ABET^{+EM} CAC Student Outcomes x EM@FSE 2.0 Indicator Coverage (Nov, 2019)

Note: The EM@FSE initiative does not change how FSE programs cover or assess ABET 1-7 Outcomes

ABET^{+EM} #1 Can critically observe surroundings to both recognize and anticipate opportunities, then applies engineering principles, technical skills, science, and mathematics to analyze complex computing problems and identify potential solutions.
a) Critically observes surroundings to recognize opportunity
e) Observes trends about the changing world with a future-focused orientation/ perspective.
g) Applies technical skills/ knowledge to the development of a technology/ product
ABET^{+EM} #2 Can apply human-centered design principles, including synthesizing different kinds of information, exploring multiple solution paths, suspending judgement on new ideas, and considering the sustainability and scalability of potential solutions in order to design, implement, and evaluate a computing-based solution that meets specified computer requirements as well as users' needs and value propositions.
b) Explores multiple solution paths
c) Gathers data to support and refute ideas
d) Suspends initial judgement on new ideas
f) Collects feedback and data from many customers and customer segments.
h) Modifies an idea/product based on feedback.
i) focuses on understanding the value proposition of a discovery
j) Describes how a discovery could be scaled and/or sustained, using elements such as revenue streams, key partners, costs, and key resources.
k) Defines a market and market opportunities
q) Integrates/ synthesizes different kinds of knowledge.
ABET^{+EM} #3 Can communicate effectively with diverse audiences, articulating how a solution adds value from multiple perspectives (e.g., technological, societal, environmental, etc.).
m) Articulates the idea to diverse audiences.
n) Persuades why a discovery adds value from multiple perspectives (technological, societal, financial, environmental, etc.).
ABET^{+EM} #4 Can recognize an engineer's professional responsibilities and make informed judgments in computing practice based on legal and ethical principles. Understands that potential solutions have the potential to lead to both gains and losses. Understands how elements of an ecosystem are connected, and can make informed judgements about expected and unanticipated impacts of computing solutions.
l) Engages in actions with the understanding that they have the potential to lead to both gains and losses. and other stakeholders, and is prepared to pivot when more information becomes available and/or unexpected and undesirable outcomes arise.
o) Understands how elements of an ecosystem are connected.
ABET^{+EM} #5 Can function effectively on teams engaged in activities appropriate to the engineer's discipline, whose members have diverse and complimentary skillsets, backgrounds, and/or expertise, creating an inclusive environment characterized by shared leadership to successfully establish goals, plan tasks, and meet objectives.
p) Identifies and works with individuals with complementary skill sets, expertise, etc.