Program Summary

Task Force: You state that your unit goals align with so many of IPFW’s 2020 goals that it confuses the issue. For clarity and specificity, please streamline these by highlighting only the most important IPFW 2020 goals.

Thank you for the work that went into this report. Through the USAP process, we are working to create at IPFW a culture of continuous improvement, and we think that setting specific and measurable goals is an important part of getting individuals and units at IPFW to think differently about planning and the future.

Criterion: #1: Mission - How does your unit support the mission of the university? This may include your mission and vision statements. (no more than 200 words)

Question: Mission - How does your unit support the mission of the university? This may include your mission and vision statements. (no more than 200 words)

The College of Engineering, Technology, & Computer Science (ETCS) serves as a valuable educational and research partner for northeast Indiana.

Mission:

- Provide comprehensive undergraduate and graduate programs that prepare students for a variety of careers in engineering, engineering technology, computer sciences and related disciplines, and leadership;
- Serve the needs of the region and strive to achieve national recognition through excellence in teaching and learning, innovation and research, community engagement, economic development, and service.

Vision:

- Define and lead education and practices in engineering, technology, computer science and organizational leadership and supervision. Make ETCS an obvious choice for future students.
- Define and contribute to the national and international agenda in career-related scholarship and innovation. Make history in national technology landmarks and maximize our capabilities and achievements.
- Define and enhance the academia-industry-government partnership and entrepreneurship. Expand our resource base; influence the national and international technology agenda.

Criterion: #2: Accomplishments - Please list significant accomplishments from the last three years as they align with Plan 2020 goals

Question: I. Foster Student Success - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area I: Foster student success.
1. Foster Student Success

- IPFW engineering program is ranked at #63 by USA Today 4 years in a row as one of the best colleges in USA
- Engineering has 96+% passing rate in FE Exam (2010-2014) compared to 72% national average
- CS has 100% placement rate (career position or graduate studies) of its graduates. Likewise, all other ETCS departments have an outstanding placement for graduates compared to our peered institutions
- Approximately 90% of ETCS students remain in STEM programs after freshmen year
- 85% of ETCS students get career position or pursue graduate study upon graduation

**Question:** II. Creation of Knowledge - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area II: Promote the Creation, Integration, and Application of Knowledge.

- All ETCS students participated in senior design projects many of which are sponsored by regional industry and organizations; these senior design projects are team-based, goal-driven and career-related experiential tasks
- ETCS produces 90+ peer reviewed publications per year (journal articles, conference proceedings, book, book chapters)
- Developed curriculum and training courses in Systems Engineering are meeting the demand from the regional industry and community
- ETCS students are active participants of internship and co-op opportunities
- ME students have won the design competition sponsored by CRANE
- ETCS student professional association have participated in and won various competitions (e.g. CE students finish 3rd in Steel Bridge Design Competition at ASCE regional convention)

**Question:** III. Regional Hub - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area III: Serve as a Regional Intellectual, Cultural, and Economic Hub for Global Competitiveness.

- The average number of publications per faculty at the Department of Engineering is 3+ per year
- ETCS's faculty are the primary contributors to Purdue's Manufacturing Extension Program (MEP), Technical Assistance Program (TAP), and Indiana Next Generation Manufacturing Competitiveness Center (IN-MAC) program at Northeast Indiana region
- ETCS's average annual income through external grants and contracts, TAP, MEP and IN-MAC is approximately $600,000
- ETCS Outreach Center is the home of (a) First Lego League Competition – State Final, (b) Future City Competition and (c) Regional Science and Engineering Fair
- ETCS is the home of the Society for Woman Engineers (SWE) in northeast Indiana which has sponsored the Opportunity Banquet with distinguished speakers, provided the ETCS career forum, and offered job-shadowing for high school students
- ETCS holds a membership in the Board of Directors of Northeast Indiana Innovation Center (NIIC) and Arts United Fort Wayne. ETCS serves as an advisory member in OrthoWorx in Education, Manufacturing and Research Council
- ETCS sponsors the Northeast Indiana Technology Showcase and Applied Leadership Workshop
- ETCS and NIIC established a “Global Alliance for Technology Transfer and Entrepreneurship” with higher education institutions and business incubators in the world

**Question:**
IV. - Create a Stronger Univ - Please list significant accomplishments from the last three years as they align with Plan 2020 goal area IV: Create a Stronger University through Improving the Support of Stakeholders and the Quality and Efficiency of the Organization.

