

1. What is your College's mission/vision and how does your organization contribute to achieving the University's vision for K-State 2025?

Response:

College of Engineering Mission Statement:

The College of Engineering serves the citizens of Kansas, the nation, and the world by providing world-class educational, research, and service programs where students and faculty can develop in their chosen disciplines and advance as successful leaders and professionals.

College of Engineering Vision Statement:

The Kansas State University College of Engineering will be a highly ranked college providing quality education within a research environment that develops engineering leaders to benefit society.

2. What are your College's/Major Unit's/Department's key activities and outcomes and how do they link to K-State 2025 themes/common elements and outcomes? Identify the University metrics that directly link with your plan in brackets.

Response: See tables below.



Theme 1. Recruit and retain diverse academic achievers from both inside and outside Kansas to produce graduates who will take the lead in generating technological solutions for and new knowledge about tomorrow's challenges.

	Intermediate (6 to 10 Years)	Long Term (11 to 15 Years)
Key Outcomes	Key Outcomes	Key Outcomes
What do we expect to happen in 5 years? A. Increase number of entering undergraduate students with ACT>28 or top 10% of their class from 207 to 230 [None] B. Increase undergraduate enrollment from 2809 to 3287 [None] C. Increase enrollment of underrepresented minority students from 201 to 300	 What do we expect to happen in 6 to 10 years? A. Increase number of entering students with ACT>28 or top 10% of their class to 260 [None] B. Increase undergraduate enrollment to 3673 [None] C. Increase enrollment of underrepresented minority students to 330 [T2-6] 	What do we expect to happen in 11 to 15 years? A. Increase number of entering students with ACT > 28 or top 10% of class to 270 [None] B. Increase undergraduate enrollment to 3750. [None] C. Increase enrollment of underrepresented minority students to 360
 [T2-6] D. Increase enrollment of women students from 406 to 460 [T2-6] E. Increase engineering graduates from 423 to 505 [None] 	 D. Increase enrollment of women students to 530 [T2-6] E. Increase number of engineering graduates to 555 [None] 	 [T2-6] D. Increase enrollment of women students to 560 [T2-6] E. Increase number of engineering graduates to 586 [None]
 F. Improve 6-year graduation rate of all new freshmen including underrepresented groups from 44% to 45% [B-7, T2-7] G. Improve freshmen-to- sophomore retention rate from 67% to 70% [B-6,T2-7] H. Increase number of undergraduate students supported in research from 	 F. Improvements 6-year graduate rate to 47% [B-7, T2-7] G. Improve freshmen-to-sophomore retention rate to 73% [B-6,T2-7] H. Increase in number of 	 F. Improve 6-year graduate rate to 49% [B-7, T2-7] G. Improve freshmen-to- sophomore retention to 75% [B-6, T2-7] H. Increase number of undergraduate students supported in research to 230 [B-8, T2-4]
	 What do we expect to happen in 5 years? A. Increase number of entering undergraduate students with ACT>28 or top 10% of their class from 207 to 230 [None] B. Increase undergraduate enrollment from 2809 to 3287 [None] C. Increase enrollment of underrepresented minority students from 201 to 300 [T2-6] D. Increase enrollment of women students from 406 to 460 [T2-6] E. Increase engineering graduates from 423 to 505 [None] F. Improve 6-year graduation rate of all new freshmen including underrepresented groups from 44% to 45% [B-7, T2-7] G. Improve freshmen-to-sophomore retention rate from 67% to 70% [B-6,T2-7] H. Increase number of 	 What do we expect to happen in 5 years? A. Increase number of entering undergraduate students with ACT>28 or top 10% of their class from 207 to 230 [None] B. Increase undergraduate enrollment from 2809 to 3287 [None] C. Increase enrollment of underrepresented minority students from 201 to 300 [T2-6] D. Increase enrollment of women students from 406 to 460 [T2-6] E. Increase engineering graduates from 423 to 505 [None] F. Improve 6-year graduation rate of all new freshmen including underrepresented groups from 44% to 45% [B-7, T2-7] G. Improve freshmen-to-sophomore retention rate from 67% to 70% [B-6, T2-7] H. Increase number of undergraduate students supported in research from



