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ABSTRACT
        This document presents the Strategic Plan Revision of the
Southeastern University and College Coalition for Engineering Education
(SUCCEED). SUCCEED aims to institute a sustainable version of its curriculum
model on each of the selected campuses. The areas of expertise in the program
include faculty development, outcomes assessment, technology-based curriculum
delivery, student transitions, freshman experience, transfer, and mentoring.
Contents include: (1) Introduction; (2) SUCCEED's Organizational
Structure--Its Foremost Strategy (Campus Implementation Teams, Coalition
Focus Teams, and Coalition Service Teams); (3) Changes in SUCCEED's
Management Structure (Rationale for Changes, Proposed Changes, and Concerns
Regarding Changes); (4) SUCCEED's Overall Goals and Milestones; (5) SUCCEED's
Core Strategies; (6) Dissemination CST Strategic Plan; (7) Clemson University
Strategic Plan; (8) Florida A&M University--Florida State University CIT
Strategic Plan; (9) Georgia Institute of Technology CIT Strategic Plan; (10)
North Carolina A&T State University CIT Strategic Plan; (11) North Carolina
State University CIT Strategic Plan; (12) University of Florida CIT Strategic
Plan; (13) University of North Carolina at Charlotte Strategic Plan; and (14)
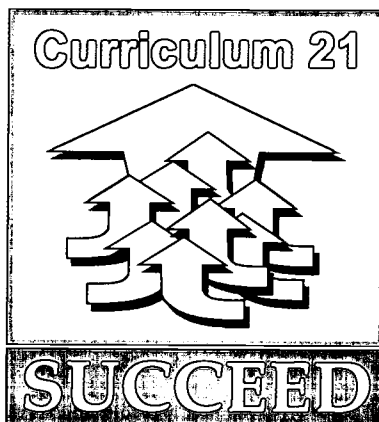Virginia Polytechnic Institute and State University Strategic Plan. (YDS)

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SUCCEED

SOUTHEASTERN UNIVERSITY AND COLLEGE
COALITION FOR ENGINEERING EDUCATION

Strategic Plan Revision

April 30, 2001

Curriculum 21

SUCCEED

An NSF Engineering Education Coalition

*Clemson University - Florida A&M University - Florida State University
Georgia Institute of Technology - North Carolina A&T State University
North Carolina State University - University of Florida
University of North Carolina at Charlotte
Virginia Polytechnic Institute and State University*

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Introduction

In **SUCCEED**'s proposal to the NSF for five additional years of funding, we recognized that certain changes would be necessary as NSF sponsorship nears completion—changes to ensure a legacy independent of that sponsorship. Among the anticipated changes were the strengthening of the Campus Implementation Team (since campus-based entities are the most likely to be successful without external funding), the funding of Coalition-wide activity from other sources, and an increasing dissemination effort. This revision of our strategic plan continues the practice initiated last year of seeking graphical ways to capture and review our plans. In the case of **SUCCEED**'s Campus Implementation Teams, which ensure that a version of our curriculum model is implemented on their campus, a matrix is provided that is a timetable illustrating the use of NSF funding to initiate innovation and then showing the transfer of innovation to institutional funding. For each campus, there is one such matrix for each area of **SUCCEED**'s focus. Our Coalition Focus Teams, which have a coalition-wide charter, have played a different role in this past year—we have sought to invest expertise within chosen individuals rather than teams with membership from each campus. The determination of the areas in which experts are being established derives from a survey of the US Engineering Deans, so it is market driven. Large sections of this report remain unchanged from our strategic plan revised in April 2000— yet it is the hallmark of good strategic planning that it does not change frivolously. Rather, the updating of a well-designed plan will require that some elements remain unchanged, that others be modified slightly to accommodate new information or changes in conditions, and that others be changed significantly to effect larger changes in direction.

SUCCEED's Organizational Structure—Its Foremost Strategy

The emphasis of our activities is the implementation and institutionalization of innovations produced by **SUCCEED** and, where appropriate, other Coalitions and non-Coalition schools. Our model curriculum is the template, and programs that change the academic culture and are driven by comprehensive assessment and evaluation results will facilitate its implementation. Given **SUCCEED**'s vision of achieving sustainable and systemic curriculum reform, the following key observations are incorporated into our strategy:

1) **SUCCEED**'s role is not to fully fund comprehensive implementation of our curriculum model on each campus, but rather to lead and facilitate implementation on all campuses.

2) Acceptance of our model and broad participation in the implementation process will be needed on each campus; particularly important is strong buy-in by the department chairs and other leaders on each campus.

3) Each implementation of our curriculum model will differ, reflecting the diversity of the **SUCCEED** Colleges of Engineering.

4) The strength of the Coalition approach is in reduced development and testing cost, a support structure, shared resources, and the credibility of NSF funding.

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Campus Implementation Teams

Based on these observations, **SUCCEED** designed a team-based structure that empowers and supports each college in its efforts to implement our curriculum model. The heart of this structure is the **Campus Implementation Team (CIT)**. A **CIT** has been formed on each campus with the mission of developing and implementing a strategic plan that will produce sustainable and systemic curriculum renewal on the individual campus. Each **CIT** has developed a strategic plan for achieving systemic change over a five-year period—details of each campus' plan are provided later. Each campus implementation team has the role of leadership and facilitation. The team will also be involved in assessment and evaluation of their campus programs to guide its decisions and to provide input to the other **CIT**s. It is critical to recognize that each campus is different and the **CIT** will understand its campus and how the **SUCCEED** model should be adapted to it. Our strategy empowers the **CIT**s to effect curriculum renewal on their campuses; their activity is central to achieving our vision.

Coalition Focus Teams

An analysis of the strengths, weaknesses, and opportunities facing **SUCCEED** led the Guidance Team to identify the critical issues that must be addressed in order to achieve implementation of the **SUCCEED** curriculum model on all campuses. Identification of these critical elements was based on input from our stakeholders (e.g., Dean's Council, External Advisory Board, review team, department chairs, student advisory team, and **SUCCEED** PIs). Four areas were selected from this input. These core competencies are:

FOCUS AREAS

1. **Faculty Development**
2. **Outcomes Assessment**
3. **Student Transitioning**
4. **Technology-Based Curriculum Delivery**

A second set of teams was formed, called **Coalition Focus Teams (CFTs)**, with the charge of facilitating the implementation of our innovations in each of these four critical areas. Each of the four **CFT**s has had a member from each **SUCCEED** campus and these **CFT** members have also been members of their home **CIT**. This matrix organization has helped ensure that the **CFT**s are addressing the issues necessary for success on each campus and maximizing communications between campuses in each focus area. The four focus areas represent the essential elements of our curriculum model, and at the end of five years each campus will have these elements deployed in their curricula.

Coalition Service Teams

Two additional teams round out **SUCCEED**'s strategy for success through collaboration. Because these two teams provide planning assistance and expertise to all Coalition teams, they are called Coalition Service Teams. The Dissemination Team is charged with reaching out to the engineering education community to share **SUCCEED**'s experiences. Through the more active

and focused dissemination strategies described later, **SUCCEED** will achieve a wider audience more rapidly. To gain acceptance for **SUCCEED**'s efforts and to guide internal planning, an Assessment and Evaluation team has also been formed. A wide range of complementary strategies will enable **SUCCEED** to provide the evidence necessary to facilitate change.

Changes in SUCCEED's Management Structure

Rationale for Changes

When the **CIT/CFT** matrix structure was created, it was recognized that the roles of these teams would change over time, and specifically that funding of the **CFTs** would decrease toward the end of the contract. This is logical, since the **CFTs** will receive no funding after NSF funding terminates, whereas the **CITs** are likely to receive continued institutional support beyond **SUCCEED**'s Cooperative Agreement. There are other driving forces behind the proposed changes in management structure as well

- Sharing within the **CFT** team structure has diminished. A new vehicle for sharing among institutions is needed.
- We must focus our remaining effort on projects with a high potential for success.
- As we near the end of the Cooperative Agreement, the role of the **CFTs** must change to secure **SUCCEED**'s legacy.
- **SUCCEED**'s focus is shifting to dissemination, full institutionalization, proposal writing, and summary assessment, as we had expected in our long-range planning.
- Assessment and evaluation at the project and the **CIT** level is not as effective as it should be.

Changes Effected in the Past Year

Of the changes that were proposed last year, the following changes have been implemented.

- Enlist a team made up of the **CIT** leaders to take responsibility for sharing among institutions.

This approach took the inter-campus interaction up to a new level, in that the **CIT** leaders had the opportunity to learn more about what their peers on other campuses were doing. This group was able to negotiate solutions to common problems because of their ability to access resources not available to the majority of the **CFT/CIT** membership in earlier years.

- Expand the role and funding of the Dissemination Team. Redirect the **CFTs** toward dissemination and legacy establishment in a project mode. Identify "experts" in a number of areas and have them lead dissemination, assessment, and best practice development in their area.

These three changes are grouped to adequately reflect the integrated manner in which they were implemented. Essentially all of the funding previously designated for **CFT** use in previous years was redirected to the Dissemination Team. This forced all **CFT** activity to be contracted on a demand basis—support for former **CFT** efforts and personnel was tied to specific needs of the

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US engineering education community. All personnel (not just **CFT** leaders) were considered for their suitability as designated "experts" who, in turn received support for specific legacy activities—designing workshops, writing survey papers, gathering best practice documentation.

- Make the Assessment & Evaluation effort a project that reports directly to the **GT**.

A summative assessment project is underway under the direction of Bob Serow, who has led SUCCEED's qualitative assessment efforts in the past. Campus visits and interviews are already in progress.

- Add assessment expertise at the **CIT** level

In order to bolster assessment efforts for certain projects at each campus, funding was allocated to support assessment efforts at each College. It was also intended for these funds to seed a permanent assessment position at institutions had not already established such a position.

SUCCEED's Overall Goals and Milestones

SUCCEED defined a set of goals and milestones in preparing its proposal to the NSF for continued funding. While the path we are taking has been updated with knowledge and experience, we are still committed to reaching the same destination defined by these goals.

<u>SUCCEED GOALS</u>

<u>Overarching Goal</u>   **Institute a sustainable version of our curriculum model on each SUCCEED campus.**

- **Create a strong first-year environment for students and develop a skill set for success in the workplace.**

- **Establish a comprehensive engineering faculty development program on each SUCCEED campus.**

- **Install continuous curriculum improvement processes that are driven by assessment of the quality of our graduates.**

- **Deploy a network-based collaborative learning environment on each SUCCEED campus.**

- **Identify best practices for the diffusion of educational innovation into engineering curricula.**

- **Market the very best SUCCEED products and processes beyond the Coalition through the establishment of partnerships.**

- **Assess and evaluate the success of our Coalition's activities.**

Part of our core strategy is to measure our progress towards reaching our goal set using the following key **SUCCEED** milestones.

KEY MILESTONES

- Development of an annually-updated strategic plan for implementing the **SUCCEED** curriculum model on each campus.

- 60% of the Coalition Engineering faculty will have participated in the faculty development program by the end of Year 10.

- 50% of the **SUCCEED** academic units will have undergone **SUCCEED**-facilitated curriculum renewal by the end of Year 10.

- Participation of 75% of **SUCCEED** departments in on-going collection of outcome assessment measure collection by the end of Year 10.