Re-Organization of Programs

• Transfer Interior Design program to the Department of VCD at VPA
• Divide the Department of Engineering into two departments: a Department of Civil and Mechanical Engineering and a Department of Electrical and Computer Engineering (per the recommendation from the Engineering Accreditation Commission (EAC))
• Combine Architecture Engineering Technology, Civil Engineering Technology, and Construction Engineering Technology programs into a single BS degree program in Construction Engineering Technology; phase out the AS degree program (and accreditation) in Architecture Engineering Technology and Civil Engineering Technology

Substantiate the Concept of STEM/STEAM pathway to Career – an alignment process that builds partnership network between K-12 sector, IPFW/ETCS, industry/community and government

• ETCS Outreach has launched a Sci-Tec Academy which provides experiential learning challenges to middle to high school students. The outcome of experiential learning allows us to recruit students who clearly are interested in STEM careers.
• Freshman Engineering Program has developed a Joint 2/3 Program with Engineering Technology to enhance the mathematical skills of incoming freshmen with undeclared major: Assessment of this group of students’ historical performance found that they have particularly poor success in the Engineering program and in retention to the University. We created four new program paths (one for each of our engineering majors) that start these students in Engineering Technology classes with a smooth path into Engineering. After two years of coursework these students can complete an Engineering Technology degree with two more years of coursework or an Engineering degree with three years of coursework. This program provides these students with additional preparation and a smooth alternative path if Engineering does not work out for them.
• CS/ETCS has developed a dual credit program with regional high schools (two CS courses)
• ETCS Student Success Center has launched a peer-to-peer tutoring program, a learning community, aiming at improving the retention of students
• Developed dual degree option (Engineering, Technology and Computer Science) with regional private colleges and community colleges. This will increase the enrollment, retention rate and graduation rate in ETCS.
• Developed graduate program in Systems Engineering with industry

Question: Other Accomplishments - Please list any other significant accomplishments from the last three years that do not align with Plan 2020.

• 3 ETCS faculty serve as editor-in-chief in internationally renounced journals
• Held office/award in professional society: Max – Society for Experimental Mechanics (SEM) Fellow
• Wireless Technology Center was awarded by the Capital Improvement Board and the City of Fort Wayne ($370,000) for its potential in technology transfer that leads to job creation and economic development
• All ETCS’s Engineering, Technology and Computer Science programs received full accreditation through Accreditation Board of Engineering and Technology (ABET)

Criterion: #3: Accreditations - Program specific accreditation and status
**Question:** Accreditations - What program-specific accreditations and status do you have, if any?

What follows is a summary of the ETCS degree programs that receive accreditation through ABET,

- B.S. in Computer Science
- B.S. in Civil Engineering
- B.S. in Computer Engineering
- B.S. in Electrical Engineering
- B.S. in Mechanical Engineering
- A.S. in Architectural Engineering Technology
- A.S. in Civil Engineering Technology
- B.S. in Computer Engineering Technology
- B.S. in Construction Engineering Technology
- A.S. in Electrical Engineering Technology
- B.S. in Electrical Engineering Technology
- A.S. in Industrial Engineering Technology
- B.S. in Industrial Engineering Technology
- A.S. in Mechanical Engineering Technology
- B.S. in Mechanical Engineering Technology

**Question:** Constraints/Benefits - How do these accreditations constrain or benefit the work of your unit, if applicable?

- Certification of quality of programs and their graduates
- Graduates from an ABET accredited program would meet the expectations of employers thus receiving consideration for career opportunities
- Eligibility to pursue for obtaining professional license
- Inadequacy of faculty staffing, supporting clerical and technical staff, program cost, faculty development support, laboratory space and facilities and the continuity of leadership (e.g. turnover of the chairs) are the typical citations received from the ABET review team. Receiving a full accreditation is contingent upon correcting the cited issues

**Criterion:** #4: Laws and Mandates - Federal and state laws or mandates that your unit addresses

**Question:** Federal and State Laws - What federal and/or state laws or mandates do you address, if any?

- General Education Curriculum
- Maximum Credit Hours (120 hours) for Degree Completion
- Common Core Curriculum

**Question:** Constraints/Benefits - How do these federal and state laws or mandates constrain or benefit the work of your unit?
1. Although common core curriculum is intended to provide a smooth transfer of credit hours from one institution to another, discrepancies are found between different institutions on the actual coverage of the course contents as well as the standard for assessing learning outcome. Failure to address the exact equivalence of course content and learning outcome could negatively impact retention and graduation.

