Engineering Skills from Opportunity to Business

The KEEN program is not aimed at creating new ventures, nor does the above diagram represent the linear treatment of a business development process. Rather, the skills in each block are most valuable when connected, integrated, and regularly exercised through an entrepreneurial mindset. Beyond these skills, additional attributes of an entrepreneurial mindset — including an enterprising attitude and resolute integrity — are essential.
## The Need for KEEN

The KEEN Program was established because higher education should foster both technical skills and an entrepreneurial mindset.

Higher education fails students if they are merely required to memorize information and execute routine operations. A mindset transcend a single area of study, encompassing the entire educational experience – technical and broadening studies, experiential learning, and institutional culture. Engineering programs should expose students to a broad, practical, multidisciplinary education. Technical acumen alone is not enough.

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The study of engineering and scientific principles provides people with a lifelong advantage when faced with opportunities and challenges. Engineers must have the necessary skills to analyze complex problems and create solutions. This allows them to have a positive impact on customers, society, and the economy, leading to personal satisfaction and reward.

Our deepest human needs for identity and purpose – for creativity and making a contribution to the world – can be realized through entrepreneurial mind engineering.

## Three KEEN Pillars

1. Because commerce is fundamentally the exchange of value, the success of our economy relies upon individuals who are exceptionally capable of creating value as they engineer products and services in an increasingly global marketplace.

2. In order to flourish, engineers must have a sound business case for their goods and services and understand the societal impact of their endeavors. Whether they are contributors to public or private sectors, through new ventures or corporations, engineers must be equipped with an entrepreneurial mindset if the United States is to remain economically competitive.

3. The KEEN Program was established to enable individuals to achieve personal fulfillment and a high-impact life through entrepreneurially minded engineering.
# Fostering an Entrepreneurial Mindset

## KEEN Student Outcomes

### Entering Attitude
- Exercise curiosity about the surrounding world
- Define problems, opportunities, and solutions in terms of value creation
- Assess risk
- Persist through and learn from failure
- Demonstrate resourcefulness
- Anticipate technical developments by interpreting surrounding societal and economic trends
- Identify new business opportunities

### Multidimensional Problem Solving
- Apply creative thinking to ambiguous problems
- Apply systems thinking to complex problems
- Examine technical feasibility, economic drivers, and societal and individual needs
- Act upon analysis

### Productive Collaboration
- Collaborate in a team setting
- Understand the motivations and perspectives of stakeholders

### Illuminating Communication
- Communicate engineering solutions in economic terms
- Substantiate claims with data and facts

### Resolute Integrity
- Pursue personal fulfillment as a member of a profession that creates value
- Identify personal passions and a plan for professional development
- Fulfill commitments in a timely manner
- Discern and pursue ethical practices
- Contribute to society as an active citizen

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*Entrepreneurially Minded Learning*