- 70% of courses in the **SUCCEED** Colleges of Engineering will incorporate technology by the end of Year 10, with a focus on web-based courseware management tools and empowering faculty to develop electronic-media-based instructional content.

- Implementation of a transition program and a real-world multidisciplinary capstone design experience on each campus.

- A focused number of non-Coalition Colleges of Engineering will have identified a strategy to adopt **SUCCEED**'s innovations.

The core strategies to achieve these goals and reach our milestones are overviewed in the next section.

SUCCEED's Core Strategies

The mission of **SUCCEED** in the next phase of funding is very simple:

SUCCEED Mission: Implement our curriculum model on each of our campuses and facilitate its dissemination beyond the Coalition.

Eight core strategies have been identified to accomplish this mission and are outlined in Table 1. Our central strategy is to enable and empower a **Campus Implementation Team** on each campus to formulate strategic and tactical plans for curriculum renewal and to facilitate their implementation. Through the formation of the **CIT**s, a local leadership team has been established that understands the local needs, is empowered to effect change, and shares the Coalition's vision for curriculum reform.

Table 1. Core Strategies

Strategies	Key Tactics
1. Give responsibility for sustainable and systemic curriculum reform to campus-based teams.	• Establish leadership team (**CIT**) on each campus. • Provide team with Coalition resources and support through Coalition Focus Teams and the A&E Team.
2. Obtain faculty buy-in for our model and empower them to implement it.	• Produce and disseminate faculty development material. • Establish a network-based learning environment. • Give faculty access to assessed and evaluated innovations. • Perform and communicate assessment and evaluation of our model's effectiveness.
3. Install continuous curriculum renewal processes and best practices in academic units.	• Actively disseminate **SUCCEED**'s Curriculum Innovation and Renewal Manual. • Develop, test, and benchmark metrics for student and graduate attributes.
4. Create an active learning environment in which students from diverse backgrounds are able to attain success.	• Substantiate the current research that indicates technology tools significantly enhance the learning of certain groups. • Establish a network-based collaborative environment. • Integrate tested multimedia courseware into curricula. • Develop and test asynchronous learning tools. • Train developers of technology-based learning tools.
5. Coordinate Coalition focus on the scale-up and mainstreaming of first-year-on-campus programs to assist student transition into the University.	• Transport successful Community College Transition programs. • Evaluation existing and test programs Coalition-wide. • Scale up and mainstream test "bridge" programs and expand women and minority peer mentoring programs.
6. Transport and scale up our practice and design products.	• Work with PIs of successful products to actively disseminate innovation. • Promote Coalition-wide links with industry.
7. Actively disseminate our curriculum model and its components beyond the Coalition through focused partnerships.	• Work closely with selected schools (Council of Schools) to implement our curriculum model. • Develop and execute dissemination plans for very best products/processes. • Promote access to **SUCCEED**'s products and processes through the Internet. • Establish partnerships with industry and other Coalitions.
8. Convince the engineering education community of the value of our model and its components.	• Perform ongoing Coalition-wide qualitative assessment. • Continue building a longitudinal database for quantitative assessment. • Research the diffusion of educational innovation.

We believe the eight core strategies listed in Table 1 will lead to implementation of our curriculum model on each of the eight **SUCCEED** campuses and facilitate its dissemination beyond the Coalition. The overview of the strategic plans of the **Dissemination Team** and each of the eight **Campus Implementation Teams** are given in the following sections.

Planning for SUCCEED's Legacy

Closure of the Cooperative Agreement

It is believed that systemic reform is occurring in our colleges of engineering as originally envisioned by the creators of the Engineering Education Coalitions program. As this is the final request for additional support by the NSF, we must ensure that the elements of our curriculum model are fully institutionalized on each campus. To this end we anticipate requesting a no-cost extension for a period of 1 year, and not to exceed 30% of our final year budget. These funds will be used to ensure an optimal execution of our dissemination plan, generating a summative assessment of the impact, orderly completion of our institutionalization plan, and fiscal finalization.

As outlined in our Cooperative Agreement and strategic plan, approximately 90% of the support was designed to install our curriculum model on each of our campuses. Based on conversations with the NSF in early 1999, we shifted a substantial portion of our effort towards dissemination of our innovations to the broader engineering education community. The rest was devoted to our original mission of institutionalization of the processes. This shift in emphasis is part of the rationale for the no-cost extension request. The no-cost extension will, for example, allow us to get on the program and provide workshops to a larger number of professional societies.

We anticipate developing a detailed closeout plan during the summer and early fall and to submit a formal request sometime in the fall.

Year 9 Review

- Surveyed deans of 212 schools that are not part of any coalition nor part of the Council of Schools (although a few were included inadvertently). Received 107 responses.
- Developed marketing materials consisting of a mailer, a long brochure, a short brochure, and a CD-ROM. All materials are integrated on a theme of "Breakthroughs in Engineering Education."
- Upgraded the SUCCEED web site to fit with the overall marketing theme and to be more user friendly and complete.
- Created a new SUCCEED booth for use at conferences that fits with the rest of the SUCCEED theme.
- Plan to mail package consisting of the mailer, long brochure and CD-ROM to all deans, associate deans, and department chairs whose mailing addresses are available through ASEE or another source.
- Hosted the SUCCEED, Foundation, and Gateway "Share the Future II" conference at which representatives from each coalition provided workshops or presentations on their areas of expertise.
- Many workshops from the Share the Future II conference will be presented at the ASEE annual conference in June 2001.

Summary of Deans' Survey

A short survey was sent by email during the summer of 2000 to 212 deans of ABET accredited colleges that are not associated with any coalition and for whom contact information was available. Responses were received from more than half of the schools, most from the dean him- or herself. Preliminary results indicate that at least half of the deans were interested in everything but Bridge Programs, Transfer Students, Statics, and ViMS. The SUCCEED expertise areas that received the most interest were the following (number of responses of 107 in parentheses):

1. Teaching Effectiveness (97)
2. Outcomes Assessment (92)
3. Teaching with Technology (87)
4. Employer Feedback (85)
5. Multidisciplinary Design (84)
5. Freshman Year Experience (84)
7. Evaluating and Rewarding the Teaching Scholarship (83)
8. Preparing for ABET (78)
9. Distance Learning Tools and Techniques (77)
9. Formulating an Effective Faculty Development Program (77)

The deans were asked how they would prefer to be contacted about the areas about which they expressed an interest. Two thirds (74) preferred email (possibly an artifact of the way the survey was delivered) followed by the Web (52) and CD-ROM (52). Fewer preferred being contacted

by regular mail (34), workshops on campus or at professional meetings (21 and 20 respectively), a visit from SUCCEED subject experts (19). Above all, they did not want to be telephoned. Sixty-six deans indicated that they were interested in developing a relationship with SUCCEED to learn more about the items that they had checked.

Strategic Plan for Year 10

The Year 10 dissemination plan takes into account the feedback from the deans, the availability of SUCCEED personnel to provide workshops or other services, and the need to develop or refine some concepts into viable workshops. It consists of providing funding to project PIs to create appropriate workshops, continual refinement and updating of the web site, regular email and other communication with deans and others about topics of interest to them, provision of workshops and technical sessions at the major disciplinary conferences, and provision of workshops at current Council of Schools sites that would be open to all interested parties.

1) *Funding to Project PIs to develop workshops.* Funding would be made available for summer 2001 salary or other appropriate compensation to PIs who have a project of interest and would be willing to develop a workshop for delivery at an appropriate conference or CoS site. Each PI group must agree to deliver this workshop at least once during year 10 to an appropriate engineering forum. Some potential workshops are noted below. Applications will be taken for minigrants to develop or refine other topic areas within the SUCCEED core topics.
   - Joseph Hoey and El Nault for Outcomes assessment
   - Howard Phillips for Freshman engineering programs best practices
   - Hands on labs (Hoit, Goff, Ohland, Ollis)
   - Proactive Mentoring (Lasser)
   - Clemson Laptop Program (Sherrod)

2) *Email communication.* The deans who responded to our survey indicated that email was the primary way that they prefer to be informed about SUCCEED activities. A database was created that included their email addresses, contact people if different, and areas of interest. This database can provide the foundation for a database of anyone who indicates interest in a particular topic. As workshops are scheduled at conferences and CoS locations, interested parties will be contacted personally by email to inform them of the upcoming workshops. Announcements will also be made where possible on the appropriate ASEE and other disciplines' broadcast listservs.

3) Joint coalition workshops, similar to the 2001 SUCCEED/Foundation/Gateway and ASEE conferences to be held at the major disciplinary conferences as outlined below. These workshops will either be held as a pre-conference activity or as part of an appropriate technical session. Travel for presenters will be paid from the DT budget. The External Advisory Board and the Deans Council will help identify priorities from among the following options:

Conference	Place	Date	Point person	Topics
FIE (electrical)	Reno, NV	10/10-13/01	Cathy/Carl	Alt ASEE
ASCE (civil)	Houston, TX	10/10-13/01	Rich/Rebecca	FD
AIChE (chemical)	Reno, NV	11/4-9/01	Tim	TBD
ASME (mechanical)	NYC	11/11-16/01	Carl	TBD
SIGCSE (computer sci.)	Covington, KY	2/26-3/2/02		
Engineering Deans Institute	Sanibel Island, FL	3/7-10/20	Tim	FD(mentoring faculty)
IIT (industrial)		May 02	Jack?	TBD
SUCCEED	UF	March 02	Marc	TBD
ASEE		June 02	Carl	TBD

4) *Workshops to be held at Council of Schools Sites*. Three Council of Schools members will be asked to host a workshop on a topic of interest to them and to allow others to attend. The best locations (rated by ease of transportation) for these workshops among current CoS members are Virginia Commonwealth (Richmond), University of Louisville, and University of Central Florida. The best locations from a CoS relationship perspective are University of Central Florida, Mississippi State University, and Southern Illinois University. However, travel to the latter two is problematic. These workshops will be held either as one day meetings or using a two day format similar to SUCCEED guidance team meetings. Host sites will be asked to provide for all logistical arrangements. Honoraria and travel for workshop presenters will be paid from the DT budget.

5) *Council of Schools*. In addition to the workshop activities outlined above, travel funding will be provided to Dr. Coleman for follow up activities with the remaining Council of Schools members.

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Vision beyond SUCCEED
Clemson will have institutionalized SUCCEED-fostered innovations, including:

◆ *Faculty Development.* Frequent workshops and seminars will help faculty improve teaching effectiveness; participation in national and regional teaching improvement programs will be supported; outstanding teaching will be recognized and rewarded.

◆ *Outcomes Assessment.* Systematic and effective outcomes assessment will support regular program review leading to continuous curriculum improvement. Programs will have clear and regularly updated objectives based on input from all major constituencies.

◆ *Student Transitions.* Mentoring and counseling programs will support the success of all entering students. Freshman courses will be explicitly linked, and include meaningful engineering problem solving and design. Curricula will provide key workplace skills, include real-world experiences, and engage students in multidisciplinary activities.

◆ *Technology Based Curriculum Delivery.* Faculty will routinely use computer presentation and networked collaborative tools to enrich the learning environment. Asynchronous teaching methods will make courses available to distant learners such as students on co-op assignments, students preparing for transfer, and graduates pursuing life-long learning.

Core Strategies

◆ CIT objectives and tasks must be consistent with the Strategic Plan of the College;

◆ SUCCEED activities must leverage university resources and initiatives wherever possible;

◆ Clemson programs must support the SUCCEED goals and deliverables.