**Criterion**: #5: Inefficiencies - Activities that you spend resources on inefficiently or in ways that do not support the mission.

**Question**: Inefficient use of resources - On what activities, if any, do you spend resources (money, time, people, etc.) inefficiently or in ways that do not support the mission of your unit or the university? List as many as apply.

N/A

**Criterion**: #6: IR and Budget Review - Review of your department profile and budget

**Question**: Contextualize IR data - Upon review of your IR Department Profile (for academic units) and FY 14-15 Budget information, are there any data you want to correct or contextualize? To view your profile or budget visit the Office of Institutional Effectiveness website: http://www.ipfw.edu/offices/ir/profiles/

The annual budget for ETCS is approximate $6 million dollars while our annual expenditure is approximately $7 million dollars. In essence, it is important to determine the real cost of running the programs at ETCS based on an analysis of capacity, efficiency, and revenue generation. What follows is a list of budget items that warrant consideration for increase:

- Salary funding for LTL/GTA positions and student worker positions
- Conversion of center personnel to general fund
- S&E funding for Student Success Center, Outreach Center, and HAAS Advanced Manufacturing Education Center
- Funding for a marketing position
- Maintenance and replacement of large laboratory equipment and computers (not covered by lab fees)
- Funding for building renovation
- Funding for faculty development

**Criterion**: #7: Goal One - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:**
1. Comment on the specificity of the goal:

See concluding general comment about streamlining the number of IPFW goals that you identify your
unit goals as aligning with.

2. Comment on the goal's measures:

Goal is to increase first time freshmen enrollment by 2%. Why 2%? For metrics involving a
percentage increase, please provide a clearer frame of reference in addition, such as “2%, from XX to
XX students.”

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental
profile and budget data):

Not able to achieve goal. Funds cited. Question: What actions can you take toward achieving this
goal with your current resources?

4. Comment on the goal’s relevance:

Goal is relevant considering the recent enrollment decline across campus

5. Comment on the timeline of the goal:

Goal has no time line. This makes it hard to tell that is has been achieved.

What are the checkpoints toward the three year goal?

Possible opportunities for collaboration or suggestions for addressing a gap:

University-wide enrollment drive

**Question:** Unit Goal - What is your unit goal?

*Increase the 1st-time freshmen enrollment by 2% and target at high quality students with
experiential learning experience.*

(Substantiate the concept of STEM/STEAM pathway to career attainment– an alignment process that
builds partnership network between K-12 sector, IPFW/ETCS, industry/community and government)

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply.
If it does not align, you may write “NA” or clarify.
ETCS Engineering, Technology, and Computer Science

I.A.1 Improve quality and fidelity of assessment process of degree/certificate programs, General Education program, and Baccalaureate Framework with dedicated resources.

I.B.1 Increase opportunities for engaged and experiential learning including service learning and internship programs.

I.B.2 Expand impact and profile of Honors Program.

I.B.5 Transform the concept of the college classroom and the delivery of education.

II.C Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

III.D Provide non-credit enrichment experiences for the community.

III.M.1 Intellectual, cultural, and artistic events

IV.B.3 Eliminate process barriers in enrollment management that impact student achievement.

IV.C.1 Build infrastructure to support advancement goals and functions.

IV.C.4 Enhance volunteer engagement in support of strategic goals and fundraising.

IV.M.2 Philanthropic and public support for university priorities

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

- Incorporate student recruitment (supporting role) as a mission and goal of ETCS Outreach Center
- Establish and use the database of potential ETCS students through outreach events (such as First Lego, Future City, Science and Engineering Fairs, and Sci-Tec Academy)
- Increase the collaboration with K-12 and industry/community on experiential learning events and trainings; explore the possibility to incorporate these experiential learning events as components of the dual credit courses
- Secure scholarships for incoming freshmen students
- Increase ETCS’s presence and participation at regional high schools
- Invite high school students to participate in ETCS events including Don Days/campus visits, job shadowing, Opportunity Banquet and New Tech School Showcase (assignment to ETCS Student Success Center)
- Create an “Assistant Dean for Academic Opportunity” who will oversee Student Success Center and Outreach Center
- Maintain active communication with potential students
- Create open laboratory space for Sci-Tec Academy
- Define ETCS’s niches and signatures
Question: Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

