NJIT and its partners that intervention must begin in the elementary grades. Hence, NJIT has greatly increased its activities aimed at improving science teaching in the classroom and reforming the elementary science curriculum as early as kindergarten. The Center for Pre-College Programs annually serves more than 3,000 elementary and secondary students and their teachers in a variety of programs.

13.3 CRITICAL ANALYSIS AND CONCLUSIONS

NJIT was an early adopter of non-traditional learning methods and environments, developing communication systems in the early 1990s that earned trademarked terms such as the Virtual Classroom. Throughout the subsequent decades, NJIT has continuously strengthened its offerings and technologies in this domain and has validated the systems and protocols it deploys to ensure a high quality of learning and staunch integrity of its learning environments. As the University grows, so does its programmatic offerings, both degree and non-degree (see also Working Group Report, Standard 11), and continues to serve disparate cohorts of learners, from K-12 through professionals returning for graduate degrees and other certifications. Its placement methodologies for undergraduates are

continuously assessed, with sometimes dramatic changes ensuing, such as recent ones in Mathematics. With the increase in usage of social networks, web-based learning objects and the expansion of databases, all students are e-learners today, and NJIT has provided the resources, guidance and support—both technologically and pedagogically, to succeed in an information-driven academic world.

13.4 COLLABORATION WITH OTHER WORKING GROUPS

In scheduled meetings hosted by the Rapid Assessment and Steering Committee, our Working Group collaborated with other groups. Collaboration was also strengthened through meetings with the self study consultant (Robert Clark). Asynchronous communication was fostered through the open source content management system (Moodle); in that platform, the Working Groups collaboratively reviewed each stage of the planning and reporting process, from question design to outlines of the Working Group Reports, to edited review, to final copy.

Working Group 7's Chair and Co-chair have consulted with leaders of Working Group Group 4 and 14, sharing data and other information resources to enhance content and share related questions and scope.

13.5 RECOMMENDATIONS FOR IMPROVEMENT

The first recommendation for this report is to integrate e-learning more widely into the University's overall educational delivery and student professional preparation strategies. The strategy is to build into the GUR at least one online learning course during the undergraduate experience. The recommendation also involves establishing a support structure robust enough to accommodate the increased usage of learning management software systems and the infrastructure needed. Information Services and Technology, along with ITMS, will have primary responsibility of this improvement.

The second recommendation is to develop a long-term strategic plan to improve coordination in the availability and use of instructional technology for traditional and e-learning degree and certificate programs. The strategy is to evaluate continuously the impact of instructional technology in existing traditional and e-learning programs and develop methodologies that have the highest educational impact on the students. The development of a portfolio of measures to monitor and document outcomes and progress in the use and enhancement of instructional technology, including but not limited to, student engagement and retention, will be needed for assessment. The primary responsibility would fall under the Office of the Provost in collaboration with Continuing Professional Education (CPE) and Instructional Technology and Media Services (ITMS). A third recommendation is to develop a mechanism to continuously evaluate and prioritize the undergraduate and graduate certificate and non-credit program offerings in order to be in line with the projected demands of industry. It is critical that as the number of programs increase, a continuous improvement process is in place for delivering needed programs given the instructional capacities. The strategy is to involve the industrial

advisory boards of departments and colleges in the process while providing assessment results to justify improvements or changes. The primary responsibility would fall under the Office of Continuing Professional Education (CPE) working closely with the Office of the Provost.

13.5.1 Recommendations Table: Standard 13: Related Educational Activities

RECOMMENDATION 1	More widely integrate e-learning into the University's overall educational delivery and student professional preparation strategies.
➤ VISION: The desired future for the recommendation	Build into the GUR at least one online learning course during the undergraduate experience.
➤ STRATEGY: The methodology recommended to achieve the vision	Establish a support structure robust enough to accommodate the increased usage of learning management software systems and the infrastructure needed.
➤ TACTIC: The specific action recommended to implement the strategy	Provide sufficient resources to the Office of Information Services and Technology and ITMS, in coordination with GUR department leadership.
➤ ASSESSMENT: The metric recommended to measure achievement of the vision	Use the NJIT program assessment framework to gauge success.
RECOMMENDATION 2	Develop a long-term strategic plan to improve coordination in the availability and use of instructional technology for traditional and e-learning degree and certificate programs
➤ VISION: The desired future for the recommendation	Enhance the learning experience of NJIT students
➤ STRATEGY: The methodology recommended to achieve the vision	Continuously evaluate the impact of instructional technology in existing traditional and e-learning programs and develop methodologies that have the highest educational impact on the students.
➤ TACTIC: The specific action recommended to implement the strategy	The development of a portfolio of measures by the Office of the Provost in collaboration with Continuing Professional Education (CPE) and Instructional Technology and Media Services (ITMS) to monitor and document outcomes and progress in the use and enhancement of instructional technology, including but not

	limited to, student engagement and retention, will be needed for assessment.
➤ ASSESSMENT: The metric recommended to measure achievement of the vision	Use the NJIT program assessment framework to gauge success.
RECOMMENDATION 3	Develop a mechanism to continuously evaluate and prioritize the undergraduate and graduate certificate programs offerings
➤ VISION: The desired future for the recommendation	Offer certificate and non-credit programs that enhance timely education of the workforce
➤ STRATEGY: The methodology recommended to achieve the vision	Involve the industrial advisory boards (IABs) of departments and colleges in the process while providing assessment results to justify improvements or changes.
➤ TACTIC: The specific action recommended to implement the strategy	Office of Continuing Professional Education (CPE) working closely with the Office of the Provost request annual review by IABs of certificate offerings based on internal and external assessment data.
➤ ASSESSMENT: The metric recommended to measure achievement of the vision	Use the NJIT program assessment framework to gauge success.

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