Clemson CIT Faculty Development Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Integrated Freshman Year forum	- Active learning workshop - Asynchronous Learning seminar
Year 7	- Orientation to Teaching Workshop - Topical seminar/faculty forum - Faculty Teaching Fellow - Topical workshops (2)	- Topical seminar/faculty forum - Attendance at NETI
Year 8	- Orientation to Teaching workshop - Faculty Teaching Fellow	- Topical seminar/faculty forum - Attendance at NETI
Year 9	- Orientation to Teaching Workshop - Faculty mentoring program established	- Topical seminar/faculty forum - Attendance at NETI
Year 10	- Orientation to Teaching Workshop - Faculty mentoring award established	- Topical seminar/faculty forum - Attendance at NETI
Year 11		- Attendance at NETI - Orientation to Teaching Workshop - Topical workshops/seminars/forums

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Clemson CIT Outcomes Assessment Institutionalization Timetable

	SUCCCEED Sponsored Activity	University, College, or Program Sponsored Activity
Year 6	— Develop engineering alumni survey inserts to gather OA data — Develop employers of engineering alumni survey to gather OA data, and conduct employer survey — Develop engineering program evaluation and assessment processes for each BS engineering program	— Conduct alumni survey — Program faculty participate in development of employers of engineering alumni survey to gather OA data — Program faculty participate in development of engineering program evaluation and assessment processes for each BS engineering program, and application of processes
Year 7	— Refine engineering and computer science alumni survey inserts to gather OA data — Refine employers of engineering and computer science alumni survey to gather OA data, and conduct employer survey — Refine engineering program evaluation and assessment processes for each BS engineering program — Develop best OA indicators database — Refine the Curriculum Innovation and Renewal Process in two test applications	— Conduct alumni survey — Program faculty participate in refinement of employers of engineering and computer science alumni survey to gather OA data — Program faculty participate in refinement of engineering program evaluation and assessment processes for each BS engineering program, and application of processes
Year 8	— Conduct survey of employers of engineering and computer science alumni to gather OA data — Refine best OA indicators database — Apply the refined Curriculum Innovation and Renewal Process in two programs	— Conduct alumni survey — Ongoing use of evaluation and assessment processes in each BS engineering/computer science program. — Ongoing curriculum innovation and renewal in two BS engineering/computer science programs using the Curriculum Innovation and Renewal process
Year 9	— Conduct survey of employers of engineering and computer science alumni to gather OA data — Refine best OA indicators database — Apply the refined Curriculum Innovation and Renewal Process in two programs	— Conduct alumni survey — Ongoing use of evaluation and assessment processes in each BS engineering/computer science program. — Ongoing curriculum innovation and renewal in four BS engineering/computer science programs using the Curriculum Innovation and Renewal process
Year 10	— Conduct survey of employers of engineering and computer science alumni to gather OA data — Apply the refined Curriculum Innovation and Renewal Process in two programs	— Conduct alumni survey — Maintain best OA indicators database — Ongoing use of evaluation and assessment processes in each BS engineering/computer science program. — Ongoing curriculum innovation and renewal in six BS engineering/computer science BS program using the Curriculum Innovation and Renewal process
Year 11		— Conduct alumni survey — Conduct survey of employers of engineering and computer science alumni to gather OA data — Maintain of best OA indicators database — Ongoing use of evaluation and assessment processes in each BS engineering/computer science program. — Ongoing curriculum innovation and renewal in each BS engineering/computer science program using the Curriculum Innovation and Renewal process

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Clemson CIT Student Transitions Institutionalization Timetable

	ACTIVITIES	
	SUCCEED-sponsored	**College or Dept.- sponsored**
Year 7	• Revise ENGR 101 • Revise ENGR 120 • Initiate peer-mentoring prog. • MultiDiscip. Design course • Expand international/co-op	• Assessment of international/co-op efforts • Assessment of peer-mentoring program
Year 8	• Complete ENGR 101 rework • Complete ENGR 120 rework • FIRST CLASS concept developed • Expand MDD course • Initiate integrated first year program • Establish internal transitions framework	• ENGR instructor workshop (1) • Storage space procured for ENGR class materials • Mentor workshops (2) • Initiate assessment of ENGR rework • Continue assessment of international/co-op efforts • Evaluate MDD progress
Year 9	• Complete ENGR manuals & use in classes • FIRST CLASS program piloted • Continue integrated first year activity • Establish MDD at final level • continue internal transition program development	• ENGR instructor workshop (2) • Space acquired for freshman engineering labs and courses • Mentor workshop • Continue assessment of ENGR rework and international/co-op • FIRST CLASS assessment
Year 10	• Complete integrated first year program design • Develop MDD "Instruction Manual" to aid future instructors • FIRST CLASS program development • Use ENGR manuals in classes	• ENGR instructor workshops (2) • Begin baseline purchase of items for ENGR design activities • Mentor workshop • Continue FIRST CLASS assessment and development • Initiate assessment of integrated first year
Year 11		• ENGR instructor workshops(2) • Continue purchase of items for ENGR design activities • Institutionalize FIRST CLASS • Mentor workshops (2) • Continue assessment of ENGR rework • Continue assessment of integrated first year • Continue assessment of international/co-op • Continue assessment of peer-mentoring

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Clemson CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED-sponsored Activity	College/Department-sponsored Activity
Year 6	• Universal computing environment pilot study • Distance collaboration for student projects • Technical support for ALN	• Universal computing environment pilot • Evaluation of course management tools • Initial classroom trials of course management tools • Workshop on WebCT
Year 7	• Universal computing environment (laptop) pilot study • Distance collaboration support • Technical support for ALN • Sharable ALN modules • Develop mentor program • Develop student assistant program (STARS) • Streaming media workshop	• Universal computing environment pilot • Develop training materials for course management tools • Cultivate user groups • Support of course management tools • Workshop on WebCT • STARS program • Support course management tools
Year 8	• Upgrade Ed. Technology Lab • Laptop pilot study continues • Digital media workshop • Assess training needs for TBCD tools for group project activities • Sharable ALN modules	• Laptop pilot support • Promote faculty use of Ed Tech Lab • Coordinate faculty training with DCIT • Support user groups • Support course management tools • STARS program
Year 9	• Laptop Pilot study continues • Topical workshops • Upgrade Ed Tech Lab • Support faculty development of ALN applications	• Laptop pilot support • Improve computing facilities • Promote faculty use of Ed Tech Lab • Support course management tools
Year 10	• Final laptop pilot year; planning for laptop mandate • Topical workshops • Contribute to "best-practices" in ALN, ed tech use	• Final laptop pilot year • Implement wireless networking • Upgrade Ed. Technology Laboratory • Expand use of ALN • Expand/enhance smart classrooms • Support course management tools
Year 11		• Educational Technology Laboratory • Laptop mandate implemented • Smart classrooms expanded • Provide course management tools • Support user groups • Offer topical workshops on TBCD

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Florida A&M University—Florida State University CIT Strategic Plan Overview

Vision Beyond Succeed

Faculty Development – As we go beyond year 10, the College will assume the responsibility for continued support. We trust that in the 8-10 transition years a sufficient number of faculty will have been involved with faculty development and innovative teaching to ensure that College support will be a natural and expected outcome. A collaborative effort has been initiated, and will continue, with the Technology Based Curriculum Delivery team members to strengthen faculty support and development and to facilitate the infusion of technology in teaching and learning activities.

The elements of our program for year 10 and beyond include: 1) a clearly assigned administrative responsibility for faculty development at the Associate Dean level, a designated FD coordinator for the College who reports to the designated administrator, and resources to support FD activities. The FD coordinator will also coordinate activities with the TBCD group; 2) ongoing learning opportunities for all engineering faculty; 3) rewards and incentives for effective and innovative teaching.

Outcomes Assessment – By Year 10, each BS program will have stabilized its assessment scheme. The CIT OA team will carry out "Alumni Performance Surveys" for all BS programs in Year 10. Thereafter, an OA coordinator will continue beyond Year 10 to coordinate these surveys for all BS programs. By Year 10, all BS program curriculum committees will have had adequate training and experience in the use of "student learning portfolios." Beyond Year 10, an OA coordinator will hold regular seminars to update expertise in the use of student learning portfolios.

Student Transitioning – By the end of Year 10, the first year course will have become a standard component of all BS programs. Multi-disciplinary design courses employing contemporary technology-based tools and industry support will be available in all BS programs, and will be coordinated by the Office of Research and Industry Services of the college. Mentoring schemes will have been built into the BS programs in meeting EC 2000.

Technology-Based Curriculum Delivery – A TBCD team in collaboration with an FD team will continue to work to strengthen and facilitate faculty in infusing technology into teaching and learning activities. An annual hands-on "TBCD-FD Update Workshop" will be held every summer as a regular part of FAMU-FSU culture. This annual workshop will be an item of SUCCEED implementation that has become institutionalized.

Faculty will be given suitable recognition (through, for example, feature articles in a FAMU-FSU TBCD-FD Newsletter and travel cost supplements) for using technology as a means of achieving teaching excellence and learning effectiveness. As a result, faculty should regularly use technology to facilitate and manage collaborative learning environments in which interdisciplinary instruction and teamwork are institutionalized.

Over-Arching Strategy

Faculty Development and TBCD shall be directed at faculty and staff in their capacity as "shop-floor specialists" in the engineering education process, while Outcomes Assessment and Student Transitioning shall be directed at department chairs, associate department chairs, and curriculum committees in their capacity as "product quality coordinators".

To effect institutionalization, continuous upgrading of human resources shall be given a high premium. This means that training schemes shall be provided as a component of most implementation tasks. Accordingly, numerous training workshops, along with recordings of workshop components, shall be provided. The recordings shall be in the form of 30-minute clips on the Web. Such clips should be especially useful to those unable to attend the workshops.

FAMU-FSU CIT Faculty Development Institutionalization Timetable

	SUCCEED Sponsored Activity	College or Dept. Sponsored Activity
Year 8	Annual FD Workshop (Summer) Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year) Participation in FD CFT programs (all year)	Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year)
Year 9	Annual FD Workshop (Summer) Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year) Participation in FD CFT programs (all year)	Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year)
Year 10	Annual FD Workshop (Summer) Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year) Participation in FD CFT programs (all year)	Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year)
Year 11		Annual FD Workshop (Summer) Topical workshop series (Fall & Spring) Provide incentives/awards Faculty participation in FD conferences (all year) Participation in FD CFT programs (all year)

FAMU-FSU CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED Sponsored Activity	College or Dept. Sponsored Activity
Year 8	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs
Year 9	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs
Year 10	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs	Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs
Year 11		Centralized Alumni Performance Surveys Training in use of portfolio for assessing "Student Learning Tasks" Faculty participation in OA conferences Participation in OA CFT programs

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FAMU-FSU CIT Student Transitions Institutionalization Timetable

Year	SUCCEED Sponsored Activity	FAMU-FSU Sponsored Activity
8	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas
9	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas
10	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas
11	•	• ST workshops • Faculty course and lab development support • Support faculty visitations to industry for sustaining funding and recruiting industry mentors for multi-disciplinary design courses • Support faculty travel to conferences and workshops on ST focus areas

FAMU-FSU CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED Sponsored Activity	College or Dept. Sponsored Activity
Year 8	TBCD Workshops Staff for technology support Incentives/awards	Inventory of best practices FAMU-FSU TBCD-FD newsletter Start of business partnership for videoconferencing distance learning
Year 9	TBCD Workshops Staff for technology support Incentives/awards	Inventory of best practices FAMU-FSU TBCD-FD newsletter Start of business partnership for videoconferencing distance learning
Year 10	TBCD Workshops Staff for technology support Incentives/awards	Inventory of best practices FAMU-FSU TBCD-FD newsletter Start of business partnership for videoconferencing distance learning
Year 11		TBCD Workshops Staff for technology support Incentives/awards Inventory of best practices FAMU-FSU TBCD-FD newsletter Start of business partnership for distance learning

Vision Beyond SUCCEED

Georgia Tech's vision for Year 10 and beyond in the four focus areas of SUCCEED can be characterized as follows.