- Increase in academic credentials of incoming freshmen
- Increase in incoming freshmen students who participated in multiple outreach events including Sci-Tec Academy; increase in industry/community sponsored Sci-Tec tasks
- Increase scholarship fund for incoming freshmen students
- Increase the community sponsorship of ETCS outreach events
- Increase in ETCS related dual credit courses and the number of students
- Increase the number of high school visits
- Increase number of student visits to ETCS

Question: Resources - Are you able to accomplish this unit goal with your current resources?

No

Question: Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

- Increase S&E fund including student work money for Outreach Center and Student Success Center
- Fund the position of Assistant Dean of Academic Opportunities
- Funding for renovation of laboratory and creating new space

Question: Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

- Competition with the main campus and the regional colleges
- Decrease in traditional college-age population in the region and surrounding state

Question: Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

3 years

Criterion: #8: Goal Two - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

Task Force:
1. Comment on the specificity of the goal:

See concluding general comment about streamlining the number of IPFW goals that you identify your unit goals as aligning with.

2. Comment on the goal’s measures:

Increasing retention rate by 10%... why this percentage? For assessing the feasibility of the goal, it is helpful to have a sense of why this target was chosen. Also, for metrics involving a percentage increase, please provide a clearer frame of reference in addition, such as “10%, from XX to XX students.”

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental profile and budget data):

There are so many metrics and actions that it becomes difficult to see what exactly is intended. Actions and metrics are also mixed up. Example, “Establishing a realistic understanding of the program cost/budget”, would fit more under action than metrics.

4. Comment on the goal’s relevance:

Increasing retention is relevant to overall university goals, but increasing by a specified margin would be made concrete by supplying a timeline.

5. Comment on the timeline of the goal:

Checkpoints within the 2-year timeline would be helpful.

**Question:** Unit Goal - What is your unit goal?

**Increase existing retention rate and graduation rate by 10%**

*Substantiate the concept of STEM/STEAM pathway to career – an alignment process that builds partnership network between K-12 sector, IPFW/ETCS, industry/community and government.*

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

I.A.1 Improve quality and fidelity of assessment process of degree/certificate programs, General Education program, and Baccalaureate Framework with dedicated resources.

I.A.2 Use assessment data to improve student learning.

I.B.1 Increase opportunities for engaged and experiential learning including service learning and internship programs.

I.B.2 Expand impact and profile of Honors Program.

I.B.3 Expand number of degree programs that have gateway courses.

I.B.4 Expand use of high-impact instructional and advising interventions.
ETCSD Engineering, Technology, and Computer Science

1.E.1 Identify and develop signature programs that respond to regional needs, build on faculty expertise, and uniquely distinguish IPFW from other institutions.

1.E.2 Develop activities and experiences that promote success in student achievement through programs with strong student learning outcomes, high graduation rates, and strong job placement prospects.

1.E.3 Build and strengthen relationships with regional partners to increase research and scholarly collaborations in signature programs.

1.E.4 Promote majors and programs with strong job placement opportunities in the region and beyond.

1.M.1 Retention and graduation rate

1.M.3 Achievement of learning outcomes (Baccalaureate Framework)

1.M.6 Honors Program

II.A Project future regional, national, and international demand for research and collaboration.

II.B Promote mentoring relationships between faculty and students engaged in creation, integration, and application of knowledge.

II.C Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

II.M.2 Students participating in research and scholarly activity

II.M.3 Internal and external academic collaborations

III.A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

III.M.1 Intellectual, cultural, and artistic events

IV.A.1 Rationalize, prioritize, and establish a set of appropriate performance metrics for all academic and non-academic units.

IV.C.1 Build infrastructure to support advancement goals and functions.

IV.C.2 Implement a strategy for sustainable external funding of strategic priorities.