	 Increase Ph.D. enrollment from 150 to 190 [T3-7] J. Increase number of Ph.D. graduates from 14 to 25 per year [B-5, T3-6] 	 Increase Ph.D. enrollment to 245 [T3-7] J. Increase Ph.D. graduates to 27 per year [B-5, T3-6] 	 Increase PhD enrollment to 310. [T3-7] J. Increase number of PhD graduates to 32 per year. [B-5, T3-6]
	2025 Linkages		
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes
Theme 1. RSCAD – Increase capacity to recruit and retain highly talented, diverse graduate students Theme 2. Undergraduate Educational Experience Theme 3. Graduate Scholarly experience Common elements: Funding, Diversity	 T1, T3: Tuition waivers for all GRAs T1, T3: Competitive compensation and support available to GRAs, GTAs and GAs T2: Successful recruitment and retention strategies that address our entire student population T2: Excellent, customized academic advising and services available to all students to support their success and degree completion T2: Improved six-year graduation and retention ratios T3: Outstanding mentoring of graduate students 	 T2: Ongoing improvement of six- year graduation rates and retention ratios T3: Increased number of doctorates awarded T3: Increased funding for graduate research and training 	 T2: Freshman to Sophomore retention ratios comparable to benchmarks institutions T2: Six-year graduation rates comparable to benchmark institutions T3: World-class reputation as a preferred destination for outstanding graduate students T3: Doctorates awarded comparable to benchmark institutions T3: Stable funding for graduate research and teaching assistants competitive with benchmark institutions



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Key Activities	Short Term (1 to 5 Years)	Intermediate (6 to 10 Years)	Long Term (11 to 15 Years)
	Key Outcomes	Key Outcomes	Key Outcomes
 Regracines Recruit and retain outstanding faculty with teaching and scholastic excellence. Invest in upgrading classroom technology, classroom expansions, and new construction Employ teaching assistants (e.g., graders, lab assistants) to enhance teaching experience, especially for large classes Hire additional faculty members to improve student-faculty ratio Provide incentives and opportunities for continuous development of faculty Develop comprehensive advising programs with adequate support at the department level Work with the university to provide tuition remission for faculty. Pursue recruitment of NAE members (or equivalent) as faculty in the college. 			,



2025 Linkages			
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes
Theme 2. Undergraduate Educational Experience Theme 5. Faculty and Staff Theme 6. Facilities and Infrastructure Common Element: Technology	 T2: Improved six-year graduation rates and retention ratios T2: Excellent, customized academic advising and services available to all students to support their success and degree completion T2: Effective evaluation practices that recognize and reward teaching, advising, and life-long learning/professional development T2: Effective system in place that supports and promotes teaching excellence T5: Effective evaluation processes that result in accountable faculty and staff with a clear understanding of their job expectations and how they contribute to the University's mission T5: Career-long learning recognized by the university and its employees as a shared value and responsibility T6: Robust and reliable information technology ensuring business continuity and consistent with the achievement of the highest quality levels of support for research, instruction, student services, and administration 	 T2: Excellent reputation for high quality teaching and advising that prepare students for their professional, community, social and personal lives T2: Superior and diverse faculty recognized for reaching excellence T2: Ongoing improvements in sixyear graduation rates and retention rates. T5: Faculty and staff current with developments in their fields and skills needed to achieve excellence in performing their jobs T5: Successful recruitment and retention of a talented and highperforming, diverse workforce T6: Enhanced campus community experience and collaborative learning and working environments promoted by facilities that support multidisciplinary work and integrated interactions between students, faculty, researchers, staff and administrators 	 T2: Faculty teaching and advising awards comparable to our benchmark institutions T2: Freshman to Sophomore retention ratios comparable to benchmark institutions T5: Talented and high performing, diverse workforce recognized for excellence and award-winning faculty and researchers T6: High quality, technology enabled, flexible and adaptable classroom space appropriate to the evolving needs of the learning environment and readily available to K-State faculty and students



Theme 3. Establish focused, high-impact, nationally recognized research programs and build a prominent faculty that will enhance the college's national and international reputation.