- *Faculty Development* – An on-going series of workshops and activities will be available for all Georgia Tech faculty to facilitate their continued development in all aspects of their academic careers.
- *Outcomes Assessment* – Georgia Tech will have an outcomes-based assessment program for all its educational programs, both graduate and undergraduate, involving an annual evaluation of assessment activities and a five year comprehensive program review.
- *Student Transitions* – Georgia Tech will have available an array of programs to assist all students with the initial transition to campus life, on-going transitions during their program of study, and transition to their post-graduation careers.
- *Technology-Based Curriculum Delivery* – Faculty productivity in the use of educational technology will be more broad-based, and student expertise in the use of technology-based learning materials will be substantially increased.

Over-Arching Strategies

The strategic plans, objectives, and assessment targets for the four focus areas are outlined in the following four sections. While the areas differ in their focus, they have three common elements. They describe activities that:

- will occur at least once a year, if not more frequently;
- build upon on-going efforts at Georgia Tech; and
- complement activities within the other focus areas.

Georgia Tech CIT Faculty Development Institutionalization Timetable

	SUCCEED-Sponsored Activities	*Institution-Sponsored Activities*
Years 6-7	- Effective Teaching Workshops - Teaching w/Technology Workshop - Mentoring Seminars - Partnership w/CETL - GE Foundation Program	- Effective Teaching Workshops - Teaching w/Technology Workshop - Mentoring Seminars - Partnership w/CETL - GE Foundation Program
Years 8-10	- Effective Teaching Workshops - Other FD Workshops - Mentoring Seminars/Program - COE FD Coordination by Associate Dean - CETL FD Steering Group - Intra-/Inter-Campus Network	- Effective Teaching Workshops - Other FD Workshops - Mentoring Seminars/Program - COE FD Coordination by Associate Dean - CETL FD Steering Group - Intra-/Inter-Campus Network
Year 11		- Effective Teaching Workshop & Other Workshops as Designed by CETL - COE FD Coordination by Associate Dean - Intra-/Inter-Campus Network - Mentoring Seminars

Georgia Tech CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED-Sponsored Activities	*Institution-Sponsored Activities*
Years 6-7	- GT Eng. Educ. Assess. Seminar - Institute Assessment Director	- GT Eng. Educ. Assess. Seminar - Institute Assessment Director
Years 8-10	- GT Eng. Educ. Assess. Seminar - Integrated, campus assessment effort - Assess pre-/non-engineering courses - Create psychometric profile - Establish common data sets	- GT Eng. Educ. Assess. Seminar - Integrated, campus assessment effort - Assess pre-/non-engineering courses - Create psychometric profile - Establish common data sets
Year 11		- Integrated, campus assessment effort - Assessment administrative structure/oversight - Systematic data-gathering - GT Assessment Seminar

Georgia Tech CIT Student Transitions Institutionalization Timetable

	SUCCEED-Sponsored Activities	*Institution-Sponsored Activities*
Years 6-7	- CHALLENGE Broadened - Dual Degree Transition Program - Extended Fr. Transition Prog. Designed - Transition Performance Stds Created - Pilot Design Competition	- CHALLENGE Broadened - Dual Degree Transition Program - Extended Fr. Transition Prog. Designed - Transition Performance Stds Created - Pilot Design Competition
Years 8-10	- Campus-wide CHALLENGE - Extended Fr. Transition Prog. - Freshmen Design Course - Transition Performance Measured - Dual Degree Transition Program	- Campus-wide CHALLENGE - Extended Fr. Transition Prog. - Freshmen Design Course - Transition Performance Measured - Dual Degree Transition Program
Year 11		- Campus-wide CHALLENGE - Extended Fr. Transition Program - Freshmen Design Course - Dual Degree Transition - Transition Performance Evaluation

Georgia Tech CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED-Sponsored Activities	*Institution-Sponsored Activities*
Years 6-7	- Video-conferencing Facility - ECE Technology Group meets weekly - Workshop on Teaching w/Technology - Student developed animation applets - Acquired Infrastructure for creating streamed media modules	- Video-conferencing Facility - ECE Technology Group meets weekly - Workshops on Teaching w/Technology - Java course & development for education - Initiatives for using streamed media in distance education
Year 8	- Video-conferencing Facility - ECE Technology Group expanded - Initiate Tutoring Modules (streamed) - Workshop on Teaching w/Technology - Educate/train graduate assistants - Id/train more technology leaders - Link with other universities	- Intra-campus Videoconferencing - Technology Group expanded - Pilot Usage of Tutoring modules - Workshops on Teaching w/Technology - Educate/train graduate assistants - Id/train more technology leaders - Engineering program with south Georgia universities
Year 9	- Video-conferencing Facility - Technology Group expanded - Easy Production of Tutoring Modules - Workshop on Teaching w/Technology - Data on technology impact in courses - Educate/train graduate assistants - Id/train more technology leaders - Link with other universities	- Intra-campus Videoconferencing - Technology Group expanded - Wider Usage of Tutoring modules - Workshops on Teaching w/Technology - Data on technology impact in courses - Educate/train graduate assistants - Id/train more technology leaders - Engineering program with south Georgia
Year 10	- Video-conferencing Facility - Workshop on Teaching w/Technology - Data on streamed tutoring impact - Link with other universities	- Intra-campus Videoconferencing - Workshops on Teaching w/Technology - Data on technology impact in courses - Engineering program with south Georgia
Year 11		- Intra-campus Videoconferencing - Technology Group Meetings - Workshops on Teaching w/Technology - Evaluate data on technology impact - Expand education/training of faculty and graduate assistants - Intra-/Inter- University Network Group

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1. Vision for Year 10 and Beyond

The CIT will guide the implementation of SUCCEED's vision on the campus of North Carolina A&T State University. The primary goal of the CIT will be to maximize the implementation of SUCCEED's Strategic Plan on the NCA&T campus and to ensure its continuation after SUCCEED funding ends. The CIT Leader will report to the Director of SUCCEED and the Dean of the college of engineering at NC A&T.

The proposed membership of the CIT is - Marwan Bikdash, Associate Professor, Electrical Engineering; Samuel Owusu-Ofori, Professor, Mechanical Engineering; Kenneth Roberts, Assistant Professor, Chemical Engineering; and Sanjiv Sarin, Professor, Industrial Engineering (Team Leader). The team members represent a diversity of academic disciplines, and teaching and research interests. All members are committed to educational programs and enjoy the confidence of the dean of the college.

The work of the CIT will be guided by the vision of SUCCEED, and the mission of NC A&T. The CIT will be an active and contributing partner in the ongoing activities of SUCCEED. Furthermore, the results of NC A&T's CIT will be evaluated by the faculty once a year. This evaluation, with approval of the SUCCEED Director; will be used to make any needed modifications in the strategic and tactical plans of the CIT. Specific projects to be undertaken are described in this proposal.

At the conclusion of SUCCEED, the CIT will be transformed into a permanent organization at NCA&T as a college-wide team consisting of members drawn from each of the programs in the college as well as experts from other disciplines on the campus. The Associate Dean for Academic Affairs will lead this team. The Dean's office, federal and state grants, and corporate donations will provide resources for this team. The mission of this team will be *to enhance the quality of the undergraduate engineering student experience* through the following broad strategies:

(i)   Monitor freshman and transfer student abilities and needs

(ii)   Nurture a first year experience that enhances learning and promotes retention

(iii)   Promote collaborative and active learning strategies in the classroom

(iv)   Facilitate multidisciplinary design in the senior year across all majors

(v)   Encourage the use of appropriate technology for assisting student learning

(vi)   Assist programs with curricular reform based on outcomes assessment

(vii)   Enhance the orientation program for new faculty

(viii)   Formalize faculty development programs for mid-career professors

(ix)   Encourage faculty to pursue educational research

(x)   Foster an environment for faculty teamwork

2. Institutionalization Timetable
(Numbers in parentheses refer to tasks described later in section 3)

2.1 Year 10 (September 1, 2001 – August 31, 2002)

Corporate Sponsored Activities	SUCCEED Sponsored Activities	University/College Sponsored Activities
• Establish freshman study groups and mentoring program (3.1.3)	• Summer bridge program for entering students (3.1.1)	• Study Calculus I Placement policies and student performance (3.1.2) • Professional skills seminars (3.1.5)
• Multidisciplinary design experience in senior engineering courses (3.2.1)	• Formal Co-op/internship program (3.2.2)	• Professional development of students through AGGIENEERS (3.2.3)
• Develop and maintain a library of current publications (3.3.9)	• Brown bag lunch seminars (3.3.2) • Workshops on best practices in teaching and learning (3.3.6)	• Expanded orientation program for new faculty (3.3.1) • Assistance with placing course materials online (3.3.3) • Academy of Teaching and Learning workshops (3.3.4) • Training on Registration System (3.3.5) • Encourage pursuit of educational research (3.3.7) • Maintain list of faculty development topics (3.3.8)
• Increase student performance on the FE Exam (3.4.1)	• Refine measures for "soft outcomes" (3.4.3) • Assessment of other projects (3.4.4)	• Internal evaluation of self studies (3.4.2)

2.2 Year 11 (September 1, 2002 – August 31, 2003) and Beyond

Corporate Sponsored Activities	Federal Grants Supported Activities	University/College Sponsored Activities
	• Introduce research in Freshman Engineering course (3.1.4)	• Professional skills seminars (3.1.5)
• Multidisciplinary design in two additional engineering courses (3.2.1) • Integration of Co-op/internship program with Senior Design Course (3.2.1, 3.2.2)	•	• Professional development of students through AGGIENEERS (3.2.3)
•	•	• Brown bag lunch seminars (3.3.2) • Academy of Teaching and Learning workshops (3.3.4) • Workshops on best practices in teaching and learning (3.3.6) • Encourage pursuit of educational research (3.3.7) • Maintain list of faculty development topics (3.3.8)
• Monitor student performance on the FE Exam (3.4.1)	• Assessment of other projects (3.4.4)	• Internal evaluation of self studies (3.4.2)

3. Project Statements

3.1 Freshman Experience

Studies of freshman programs in general, and engineering programs in particular have established the importance of the freshman year experience. Freshman engineering program that closely monitor the freshman year report higher levels of student success in terms of learning, performance in higher-level classes and overall retention and graduation rates. This project is aimed an implementing and institutionalizing some of the best practices recommended by SUCCEED and other education coalitions. This project will build on the successes of earlier mentoring, tutorial and bridge programs in mathematics, science & engineering.

The specific tasks to be performed under this project are listed below.

3.1.1. Offer a 4-week summer bridge program aimed at preparing entering students for college. Activities will include campus orientation, interactions with faculty and upper-class students, identification of academic weaknesses and coaching.