IV.M.2 Philanthropic and public support for university priorities

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?
ETCSD Engineering, Technology, and Computer Science

- Enhance the 2/3 freshmen program to improve the mathematics competency of engineering and technology freshmen; an academic enhancement process offered to the freshmen qualified for the Engineering Technology program but wish to study in an Engineering program
- Make peer-to-peer tutoring a long standing program (targeted at high DFW classes)
- Secure more internship and co-op opportunities
- Develop scholarship/award/bonus to full-time junior and senior students
- Encourage students to participate in undergraduate research
- Develop 2+2 (or 2+3) dual (PU) degree programs with regional private colleges and community colleges; market PU degree, scholarships, participation in internships, co-op, senior design projects, and career opportunity
- Invite more industries to participate/offer design projects, especially the senior design; senior design projects are career-related, team-based experiential learning
- A proposed Assistant Dean of Academic Opportunities is assigned to work with the Office of Career Services to place ETCS students for career opportunities
- Expand the Career Event of the SWE Opportunity Banquet
- Ensure all ABET accredited programs successfully retain accreditation

Question: Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

- Increase the number of freshmen students participating in 2/3 program; reduction in stop-out rate in freshmen engineering program
- Secure budget to fund tutoring program
- Increase the retention of the students who received tutoring
- Increase the placement of internship and co-op opportunities
- Increase the student population at the junior and senior level
- Increase in transfer students and dual degree students
- Increase in graduation rate
- Increase in career placement rate of graduates
- Receive re-accreditation

Question: Resources - Are you able to accomplish this unit goal with your current resources?

No

Question: Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

- Need 2 more faculty positions in freshmen engineering program
- Funding to support peer-to-peer tutoring programs
- Fund the position of Assistant Dean for Academic Opportunities (also requested in goal-1)

Question: Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

- Current classroom space for freshmen engineering program is insufficient; increase in freshmen would require more sections be offered for the same class
- Articulation for credit transfer from other colleges for the 2+2 or 2+3 is very time consuming

Question: Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?
Indiana University-Purdue University Fort Wayne (IPFW)
Program Write-up with Task Force Comments
ETCSD Engineering, Technology, and Computer Science

N/A

**Criterion:** #9: Goal Three - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:**
1. Comment on the specificity of the goal:
   Goal is too grandiose; breaking it into workable segments would make it more achievable. See concluding general comment about streamlining the number of IPFW goals that you identify your unit goals as aligning with.

2. Comment on the goal’s measures:
   Like goal #2, this goal has so many metrics and actions that it begins to feel unfocused.

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental profile and budget data):
   Unit reports inability to achieve the goal. Question: What actions can you take toward achieving this goal with your current resources?

4. Comment on the goal’s relevance:
   Helping students to be competitive for employment is a good fit with IPFW’s 2020 goals. It is recommended that the goal be simplified into conceivable and measurable segments.

5. Comment on the timeline of the goal:
   This goal has a long timeline (2 years). Please create checkpoints along the way to assess progress annually.

   Consider working with Career Services and the Office of Graduate Studies to share information about employment needs in the region.

**Question:** Unit Goal - What is your unit goal?
Foster ETCS’s program capability effectiveness and innovation toward enabling students’ competitiveness for career opportunities

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

I.A.1 Improve quality and fidelity of assessment process of degree/certificate programs, General Education program, and Baccalaureate Framework with dedicated resources.

I.A.2 Use assessment data to improve student learning.

I.B.3 Expand number of degree programs that have gateway courses.
I.B.4 Expand use of high-impact instructional and advising interventions.

I.C.1 Develop and promote interdisciplinary programs where there are sufficient university assets available and anticipated employment needs.

I.C.7 Establish links between baccalaureate and post-baccalaureate programs.

I.C.8 Respond to regional demand with appropriate post-baccalaureate credentials.

I.D.1 Develop activities and experiences that promote multiculturalism as a value.

I.E.2 Develop activities and experiences that promote success in student achievement through programs with strong student learning outcomes, high graduation rates, and strong job placement prospects.

1.E.4 Promote majors and programs with strong job placement opportunities in the region and beyond.

I.M.1 Retention and graduation rate

I.M.3 Achievement of learning outcomes (Baccalaureate Framework)

II.B. Promote mentoring relationships between faculty and students engaged in creation, integration, and application of knowledge.

II.C. Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

II.M.2 Students participating in research and scholarly activity

IV.A.1 Rationalize, prioritize, and establish a set of appropriate performance metrics for all academic and non-academic units.

IV.A.2 Establish an integrated system of program reporting, review, assessment and accreditation that is aligned to performance metrics.

IV.B.1 Resource allocation prioritization informed by performance metrics.