Key Activities	Short Term (1 to 5 Years)	Intermediate (6 to 10 Years)	Long Term (11 to 15 Years)
	Key Outcomes	Key Outcomes	Key Outcomes
 What we plan to do 1. Establish and promote high-impact research programs by building on existing strengths and hire faculty whose expertise complements these 	What do we expect to happen in 5 years? A. Increase number of scholarly publications in journals and	What do we expect to happen in 6 to 10 years? A. Increase number of scholarly	What do we expect to happen in 11 to 15 years? A. Increase number of
 Allocate resources to invest in high-impact research areas 	conferences from 217 to 240 per year [T1-4]	publications to 265 per year [T1-4] B. Increase in number of fellows,	scholarly publications to 290 per year [T1-4]
 Secure substantial number of tenure-track faculty positions to embark upon proactive searches for nationally prominent faculty; attract them with high salaries (e.g., through endowed chairs), competitive start-up packages, and other inducements. 	 B. Increase in number of fellows, editors, honors, and significant national/ international activities from 266 to 300 [T5-4] 	editors, honors and significant national/international activities from to 330 [T5-4] C. Increase number of endowed	 B. Increase in number of fellows, editors, honors and significant national/ international activities to 360 [T5-4]
 Provide funds and other inducements to retain top-quality faculty Pursue recruitment of NAE members (or equivalent) as faculty in the college. 	C. Increase number of endowed chairs and professorships from 29 to 32 [T5-2]	chairs and professorships to 36 [T5-2]	C. Increase number of endowed chairs and professorships to 40. [T5-2]
 Establish and maintain a diverse faculty Establish efforts for faculty to gain national honors and to contribute national service to government agencies and professional 	 D. Increase enrollment from 150 to 190 and number of PhD graduates from 14 per year to 22 per year [B-5, T3-6, T3-7] 	D. Increase PhD enrollment to 245 and number of PhD graduates to 27 per year [B-5, T3-6, T3-7]	D. Increase PhD enrollment to 310 students, and number of PhD graduates to 32 per year. [B-5, T3-6, T3-7]
societies.8. Fund faculty visits/collaborations with other campuses9. Provide opportunities for undergraduate	E. Increase research expenditures from \$23M to \$27M [B-1, T1-2]	E. Increase research expenditures to \$37M annually [B-1, T1-2]	E. Increase research expenditure to \$46 million annually. [B-1, T1-2]
research	 F. Increase in number of college–funded assistantships/scholarships for PhD from \$298K to \$475K per year [T3-1, T3-2, T3-3] 	F. Increase PhD student funding to \$525K per year. [T3-1, T3-2, T3-3]	F. Increase amount of college support for PhD students to \$600K per year. [T3-1, T3-2, T3-3]



	 G. Increase number of collaborative projects that Engineering faculty is involved in from 382 to 420 [T1-1] H. Recruit an NAE member (or equivalent) as faculty in the college by 0-1 [B-3] I. Increase number of undergraduate students involved and supported in research from 149 to 180 [B-8, T1-1, T2-4] 	 G. Increase number of collaborative projects that Engineering faculty is involved in from 464 [T1-1] H. Continues recruitment of an NAE member (or equivalent) as faculty in the college to 0-1 [B-3] I. Increase number of undergraduate students involved in research to 220 [B-8, T1-1, T2-4] 	 G. Increase the number of collaborative projects to 512 [T1-1] H. Recruit 1-2 NAE members as faculty in the college. [B-3] I. Increase number of undergraduate students involved in research to 230. [B-8, T1-1, T2-4]
	2025 Linkages		
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes
Theme 1: Research, Scholarly and Creative Activities, and Discovery (RSCAD) Theme 3: Graduate Scholarly Experience Theme 5: Faculty and Staff Common Element: External Constituents Common Element: Funding Common Element: Communication and Marketing	 2025 Key Outcomes T1: Increased intellectual and financial capital to support <i>RSCAD</i> T1: More clusters/centers of collaborative RSCAD focus T1: Increased funding for investigator-based research, research centers and graduate training grants T1: Successful recruitment, retention, evaluation, compensation, and rewards strategies in place to support RSCAD needs T1: Increased visibility, and appreciation for research, discovery and scholarly and creative activities T3: Expectation of excellence for the graduate scholarly experience T3: Increased capacity to secure funding for graduate research and teaching 	 2025 Key Outcomes T1: Intellectual and financial capital in place for expanded RSCAD efforts T1: Greater proportion of nationally and internationally recognized award winning faculty in RSCAD programs T1: Nationally and internationally recognized research centers T3: Increased participation by our graduate students in unique high level learning and experiential training T3: Increased funding for graduate research and teaching 	 2025 Key Outcomes T3: Stable funding for graduate research and teaching competitive with benchmark institutions T5: Talented and high performing, diverse workforce recognized for excellence and award- winning faculty and researchers T5: Stable funding available for recruitment and retention of top level faculty and staff