3.1.2. Study past data on Math SAT, High School GPA and Campus Math Placement Test to evaluate adequacy of current college policy on placing students in Calculus I. A review of past data has revealed a high failure rate on first-time enrollees in Calculus I. However, the reasons are not well understood. It is not clear whether student performance in Calculus I is the result of improper placement of students in the course (based on current SAT and Math Placement test scores). This is an important question that demands attention.

3.1.3. Establish freshman student study groups to promote effective learning. Each study group will be associated with an upper-class mentor. Efforts will be made to locate student groups in common dormitories. Student groups will be registered in the same sections of freshman courses. Freshman instructors will be encouraged to maintain these groups for course assignments and projects.

3.1.4. The Introduction to Engineering course familiarizes freshman students to the design process. The course content will be examined with respect to abilities of entering students. An attempt will be made to include the research process in this course. For example, students will be matched with an ongoing research project to provide an appreciation for the need for research in engineering.

3.1.5. Invite speakers from the university's Center for Student Success – this recently created center offers seminars on student test taking skills, time management, stress management, etc.

3.2 Professional Practice

The goal of this project is to enhance the preparation of students for engineering practice.

The specific tasks to be performed under this project are listed below.

3.2.1. Institute a sequence of courses in the college of engineering to promote multi-disciplinary design. The current Introduction to Engineering course introduces freshman students to the design process. Students in this course also work in small teams to apply the design process. Proposed work includes the creation of a sophomore level elective course using a virtual laboratory concept. Students in one discipline will perform experiments in educational and research laboratories of various disciplines to gain an appreciation of the value of inter-disciplinary research in engineering practice. Students will be encouraged to form inter-disciplinary teams to compete in national and regional design competitions. Finally, a senior level design course will be created to promote multidisciplinary design.

3.2.2. Establish a formal co-op/internship program in the college of engineering in conjunction with the university's Co-op Office. Currently, students participate in the university's co-op/internship program independently and without any formal association with their respective academic departments. This task will define a process to select, advise, and scrutinize co-op/internship placements. Faculty members will be assigned to monitor individual students to ensure that the experience results in an enhancement of professional skills. Furthermore, students will be encouraged to identify and define a specific problem at the sponsoring company that could serve as a basis for their senior design project.

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3.2.3. Increase professional development activities for students that involve the returning of alumni to discuss the real world employment environments (AGGIENEERS program). Furthermore, professionals from local industry will be invited for seminars and panel discussions aimed at improving the professional abilities such as project management, interpersonal skills, teamwork, global trade, etc.

3.3 Faculty Resources

This project aims to provide a consolidated "one-stop-shop" for assisting and enabling instruction and advisement. Faculty in the college of engineering will be able to seek answers to specific questions and obtain guidance to support their academic activities. Faculty Development programs will be recognized as a key component that not only prepares new faculty to assume their responsibilities, but also provides opportunities to senior faculty for improving their teaching practice. Technology Based Curriculum Delivery will work closely with faculty development to ensure that proven methods of distance education are disseminated to the faculty. This will be achieved by working closely with the recently created Center for Distance Learning at NC A&T.

The specific tasks to be performed under this project are listed below.

3.3.1. The university offers a two-day orientation program for all new hires. This task will develop a complementary half-day orientation program specifically for engineering faculty. This will introduce faculty to specific policies of the engineering programs, outcomes assessment activities within the college, research programs under way and opportunities for collaborating with established researchers, procedures for promotion and tenure, etc.

3.3.2. Reactivate the monthly brown bag lunch seminars focusing on topics of interest top faculty. This will be based on the Georgia Tech model.

3.3.3. Provide assistance with placing course materials on the university's online course platforms (Blackboard and e-college).

3.3.4. Encourage participation of engineering faculty in the activities of the university's Academy for Teaching and Learning.

3.3.5. Facilitate training on the use of the university's registration system.

3.3.6. Organize workshops on best practices in teaching and assessment, for example, active and collaborative learning, practice based learning, integration of ethics in the curriculum, classroom management, etc.

3.3.7. Encourage faculty to pursue educational research and lobby the administration to recognize and reward such research.

3.3.8. Maintain an active list of faculty development topics

3.3.9. Develop and maintain a library of current publications on learning styles and theories and assessment.

3.4 Outcomes Assessment

The objectives of this project are to support on-going efforts in the engineering programs to assess student abilities as well as to evaluate the progress of other projects. The mission of this project is to assure that outcomes assessment is an important and integral part of the administration of all the undergraduate academic programs within the COE. The assessment results will be the primary input to program curriculum revision, resource allocation, enrollment management, and other processes at the college.

The specific tasks to be performed under this project are listed below.

3.4.1. Increase significantly the number of students who take and pass the Fundamentals of Engineering examination. For over fifteen years, students in the college have been required to take the Senior Exam – it was modeled after the FE exam and was intended to provide preparation and screening for the FE exam. However, the Senior Exam has not fulfilled its promise and the college faculty has recently eliminated this exam as a graduating requirement. Instead, there is an interest in requiring students to take the FE exam. This task will recommend specific strategies to promote performance on the FE exam.

3.4.2. Offer internal evaluation and constructive criticism of progress of individual programs in outcomes assessment to support accreditation requirements of SACS and EAC/ABET.

3.4.3. Refine methods for evaluating "soft outcomes" such as the ability to engage in life long learning, teamwork, understanding global and societal impact of engineering solutions, etc.

3.4.4. Define measures to assess progress of the other projects and collect data to evaluate the degree to which project objectives have been achieved.

Vision Beyond SUCCEED

NC State University's vision for Year 10 and beyond in each of the four focus areas of SUCCEED can be characterized as follows:

- *Faculty Development.* NC State will have a comprehensive faculty development program that is fully supported by the University, the College of Engineering, and COE departments. All faculty will have access to the program and be encouraged to participate in its activities.

- *Outcomes Assessment.* NC State will have a comprehensive assessment plan for continuous improvement for each of its academic programs. Our goal is to have one set of procedures that meets both internal and external needs.

- *Student Transitions.* NC State will provide a wide range of programs to assist all students with transitions to campus, during their academic programs, and into the workforce or graduate school.

- *Technology-Based Curriculum Delivery.* NC State will have in place an infrastructure which builds upon and leverages existing college and university information technology infrastructure and resources; is scalable such that it can grow as faculty and student demand grows, is robust and maintainable, and is easy to use by both faculty and students.

Over-Arching Strategy

The strategic plans, objectives and assessment targets for the four focus areas are outlined in the four individual plans. Although they vary in focus, they have several common elements. Each plan:

- builds upon on-going and related efforts at NC State;
- describes activities that occur at least once per year; and
- integrate a broad base of faculty in sponsored activities

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NC State CIT Faculty Development Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Orientation to Teaching Workshop - Support for professional development - FD Coordinator for COE	- One teaching workshop (2.5 day general)
Year 7	- COE-Teach (lunchtime discussion) - Topical workshop - Support for professional development - FD Coordinator for COE	- One teaching workshop (1-day refresher) - Orientation to Teaching Workshop
Year 8	- Mentorship programs - Support for professional development - Support for course/curriculum change - FD Coordinator for COE	- Assignment of administrative responsibility for FD - One teaching workshop (topical) - Orientation to Teaching Workshop - COE-Teach - Development of uniform teaching assessment & evaluation procedure
Year 9	- Mentorship programs - Support for professional development - Support for course/curriculum change - FD Coordinator for COE	- One teaching workshop - New Faculty Orientation Workshop - COE-Teach - FD Coordinator for COE - Implementation of uniform teaching assessment & evaluation procedure
Year 10	- Mentorship programs - Support for course/curriculum change - FD Coordinator for COE	- General teaching workshop - Orientation to Teaching Workshop - COE-Teach - FD Coordinator for COE - Topical workshop - Increased support for professional development (dept. level) - Support for course/curriculum change - Incorporation of teaching assessment & evaluation procedure in review processes for promotion, tenure, and raises
Year 11		- General teaching workshop - Orientation to Teaching Workshop - COE-Teach - FD Coordinator for COE - Topical workshop - Mentorship programs - Increased support for professional development (dept. level) - Support for course/curriculum change - Incorporation of teaching assessment & evaluation procedure in review processes for promotion, tenure, and raises

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NC State CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Initiate ECE Curriculum Renewal(CR) - Support faculty attending workshops on CR and OA - Assist other departments with curricular renewal - Update graduating senior and alumni surveys to better reflect ABET EC2000 - Work with CFT to achieve SUCCEED goals	- ECE Curriculum Renewal - Support Employer Meetings - Support ECE Alumni Survey
Year 7	- Topical workshop on OA in COE Teach - Workshop for faculty on CR and use of the manual - Review and update employer survey - Work with OA CFT to establish coalition-wide assessment tools - Support faculty attending OA CFT workshops - Initiate the design of COE and ECE Honors Program - Complete the design of ECE BS/MS Program	- Continue ECE Curriculum Renewal - Obtain faculty support for new ECE Curriculum - Conduct updated Sophomore, Graduating Senior, Alumni and Employer Surveys - Establish college-wide OA team with representation from each department - Topical workshops on Outcomes Assessment as requested by departments
Year 8	- Work with CFT on the development of new OA tools - Support faculty attending national and regional OA workshops/conferences - Provide assistance to departments on OA & CR through bimonthly meetings of OA Team - Workshop for departmental OA Team - Complete design of COE and ECE Honors Program - Survey faculty to determine level of understanding of and involvement with assessment issues - Develop methodology for reporting college assessment process and feedback to stakeholders - Support new ECE curriculum implementation	- Document current OA methods in COE - Assist departments in setting up a process for continuous oversight of CR/OA process - Assist departmental OA coordinators in developing assessments plans - Review feedback from Sophomore, Graduating Senior, Alumni and Employer Surveys - Conduct Sophomore and Graduating Senior Surveys - Promote faculty buy-in & support for OA and CR - Evaluate progress in achieving our objectives
Year 9	- Work with OA CFT on the development and deployment of new OA tools - Support faculty attending national and regional OA workshops/conferences - Workshop for faculty and staff - topic determined by survey feedback - Develop quality guidelines for the college for assessing success of students in the college	- Develop a method for institutionalizing OA systems - Develop a method for institutionalizing OA feedback to stakeholders into the CR process - Review feedback from Sophomore, Graduating Senior, Alumni, and Employer Surveys - Conduct Sophomore and Senior Surveys - Identify needs for OA person in departments - Implement uniform teaching assessment & evaluation procedure - Provide assistance to departments for course/curriculum continuous improvement - Evaluate progress in achieving our objectives
Year 10	- Work with OA CFT on the development and deployment of new OA tools - Support faculty attending national and regional OA workshops/conferences - Workshop for faculty and/or staff	- Institutionalize OA systems and process for feedback to stakeholders - Review feedback from Sophomore and Graduating Senior Surveys - Conduct Sophomore, Graduating Senior and Alumni Surveys - Provide support for departmental OA persons to continue course/curriculum continuous improvement - Evaluate progress in achieving our objectives
Year 11		- Maintain and refine the OA and CR system developed under SUCCEED. - Review feedback from Sophomore and Graduating Senior Surveys - Conduct Sophomore and Graduating Senior Surveys - Evaluate progress in achieving our objectives