IV.B.2 Decentralize resource distribution and control to lowest level, mission focused administrative units.

IV.B.4 Identify gaps in academic and program offerings and prioritize programs for creation, expansion, merging, or cessation.

IV.B.5 Continue increasing transparency in resource allocation budget formation and administration, and personnel decisions.

IV.M.1 Reallocations as a percent of general fund budget

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.
Question: Actions - What action(s) does your unit plan to take to support this unit goal?

- Determine the compatibility between regional/national workforce needs and the degree programs offered at ETCS; establish a database of potential employers to the graduates of ETCS degree programs
- Determine the right size of ETCS degree programs: number of students, number of teaching FTEs (including LTLs and GTAs), number of courses and sections taught per semester, number of laboratory sections, size limit per classroom
- Determine the needs in laboratory space, facilities/equipment and technical support
- Identify the common courses offered through multiple programs/departments
- Develop the funding need based on the above capacity analysis, estimated S&E budget and faculty development
- All faculty should support advising and contribute to learning outcome assessment
- Maintain our (ABET) accreditation status through the continuous assessment of Program Education Objectives and Learning Outcome
- Explore the feasibility of developing double major, major-minor and combined (or accelerated) Bachelors-Masters programs of interdisciplinary nature that address the emerging workforce need
- Emphasize experiential learning and entrepreneurship through senior design projects
- Foster the sustainability and vitality of graduate programs; include the graduate programs in the cost study

Question: Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

- Relate the curriculum contents to the skills (both technical and leadership) need in the career position and industry
- Average classroom size in each program should be between 15 to 30
- Typical faculty to student ratio is 1:25 among the peers of ETCS
- More than 70% of total program FTEs will be in tenured and tenure track positions
- Reduce course duplications through cross listing/sharing
- Minimize the discrepancy in credit hour generation/workload assignment among faculty members in each degree program
- Develop a plan to timely refurbish and/or update the laboratory facilities
- Establish a realistic understanding of the program cost/budget
- Develop a long term prioritized faculty hiring plan
- Establish a faculty task force for ABET accreditation and assessment
- All programs are re-accredited through ABET program review
- Develop preliminary proposals for the following related subjects: CS + Nursing, Engineering + Business, Engineering + Leadership; IS + IT + Hospitality; Construction + IT, CS + Education, etc.
- Gather report (partnered with CRI) on career opportunities related to these suggested interdisciplinary programs
- Increase in senior design projects that leads the product/process development of industry and organization
- Increase in graduate students and GTA funds

Question: Resources - Are you able to accomplish this unit goal with your current resources?

No
Comparison of resources needed and budget constraints at IPFW.

**Question:** Needed Resources - If you don't have enough resources, what additional resources do you need to accomplish this unit goal?

- Additional funding is needed to support (a) temporary instructional positions, (b) faculty development, and (c) accreditation costs.
- Need laboratory support, new faculty positions and GTAs.

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

- Faculty expertise might limit the rotation/flexibility of course assignment.
- Variation of program emphases and pre-requisite requirements might affect the development of common courses of similar nature.

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

2 years

Criterion: #10: Goal Four - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Task Force:** 1. Comment on the specificity of the goal:

Goal is well stated. See concluding general comment about streamlining the number of IPFW goals that you identify your unit goals as aligning with.

2. Comment on the goal's measures:

Like previous goals, measures and metrics are so many. They can be streamlined to prioritize the top 3 or 4.

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental profile and budget data):

Unit reports inability to attain the goal. Question: What actions can you take toward achieving this goal with your current resources?

4. Comment on the goal's relevance:

Goal is relevant within “diversification and globalization of IPFW”.

5. Comment on the timeline of the goal:

This goal has a long timeline (3 years). Please create checkpoints along the way to assess progress annually.

**Question:** Unit Goal - What is your unit goal?
Foster a culture of diversity: increase the number of women, underrepresented minorities and international citizens enrolled in the college as well as served as faculty and staff

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

I.A.1 Improve quality and fidelity of assessment process of degree/certificate programs, General Education program, and Baccalaureate Framework with dedicated resources.

I.B.2 Expand impact and profile of Honors Program.

I.C.2 Review, prioritize, and expand international agreements.

I.C.3 Promote academic programs for international market.

I.C.6 Increase support programs for international study for domestic students

1.D.1 Develop activities and experiences that promote multiculturalism as a value.

I.D.3 Build and strengthen relationships, proactive programs and services designed to encourage enrollment of students from historically under-represented groups.

I.D.4 Recruit and retain a diverse faculty and staff at all institutional levels.

I.M.1 Retention and graduation rate

I.M.4 A more diverse campus

II.A Project future regional, national, and international demand for research and collaboration.

III. A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

IV.B.3 Eliminate process barriers in enrollment management that impact student achievement.

IV.C.4 Enhance volunteer engagement in support of strategic goals and fundraising.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?
ETCSD Engineering, Technology, and Computer Science

- Develop partnership and outreach activities with different ethnic organizations in the region
- Partner with IPFW’s Office of Diversity and Multicultural Affairs to work with the high schools highly represented by minority students
- Develop ETCS-Minority Engineering and Technology Program (e.g. Minority Engineering Program, MEP) under the Student Success Center; secure scholarships, internships, and co-ops specifically designed for minority students
- Expand the mission of ETCS Chapter of Society for Women Engineers
- Develop dual degree program with colleges serving women and underrepresented groups
- Recruit faculty from women and underrepresented group
- Recruit international students through IPFW’s international partnership universities
- Establish scholarships that encourage study abroad experience
- Encourage faculty to pursue international teaching and research collaboration
- Develop summer workshops and courses that attract diversity of students including international students
- Take follow-up actions on IPFW’s Memorandum of Understanding (MOU) with its international partners

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

- Increase ETCS’s presence at events organized by women and minority groups
- Obtain scholarships specifically for women and minority students
- Increase enrollment of women and minority students especially in engineering, technology, computer science programs
- Develop a proposal to establish a Minority Engineering and Technology Program (METP)
- Increase the enrollment of international students especially from our global partnership universities
- Develop a proposal for strategic hiring of women and/or minority faculty in ETCS
- Include women faculty from the college on all faculty recruitment committees

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

No

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

Need operating budget (S&E) for ETCS-METP
Funding for one or two faculty positions

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

Competition with other colleges

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

3 years
Criterion: #11: Goal Five - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

Task Force: 1. Comment on the specificity of the goal:

The stated goal and action steps involve a large number of different types of goals and activities. Dividing these into multiple, clearer goals would be a way of clarifying. See concluding general comment about streamlining the number of IPFW goals that you identify your unit goals as aligning with.

2. Comment on the goal's measures:

The first metrics on the list provide specific targets; metrics lower on the list would benefit from specifying targeted numbers or completed items that you aim to achieve.

3. Comment on the unit’s ability to achieve the goal (include a consideration of the departmental profile and budget data):

Dividing this goal into smaller and more focused goals would help to make achievability more realistic.

4. Comment on the goal’s relevance:

Many of the action steps listed would be relevant for IPFW’s goals; focusing these actions into a clearer and more unified goal would be beneficial.

5. Comment on the timeline of the goal:

This goal has a long timeline (3 years). Please create checkpoints along the way to assess progress annually.

Suggestion: Use behavioral terms in specifying goals. This makes metrics and actions systematic and reflective of the goals. Streamline your metrics and actions to produce the top three or four in order to enhance clarity.

Question: Unit Goal - What is your unit goal?

Foster technology and leadership outreach, scholarly activities and research creativity and the creation of signature programs

Question: IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.
ETCSD Engineering, Technology, and Computer Science

I.B.1 Increase opportunities for engaged and experiential learning including service learning and internship programs.

I.C.1 Develop and promote interdisciplinary programs where there are sufficient university assets available and anticipated employment needs.

I.C.2 Review, prioritize, and expand international agreements.

1.D.1 Develop activities and experiences that promote multiculturalism as a value.

1.E.1 Identify and develop signature programs that respond to regional needs, build on faculty expertise, and uniquely distinguish IPFW from other institutions.

I.E.3 Build and strengthen relationships with regional partners to increase research and scholarly collaborations in signature programs.

I.E.4 Promote majors and programs with strong job placement opportunities in the region and beyond.

I.M.5 Signature programs

II.A Project future regional, national, and international demand for research and collaboration.

II.C Promote the development of opportunities for faculty and student engagement with the community for the application and integration of knowledge.

II.M.1 Peer-reviewed scholarly products

II.M.2 Students participating in research and scholarly activity

II.M.3 Internal and external academic collaborations

III.A Expand meaningful collaborations and research opportunities with regional, national, and global partners.