NC State CIT Student Transitions Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Summer Transition Program (STP) - Minority mentoring program (START) - Scale-up of Introduction to Engineering course to 250 students - Participation in climate survey - Identification of ongoing multidisciplinary design opportunities - Support for attending Workshops on ST	- Summer Transition Program (STP) - Minority mentoring program (START) - Establishment of Women in Engineering Program - Scale-up of Introduction to Engineering course - Support of multidisciplinary design courses
Year 7	- Summer Transition Program (STP) - Expansion of minority mentoring program (START) - Scale-up of Introduction to Engineering course to 1100 students - Initiation of mentoring program for female students, Women Engineers Networking Together, WENT - Initiation of transition weekend program for female students - Evaluation of report from climate survey - Identify obstacles that transfer students experience - Develop strategy for writing and speaking across the curriculum - Identify strategies for encouraging multidisciplinary design - Programmatic assessment - Reconstitute National Advisory Board for minority engineering - Encourage international partnerships	- Summer Transition Program (STP) - Minority mentoring program (START) - Scale-up of Introduction to Engineering course - Remodel/equip laboratories for freshman course - Support of multidisciplinary design courses - Women in Engineering program - Development of a strategy for writing and speaking across the curriculum - Reconstitute National Advisory Board for minority engineering program.
Year 8	- Minority mentoring program (START) - Women Engineers Networking Together, WENT - Introduction to Engineering course to 1100 students - Writing and speaking across the curriculum - Development of a model for encouraging/supporting multidisciplinary design courses - Expand leadership opportunities with student engineering leaders (SEL) in first year laboratory courses. - Fall minority engineering scholars reception.	- Summer Transition Program (STP) - Minority mentoring program (START) - Women in Engineering program - Women Engineers Networking Together, WENT - Introduction to Engineering course to 1100 students - Writing and speaking across the curriculum - Enhance transfer student transition programs - Fall minority engineering scholars reception. - Programmatic assessment
Year 9	- Minority mentoring program (START) - Writing and speaking across the curriculum - Support for multidisciplinary design courses - Fall minority engineering scholars reception - Enhance transfer student transition programs	- Summer Transition Program (STP) - Minority mentoring program (START) - Women in Engineering program - Women Engineers Networking Together, WENT - Introduction to Engineering course to 1100 students - Writing and speaking across the curriculum - Fall minority engineering scholars reception. - Programmatic assessment
Year 10	- Writing and speaking across the curriculum - Support for multidisciplinary design courses	- Summer Transition Program (STP) - Minority mentoring program (START) - Women in Engineering program - Women Engineers Networking Together, WENT - Introduction to Engineering course to 1100 students - Writing and speaking across the curriculum - Support for multidisciplinary design courses - Enhance transfer student transition programs - Fall minority engineering scholars reception. - Programmatic assessment
Year 11		- Summer Transition Program (STP) - Minority mentoring program (START) - Women in Engineering program - Women Engineers Networking Together, WENT - Introduction to Engineering course to 1100 students - Writing and speaking across the curriculum - Support for multidisciplinary design courses - Enhance programs for transfer students to ease transition into the university - Fall minority engineering scholars reception. - Programmatic assessment

NC State CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Assist with development of a coalition-wide web-based conferencing system. - Enhance faculty's ability to incorporate use of WWW-based course materials - Prepare suitable materials to tie the modules into the respective course plans. - Scale-up internet-based engineering course offerings. - Continue to put into place the technology/infrastructure to encourage course sharing.	- NC State collaborated with UNC Charlotte, NC A&T, and UNC Asheville to establish common web-based video teleconferencing system (MBONE) to enhance communication/collaboration on-campus and for distance-based course offerings. - Shared web-based MBONE video conferencing technology with UNC Wilmington and Lenoir Community College.
Year 7	- Participate in TBCD CFT - Enhance student-teacher and student-student collaboration using network-based environments. - Enhance faculty's ability to incorporate use of web-based course materials by coordinating the acquisition and deployment of an integrated set of supportable tools and guidelines. - Expand distance-based course offerings and course sharing to selected four-year campuses and community colleges. - Continue to put into place the technology / infrastructure to encourage course sharing.	- Work with new NC State Center for Learning Technology to provide faculty training and assistance programs. - Continue to scale-up internet-based engineering course offerings.
Year 8	- Participate in TBCD CFT - TBCD workshop - Student support for standard framework implementation - Student support for NCSU TBCD resource documentation and dissemination - HW/SW support for TBCD tools evaluation - Begin ViMS integration into standard framework	- Staff support for framework implementation - Student/faculty/staff support for TBCD distance education course offerings - Begin MBone Virtual Classroom dissemination
Year 9	- Participate in TBCD CFT - Student support for standard framework implementation and tools integration - HW/SW support for tools integration	- Staff support for framework implementation and user support - Student/faculty/staff support for TBCD distance education course offerings - Virtual Classroom dissemination
Year 10	- Student support for standard framework completion and documentation - HW/SW for framework testing and support - Student support for TBCD cost/benefit analysis	- TBCD Workshop - Staff support for framework completion, documentation, and user support - Student/faculty/staff support for TBCD distance education course offerings - Virtual Classroom dissemination - Staff support for TBCD cost/benefit analysis
Year 11		- Staff for user support - Student/faculty/staff support for distance education course offerings - Mbone Virtual Classroom dissemination

University of Florida CIT Strategic Plan Overview

Vision Beyond Succeed

Faculty Development:
- Fully integrated and sustainable New Faculty Orientation and Faculty Peer Mentoring.
- Institutionalized Faculty Development Workshops in the COE. Annual new faculty
- Continuing seminar series of topics of interest an importance to the engineering faculty.
- Fully developed Faculty Incentive and Rewards Program.
- Faculty Interchange and Communication network fully established.

Outcomes Assessment:
- To establish a process of continuous quality-based curriculum development and improvement for the departments in the College of Engineering, using curriculum renewal and effective outcomes assessment tools
- Hired a full time assessment person for the college

Student Transitions:
- Expand our freshman offerings to include engineering fundamentals
- Add departmental based sophomore courses
- Add a technical communications course required for all engineering students

Technology-Based Curriculum Delivery:
- Provide a supportive faculty training program in conjunction with COE/SUCCEED faculty development efforts
- Promote widespread use of the WWW in all engineering courses – at least providing online course information, some course materials, and a class mailing list with archiving support
- Develop a laptop program – Laptops required for all engineering students..
- Maintaining adequate infrastructure support at the Department, College and University levels

Over-Arching Strategies
SUCCEED's focus areas are complementary to the strategic plans for the College of Engineering and will be implemented in a manner consistent with overall College directions and priorities.
- Leverage the successful UF and other SUCCEED projects for institutionalization at UF
- Identify existing organizations at UF with which we can collaborate to effect institutionalization
- Identify key components of SUCCEED which fit into the broader strategic plan for the college of engineering and seek administrative and departmental support for these.

UF CIT Faculty Development Institutionalization Timetable

Timetable	SUCCEED-sponsored activity	Univ./Coll./Dept. activity
Year 6 (97-98)	- Faculty participating in Teaching Effectiveness Workshops - New faculty orientation - Organized Departmental Representatives - Brown bag lunch discussions - Pilot continuous evaluations - FD Web Site development	- New Faculty Orientation - Center for Excellence in Teaching - Teaching Resource Center Expansion - Gartner Group brought to campus
Year 7 (98-99)	- Institutionalize Effective Teaching / other SUCCEED Workshops - Continuous improvement of - Web Site (interactive) - Discussion Groups - New faculty orientation - Student evaluations - Develop local seminar series - Begin devel. of new workshops - Documentation plan for "Good Teaching" - Faculty reward system - Peer mentoring - Syllabus review service - Test development service - Multi-media support - Resource planning - Organize and market plan for FD	- Work with University resources for Seminars and Workshops - Work on University, College, and Departmental support for FD activities - Insure FD "Champion" in each Department - Form partnership with other University resource groups.
Year 8 (99-00)	- Pilot the projects developed in Year 7 - Establish organizational structure - Obtain College and University funding and support	Develop sustainable interaction between other campus FD providers
Year 9 (00-01)	- Evaluation of pilot efforts - Developed new faculty program - Started new teaching enhancement program	Institutionalization of all FD projects
Year 10 (01-02)	- Evaluation and improvement of FD activities and processes - Obtain guaranteed support for sustainability	The overall plan will be incorporated into University, College and Departmental programs
Year 11 (02-03)		New Faculty Orientation and Annual Teaching Effectiveness Workshops

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UF CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- OA Mini-grants	-
Year 7	- OA Mini-grants	- OA Video Conference - CIT Expo
Year 8	- OA Mini-grants - CIR Mini-grants - Beta-test merged CIR/OA Manual	- Dissemination workshop(s) for OA mini-grant results – best practices - Training session for SUCCESS, a CIR software package
Year 9	- No further work	- Dissemination workshop(s) for OA and CIR mini-grant results – best practices
Year 10	- No further work	- College and departmental level assessment - Institutionalized
Year 11		- Full time assessment person and department handle all assessment

UF CIT Student Transitions Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- IPPD expanded to 30 projects - CC and STEPUP Integration begun	- Freshman Lab – institutionalized - Partial funding of IPPD
Year 7	- IPPD expanded to 30 projects - CC and STEPUP fully integrated and institutionalized - Fully developed writing in engineering course to be institutionalized in year 8	- Freshman Lab – institutionalized - CIT Expo - IPPD funding
Year 8	- Integration of Math Physics and Chemistry - QIP adoption - Institutionalize writing course - Reduced funding for STEPUP and CC	- Freshman Lab – institutionalized - IPPD funding - Community College and Stepup programs
Year 9	- New Engineering communication course - Engineering fundamentals being added to freshman lab	- Freshman Lab – institutionalized - IPPD funding - Community College and Stepup programs - Writing Program
Year 10	- Testing of Engineering Fundamentals - Testing and improvement of communications course	- Freshman Lab – institutionalized - IPPD funding - Community College and Stepup programs - Writing Program
Year 11	–	- Freshman Lab – institutionalized - IPPD funding - Community College and Stepup programs - Writing & Communications Program - Freshman Fundamentals Institutionalized

UF CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED-sponsored activity	College/Dept/University Sponsored activity
Year 8	- TBCD CFT workshop – send participants to Train the trainers - Student support for standard for Web-based course development - COE WebCT development and Training Server - Participate in ICEE/ASEE Conferences	- Instructional Design Support for Online course development - Technology student assistance - WebCT Production Server - Host SLOAN/SUCCEED Conference at UF
Year 9	- Laptop Mini Grants - Technology survey	- SLOAN/State funds for Mini-grants to support faculty development of WWW-based/online courses - Instructional Design Support for Online course development - Technology student assistance - WebCT Production Server
Year 10	Laptop mini-grants for implementation	- SLOAN/State funds for Mini-grants to support faculty development of WWW-based/online courses - Instructional Design Support for Online course development - University Laptop program - Faculty workshops for web development offered
Year 11		- SLOAN/State funds for Mini-grants to support faculty development of WWW-based/online courses - Instructional Design Support for Online course development - University Laptop program - College Laptop Program institutionalized - Publish results in Journal/Conference

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University of North Carolina at Charlotte Strategic Plan Overview

Vision Beyond SUCCEED

Faculty Development: A strong linkage between College and University faculty development activities will be forged, along with a number of on-going activities to encourage and reward faculty for participation in improvement activities

Outcomes Assessment: Outcomes Assessment will have become integral to the College strategic planning process and will be a driver of continuous improvement in all programs. The SUCCEED outcomes assessment activities will be an integral part of the College SPART team (Strategic Planning and Assessment Resources Team)

Student Transitions: An institutionalized program to assist students with transition into, during, and from, the University will be in place. This program will encompass mentoring, tutoring, Supplemental Instruction, experiential learning, freshman engineering, recruiting, and retention efforts, and will be continuously assessed.

Technology Based Curriculum Delivery: An environment in which TBCD is common-place, faculty are engaged in the use of technology to improve instruction, and students are to utilize technology to access the delivery channels that best fit their needs will be in place.

Over-Arching Strategies

The actions and plans of the UNCC-CIT are many but there are over-arching common strategies among the four areas;

- The SUCCEED funds and expertise are linked to ongoing, College and University sponsored activities for symbiosis and continuity
- The four areas act in concert and complement each other
- The SUCCEED linkages to other schools provide a mechanism to assure compatibility and efficiency in curriculum revision and innovation

UNC-C CIT Faculty Development Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- Peer-Observation of Teaching Workshop - Support for attending workshops - FD Coordinator for COE	- Funding for attending workshops - Summer funding for new faculty for curriculum development
Year 7	- Topical workshop - Support for attending workshops - Assessment of FD activities - FD Coordinator for COE	- One teaching dialogue - Funding for attending workshops - Summer funding for new faculty for curriculum development
Year 8	- Topical workshop - Support for attending workshops - Assessment of FD activities - Implementation of results of assessment - FD Coordinator for COE	- Form Standing committee on teaching improvement - Teaching dialogue - Form teaching circles - FD college administrator identified
Year 9	- Topical workshop - Support for attending workshops - Assessment of FD activities - Implementation of results of assessment - FD Coordinator for COE	- Teaching workshop - Teaching dialogue - Revise existing teaching assessment system
Year 10	- Topical workshop - Support for attending workshops - Assessment of FD activities - Implementation of results of assessment - FD Coordinator for COE	- Teaching workshop - Teaching dialogue - Implement new mentoring program - Increased support for FD - Revise Faculty Mentoring Program - Implement new teaching assessment system
Year 11		- Teaching workshop - Teaching dialogue - Support for attending workshops - Assessment of FD activities - Additional funding for winners of the ALCOA teaching award

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UNC-C CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- students assistants for SPART - Link institutional Research databases to new SPART database - Send faculty to CFT-sponsored OA workshop and to present papers - Send faculty to ASEE / AAHE workshops on O/A - Support student to devel. CD ROM on Total Quality Class for docum.	- hire data-base assistant director for SPART - purchase computer systems and software - refine alumni surveys - refine student surveys - refine employer surveys - refine faculty surveys - administer surveys and analyze - report survey results along with other data to departments for 1998 SBR
Year 7	- complete programming for ASPIRE - complete programming for FACTS - Alpha Test ASPIRE (grad student) - Alpha test FACTS (u/g students) - Summarize results of SPART surveys	- develop template for ABET criterion 3 - complete draft of proposed freshman year objectives by ENGR1201/02 faculty and by each department - prepare SPART survey forms for scanner scoring - Conduct SBR's for college and all departments - develop UCC post-grad databases for college and departments - Obtain feedback on program objectives, ABET 2000, and general education learning outcomes and measures from constituencies - conduct focus groups on learning communities - Get measures for Prestige - Update retention database - Develop the FTE database - Update/upgrade new enrollment database - Develop GRE and SAT databases - Conduct SPART surveys - Report results on learning communities - Develop COM and GEI databases - Finalize program objectives, ABET 2000, and general education learning outcomes and measures (w/dept consensus) - Develop assessment process for tracking retention and graduation rate for ET distance learning program - Upgrade/update co-op 49ership database (including ABET 2000) - Upgrade/update NACE databases - Upgrade/update patent databases - Implement phase 2 of the budget management system (upgrades) - Upgrade/update alumni donations database - Upgrade/update UTA/URA/GTA/GRA database - Develop databases to track SPART survey results - Develop databases to track % of PE's - Develop databases to track % of grads in NC/SC
Year 8	- Beta Test ASPIRE - Revise Aspire based on Beta test - Beta Test FACTS - Revise FACTS based on Beta test - Send faculty to O/A workshops - Send faculty to O/A conferences to present papers - Participate in SUCCEED CFT Faculty Development workshop in course improvement using Outcome Assessment results	- Update/upgrade FE database - Summarize COM and GEI survey and report results - Upgrade format for SPART booklet reports - Implement the electronic faculty reporting system FACTS - Implement the electronic strategic plan scorecard ASPIRE - Implement assessment processes and tools for program objectives and ABET 2000 and general education learning outcomes - Upgrade/update alumni database - Develop process for why students leave and where they go - Develop process to assess learning communities - Determine how to develop and use student portfolios for OA - Conduct round 3 of Structured Biennial Reassessments (SBR's)
Year 9	- Support faculty to attend O/A workshops / conferences to disseminate results Send faculty to SUCCEED CFT O/A workshop on portfolio development and mgmt.	- Continue with entire SPART-facilitated data management and reporting system - Pilot student portfolio system in at least two departments - Poll college faculty on FACTS system / assess its effectiveness - Poll university faculty on ASPIRE system / assess its effectiveness

		-	Develop / monitor data-driven improvement documentation system
Year 10	- Support faculty to attend O/A workshops and conferences to disseminate results in papers and workshops - Send faculty to SUCCEED CFT O/A workshop on continuous improvement of O/A systems - Assist in devel. of data driven improvement and documentation system	- develop comprehensive student portfolio management system and alpha test - continue entire SPART-facilitated data management protocol - revise/improve ASPIRE - revise/improve FACTS - promote and monitor use of data-driven improvement and documentation system - Conduct Round 4 of Structured Biennial Reassessments (SBR's)
Year 11		- continue entire SPART-facilitated data management protocol - Beta Test comprehensive student portfolio management system - Institutionalize use of data-driven improvement and documentation system - Support faculty to attend O/A workshops and conferences to disseminate results in papers and workshops - Send another contingent of faculty to O/A workshops on continuous improvement of O/A systems

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UNC-C CIT Student Transitions Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 7	- Conduct Best Practice Visit to Va Tech. - Conduct SUCCEED Mentoring/Bridge Workshop. - Investigate the possibility of using a College of Engineering freshman attitude survey. - Hire additional student resources for MAPS. - Develop student transitions databases.	- Organize Workshop: "Designing Technical Writing Assignments for College of Engineering Students" - Organize Workshop: "Understanding and Improving Second Language Writing in the College of Engineering" - Implement upgrades to the electronic peer evaluation system used in ENGR 1201/1202 - Create a professional development seminar series using alumni and local professionals - Assign specific responsibility for recruiting and international programs assigned with COE. - Formalize and document the COE International Programs exchange process. - Implement improvements to MAPS and ENGR 1201/1202 - Investigate the possibility of purchasing NT versions of the FE and GRE - Conduct focus groups on building student learning communities. - Conduct Change of Major and Graduating Senior surveys and summarize results. - Conduct annual SPART surveys: students and faculty. - Conduct triennial SPART surveys: alumni and employers.
Year 8	- Send faculty to SUCCEED Student Transitions Workshop - Hire additional student resources for MAPS. - Hire students to continue to develop student transitions databases.	- Develop a plan to improve advising process. - Begin developing a plan for building student learning communities and assessing their impact on retention. - Implement upgrades/enhancements to the undergraduate retention tracking system. - Continue development of the graduate student retention tracking system. - Continue developing student transitions databases. - Develop and begin implementing a comprehensive recruiting/marketing plan. - Conduct Change of Major and Graduating Senior surveys and summarize results. - Conduct annual SPART surveys: students and faculty.

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Year 9	- Send faculty to SUCCED Student Transitions Workshop. - Fully institutionalize student transitions databases including undergraduate and graduate retention tracking systems.	- Implement assessment processes to determine the effectiveness of learning communities and their impact on retention. - Ensure linkage of student transitions databases with COE planning process. - Conduct Change of Major and Graduating Senior surveys and summarize results. - Conduct annual SPART surveys: students and faculty.
Year 10	- Send faculty to SUCCEED Student Transitions Workshop. - Identify and implement data driven improvement and documentation systems.	- Fully institutionalize MAPS, ENGR 1201/1202, learning communities, and other student transitions databases and assessment and continuous improvement processes.
Year 11		- Identify and implement data driven improvement and documentation system.

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UNC-C CIT Technology-Based Curriculum Delivery Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- SUCCEED video conferencing facility - Internet Classroom startup equipment - Student project to investigate Internet Course delivery software	- Internet Classroom space assigned, renovated, and additional equipment installed - Pilot study of web courseware management tools - Study of Courseware Management tools
Year 7	- Support for SUCCEED video conferencing facility - Support for sending faculty to Electronic Materials workshop - Support for sending faculty to WWW workshop - Support for sending faculty to Courseware Authoring tools workshop - Support for sending faculty to Streaming Audio and Video workshop - Student project to develop/adapt/adopt software to support MBONE technology - Study of ALN techniques - Student project to investigate the use of network collaboration products	- Staff assigned to support SUCCEED video conferencing facility - Support for Internet Classroom - Delivery of Statics to UNC-Wilmington and Lenoir Community College via the Internet Classroom - Trial workshop on Courseware Management software package (WCB) - Implementation of WCB for courseware management - On-campus WWW workshop
Year 8	- Support for SUCCEED video conferencing facility - Support for sending faculty to TBCD workshops - Internet Classroom upgrades - - - Develop the Engineering Technology Fire Science program course delivery mechanism	- Staff Support for Video conferencing facility - Internet Classroom redesign and completion - Support for Internet Classroom - Delivery of at least two courses to UNC-W, Lenoir CC, and UNC-Asheville via the Internet Classroom - Support for WCB - Implementation of Real Media server and producer software for streaming media - On-campus WCB workshop - -
Year 9	- Upgrade of SUCCEED video conferencing facility - Support for sending faculty to TBCD workshops - Support for SUCCEED video conferencing facility	- Staff Support for Video conferencing facility - Support for Internet Classrooms - Support for WCB - Support for Real Media - Deliver Engineering 2+2 Program to remote sites - On-campus Web Courseware workshop - Deliver first Engineering Technology Fire Science Program courses to multiple remote sites
Year 10	- Support for SUCCEED video conferencing facility	- Staff Support for Video conferencing facility - Support for Internet Classrooms - Support for Web Courseware - Support for Real Media - - On-campus Streaming Media workshop - On-campus Web Courseware workshop - On-campus WWW workshop - - Deliver Engineering 2+2 Program to remote sites - Deliver Engineering Technology Fire Science Program to remote sites
Year 11		- Support for Video conferencing facility - Support for Internet Classrooms - Support for WCB or an alternative - Support for Real Media or an alternative - On-campus Courseware workshops - On-campus multimedia workshops - Deliver Engineering 2+2 Program to remote sites - Deliver Engineering Technology Fire Science Program to remote sites

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VISION BEYOND SUCCEED

- *Faculty Development.* We are building an active, self-sustaining Engineering Learning Community (ELC) dedicated to faculty support and development, the continuous improvement of learning environments, and student success. SUCCEED has formed a partnership with the University Center for Excellence in Undergraduate Teaching (CEUT). The core members of ELC are participants of Felder/Brent Teaching Leader Workshops and the director of CEUT.