III.E Provide leadership in regional economic development.

III.M.2 Regional, national, and global collaborations

IV.B.4 Identify gaps in academic and program offerings and prioritize programs for creation, expansion, merging, or cessation.

IV.C.2 Implement a strategy for sustainable external funding of strategic priorities.

IV.C.3 Re-envision Foundation Board as fundraising leadership Board.

IV.C.4 Enhance volunteer engagement in support of strategic goals and fundraising. IV.M.2

Question: Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

High
**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

- Encourage publications of high impact and citations
- External rewards and recognition (by peers)
- Pursue external (federal, state, and industry) grants & contracts
- Develop patents, technology transfer
- Pursue Small Business Innovative Research (SBRI), joint ventures and start-ups through the network of Global Alliance for Technology Transfer and Entrepreneurship (GATTE)
- Organize and deliver technical workshops and conference
- Centers pursue interdisciplinary research
- Build critical niche and talent for ETCS
- Develop core facilities and laboratories
- Pursue MEP, TAP, TAA and IN-MAC project with industry
- Encourage faculty to serve in leadership roles within their professional associations
- Develop signature programs that support the industry clusters of northeast Indiana and the regional economic development need

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

- 100% of ETCS faculty members with research release must contribute to publishing
- 30% or more of ETCS faculty members are active in proposal writing or developing initiatives
- 25% or more of ETCS faculty members receive grants and contracts
- External fund received from grants and contracts: $500,000 per year by 2016; $750,000 by 2020
- Faculty serve on editorial boards of peer-reviewed journals; faculty appointed as fellow or officer in technical societies
- Faculty receive rewards and recognition from professional organizations
- Increase in the number of graduate students supported by external grants
- Number of patents filed and received
- Report on activities related to the number of technology transfers, start-up creation and incentives received
- A task force will develop a business plan and operation model of a signature program leveraged from industry cluster such as advanced materials, advance manufacturing, bio-medical/orthopedic devices, defense, financial and banking, food processing, information systems and technology, and nursing and healthcare. The proposed signature program should be partnered among government, industry and IPFW
- IPFW submit a proposal to NSF to form an Industry University Cooperative Research Center

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

No

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

- Need sufficient faculty development fund
- Need to provide matching fund or release time as an incentive for excellence; graduate assistants, student workers and equipment
- Return of overhead recovery is not well defined and allocated
- Strategic hiring of faculty for signature program
Indiana University-Purdue University Fort Wayne (IPFW)  
Program Write-up with Task Force Comments  
ETCSD Engineering, Technology, and Computer Science

Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

- IPFW is a non-PhD granting institution (when applying for federal grant) – partnering with West Lafayette is important
- Designated space for research and signature program is insufficient; a space utilization policy might solve part of problem
- Availability of equipment
- Not enough workforce to support the research tasks (number and talent)

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

3 years

**Criterion:** #12: Goal Six - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?
ETCSD Engineering, Technology, and Computer Science

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

**Criterion:** #13: Goal Seven - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don't have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?
**Criterion:** #14: Goal Eight - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?
ETCSD Engineering, Technology, and Computer Science

#15: Goal Nine - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.

**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write "NA" or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?

**Criterion:** #16: Goal Ten - In this criterion, you will identify your unit goals and tell us how they align to Plan 2020, how they are measured, and what resources you need to meet them.
**Question:** Unit Goal - What is your unit goal?

**Question:** IPFW Goal - What 2020 goal(s) does this unit goal align with? List as many as apply. If it does not align, you may write “NA” or clarify.

**Question:** Priority Level - Is the unit goal high, medium, or low priority? Limit your high-priority unit goals to 3 to 5.

**Question:** Actions - What action(s) does your unit plan to take to support this unit goal?

**Question:** Metrics - With what metrics will you assess progress toward accomplishing this unit goal on an annual basis?

**Question:** Resources - Are you able to accomplish this unit goal with your current resources?

**Question:** Needed Resources - If you don’t have enough resources, what additional resources do you need to accomplish this unit goal?

**Question:** Challenges - What challenges, other than financial resources, might affect your progress toward accomplishing this unit goal?

**Question:** Timeline - If achieving this unit goal will take longer than one year, what is your timeline for implementing and accomplishing it?