  CEUT provides support for practically every aspect of teaching and learning, from special workshops for graduate teaching assistants and new faculty to seminars on teaching large classes and faculty study groups. The SUCCEED-CEUT partnership will be transformed into an Engineering-CEUT partnership.

- *Outcomes Assessment.* The new ABET EC 2000 requirements are a learning process for the entire engineering community. We must use assessment results as input to curriculum renewal. Our vision is full accreditation for all degree programs at our next accreditation review. SUCCEED will have been the catalyst for adopting and adapting best practices in outcomes assessment and curriculum renewal processes.

- *Student Transitions.* Our student transitions program is at the heart of SUCCEED's mission as an agent of change: "...to develop, implement, evaluate, and disseminate new, more effective models of engineering education and to change the academic culture in ways that will support the new models..." (John Prados, The Innovator, Fall 1995). The transition program focuses on the three stages of a student's experience: transition into college, personal and professional development in college, and transition to the workplace. The Dean of the College of Engineering has been an active supporter of SUCCEED's mission.

- *Technology-Based Curriculum Delivery.* The goal is to extend the reach and effectiveness of engineering education through the use of advanced computing and communication technologies. We are developing a partnership with the University's Faculty Development Institute (FDI). The primary goal of FDI is to provide faculty the opportunity to rethink methods and improve teaching and learning through the use of technology. The FDI presents a four-day workshop in the summer, which is followed during the academic year by twenty discipline-specific workshops on advanced topics. The FDI received the Hesburgh Award for successful, innovative faculty development programs. The Engineering-FDI partnership will carry on the function of TBCD.

The mission of our Campus Implementation Team (CIT) is to promote the adaptation and implementation of the SUCCEED curriculum model, a systems model for education (Fig. 1), in the unique environment of Virginia Tech. In addition we will draw guidelines from other sources, such as other NSF coalitions, educational research, and innovative learning environments, to foster student success in college, in the workplace, and in their own lives.
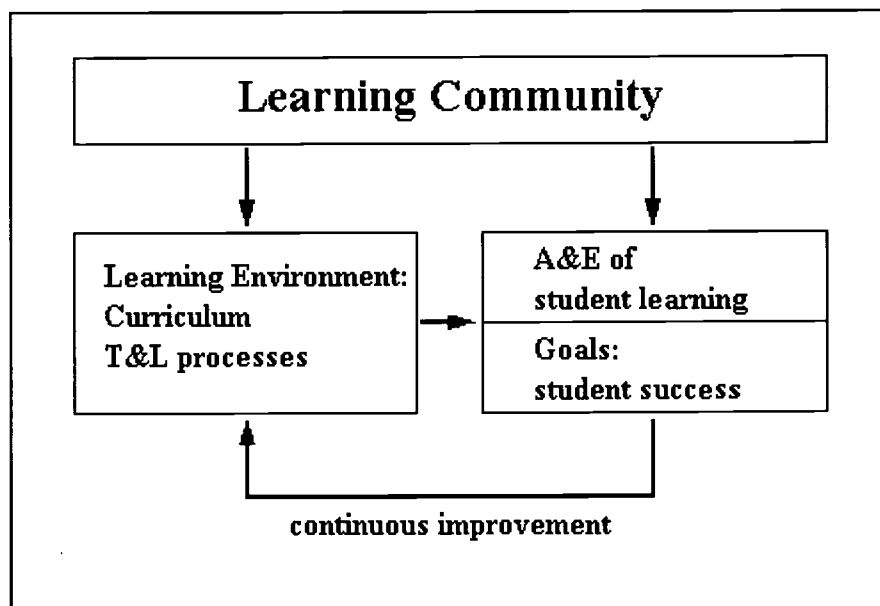

Figure 1. Systems model for education

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- **Virginia Tech Faculty Development Institutionalization Timetable**

	SUCCEED-sponsored activity	College or dept.-sponsored activity
YEAR 6	• Participation of Virginia Tech faculty and students in coalition-wide activities: Effective Teaching Workshop, Atlanta; Student Success Workshop, Charlotte; Multidisciplinary Design Workshop, Charlotte; Posters Display of Pilot Courses at Virginia Tech; Effective Teaching Workshop, Raleigh: 3 teaching leaders; Orientation to Teaching Workshop, Raleigh. • Seminars, workshops, and activities by Virginia Tech Faculty: Changing the Culture of Education Instructional, Technology: Best Practices in Science and Engineering, Multidisciplinary Design Projects, Multimedia Learning Environments, Orientation to Teaching, Active Learning with Multimedia, Internet-Based Instructional Methods. • CIT hosted seminars and workshops by SUCCEED PI's to motivate our faculty to form teams and teach pilot courses based on SUCCEED curriculum models. Presenters: Tom Miller (NC State, Dave Ollis (NC State), Sarah Rajala (NC State, Richard Felder and Rebecca Brent (NC State, Jack Elzinga (University of Florida), Michael Leonard (Clemson University), and Donald Beasley (Clemson University) • 6 pilot courses based on the SUCCEED curriculum model were taught in year 6.	• Orientation to Teaching Workshop • New Engineering Faculty Familiarization Program: 8 sessions during academic year • CEUT activities: workshops for faculty and graduate assistants, faculty study groups, Instructional Enhancement Grants • FDI Three -Day Summer Workshop, twenty discipline-specific workshops, Instructional Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants
Year 7	• 2 SUCCEED-CEUT FD workshops • FD-TBCD workshop • 4 Follow-up faculty networking meetings • Mentoring Faculty Support workshop	• COE New Engineering Faculty Familiarization Program: 8 sessions during academic year • CEUT activities: workshops for faculty and graduate assistants, faculty study groups, brown-bag meetings, Instructional Enhancement Grants • FDI Three-Day Summer Workshop, twenty discipline-specific workshops, Instructional Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants
Year 8	• Two SUCCEED-CEUT FD workshops • Follow-up faculty networking meetings (two per semester) • Case-Study workshop • FD-TBCD workshop • Felder/Brent Mentoring workshop	• COE New Engineering Faculty Familiarization Program: 8 sessions during academic year • CEUT activities: workshops for faculty and graduate assistants, faculty study groups, brown-bag meetings, Instructional Enhancement Grants • FDI Three-Day Summer Workshop, twenty discipline-specific workshops, Instructional

		Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants
Year 9	• SUCCEED-CEUT FD workshops • Follow-up faculty networking meetings (two per semester) • FD-TBCD workshop • New faculty development/mentoring programs	• COE New Engineering Faculty Familiarization Program: 8 sessions during academic year • CEUT activities: workshops for faculty and graduate assistants, faculty study groups, brown-bag meetings, Instructional Enhancement Grants • FDI Three-Day Summer Workshop, twenty discipline-specific workshops, Instructional Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants
Year 10	• SUCCEED-CEUT FD workshops • Follow-up faculty networking meetings (two per semester) • FD-TBCD workshop • New faculty development/mentoring programs	• COE New Engineering Faculty Familiarization Program: 8 sessions during academic year • CEUT activities: workshops for faculty and graduate assistants, faculty study groups, brown-bag meetings, Instructional Enhancement Grants • FDI Three-Day Summer Workshop, twenty discipline-specific workshops, Instructional Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants
Year 11		• Engineering Education Fellow • COE New Engineering Faculty Mentoring Program • Engineering-CEUT activities: workshops for faculty and graduate assistants, faculty study groups, brown-bag meetings, Instructional Enhancement Grants • Follow-up networking meetings • Engineering-FDI activities: Four-Day Summer Workshop, twenty discipline-specific workshops, Instructional Technology Conference, and courseware development support • CIL Course Development Grants • Provost's Student Success Grants • Engineering-CEUT fall workshop

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Virginia Tech CIT Outcomes Assessment Institutionalization Timetable

	SUCCEED-sponsored activity	College or Dept-sponsored Activity
Year 6	Assist in OA workshop Corporate contacts	Finalize ME curriculum innovation Begin other departments: Freshman EF, EcpE, MSE, Mining, ChE
Year 7	Send faculty to OA workshops	Continue Curriculum renewal of EF and other departments Design College-wide template for OA process Attend conferences Use best practices from SUCCEED
Year 8	Participate in OA workshops Participate in Employer Feedback Participate in Portfolio Project	Collect data using templates Use data for Curriculum Innovation and Renewal of all departments
Year 9	Contribute to Dissemination of Employer Feedback and Portfolio result	Prepare for ABET Continue OA/CIR process
Year 10	Contribute to Dissemination of ·SUCCEED expertise	Continue OA/CIR process

Virginia Tech Student Transitions Institutionalization Timetable

	SUCCEED-sponsored activity	College or dept.-sponsored activity
Year 6	- SUCCEED ESP-Calculus - Virtual Corporations - Workshop Statics - Infrastructure Assessment and Rehabilitation Design - Integrated Building Design - Workplace Transitioning - Introductory Engineering Lab	- SUCCEED ESP-Calculus - Virtual Corporations - Workshop Statics - Infrastructure Assessment and Rehabilitation Design - Integrated Building Design - Workplace Transitioning - Introductory Engineering Lab
Year 7	- SUCCEED ESP-Calculus - Virtual Corporations - Workshop Statics - Infrastructure Assessment and Rehabilitation Design - Workplace Transitioning - Biological Systems Engineering - Introductory Engineering Lab - Early Engineering Design	- SUCCEED ESP-Calculus - Virtual Corporations - Workshop Statics - Infrastructure Assessment and Rehabilitation Design - Workplace Transitioning - Biological Systems Engineering - Introductory Engineering Lab - Early Engineering Design
Year 8	- SUCCEED ESP-Calculus - Virtual Corporations - ESP-Statics - Infrastructure Assessment and Rehabilitation Design - Workplace Transitioning - Mechatronics Education - Biological Systems Engineering - Introductory Engineering Lab - Early Engineering Design	- Virtual Corporations - Infrastructure Assessment and Rehabilitation Design - Workplace Transitioning - Mentoring programs - Junior/Senior Transition Seminar Series - Continuation of Freshman Transitioning Seminar Series - Intervention Workshops for Freshman
Year 9	- ESP-Statics - Mechatronics Education - Introductory Engineering Lab - Early Engineering Design - Integrated Building Design - Chemical Engineering Design - Materials Engineering Design	- Virtual Corporations - ESP-Statics - Infrastructure Assessment and Rehabilitation Design - Workplace Transitioning - Documentation and Dissemination of Year 8 Results - Implementation of Modules for Student Training - Expansion of Freshman Workshop

		• Evaluation of Problem Solving Modules for Bridge Program • Expansion of Articulation Conference
Year 10	• Mechanical Engineering Design • Introductory Engineering Lab • Early Engineering Design • Integrated Building Design • Chemical Engineering Design • Materials Engineering Design	• Virtual Corporations • ESP-Statics • Infrastructure Assessment and Rehabilitation Design • Workplace Transitioning • Documentation and Dissemination of Year 9 Results • Conduct Advisor Training Workshop • Evaluation of Advisor Training Modules
Year 11		• Virtual Corporations • ESP-Statics • Infrastructure Assessment and Rehabilitation Design • Workplace Transitioning • Biological Systems Engineering • Introductory Engineering Lab • Early Engineering Design • Mechatronics Education • Assessment, Documentation, and Dissemination of Student Transitioning Activities

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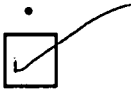
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