Theme 4: Establish lifelong connections with alumni and capitalize on this network, corporate partnerships, and related research/scholarship within the college to strengthen the education experience, research/scholarship quality, and financial support of the college

Key Activities
 What we plan to do Establish and maintain an alumni email system, a list of alumni contacts by company, and engage via social media (Facebook, LinkedIn, etc) Encourage faculty involvement that establish ties to industry, state agencies and alumni for the purpose of developing research, scholarship, and educational experiences for students and faculty Work with the College Development staff to strengthen ties with alumni and industries to garner funding Schedule more alumni events such as reunions, scholarship recognition banquets, invitations to student events, etc., and use Open House to establish strong bonds with alumni. Encourage department to send newsletters and reports to its alumni. Promote student connections with the college that foster long-term relationships after graduation via student clubs, events, and competitions Implement and maintain a comprehensive marketing and communication plan.



	2025 Linkages				
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes		
Theme 1: RSCAD Theme 4: Engagement, Extension, Outreach and Service Theme 5: Faculty and staff Common Elements: External Constituents	 T1: Increased intellectual and financial capital to support RSCAD T4: Increased number and diversity of faculty and staff participating in Engagement T5: Total compensation competitive with aspirant university and regional employers for faculty and staff in high priority areas 	 T1: Intellectual and financial capital in place for expanded RSCAD efforts T1: Greater proportion of nationally and internationally recognized award-winning faculty in RSCAD programs T4: Increased appreciation by K- State graduates for lifelong involvement in engagement and service T5: Successful recruitment and retention of a talented and high performing, diverse workforce 	 T1: Fifty nationally recognized K-State researchers, a high proportion of which are members of their national academies T4: Nationally and internationally recognized as leaders in Engagement on a global scale T5: Talented and high performing, diverse workforce recognized for excellence and award- winning faculty and researchers 		



Theme 5. Prepare students and faculty for the changing global environment to create a culture of diversity, creativity, innovation, and entrepreneurship.

Key Activities	Short Term (1 to 5 Years)	Intermediate (6 to 10 Years)	Long Term (11 to 15 Years)
	Key Outcomes	Key Outcomes	<i>Key Outcom</i> es
 What we plan to do Promote international experience for undergraduates through the Study Abroad Scholarship Program. Facilitate a path for high-quality international students to come to K-State. Promote international research and scholarly collaborations, and attendance at international meetings. Conduct college-wide multicultural competency training. Promote internships that allow students to work in Kansas industry settings, gaining real-world experience 	 What do we expect to happen in 5 years? A. Increase number of students with international experience (exchange programs, Study Abroad, cultural trips during semester breaks, etc.) from 18 to 28 per year [T2-1] B. Increase number of faculty participating in international scholarly activities and travel from 58 to 64 [T5-4] C. Increase in number of Kansas industries participating in internship programs from 42 to 45 [None] D. Increase in number of students with industrial experience [T2-2] 	 What do we expect to happen in 6 to 10 years? A. Increase number of students with international experience (exchange programs, Study Abroad, cultural trips during semester breaks, etc.) to 36 per year [T2-1] B. Increase faculty involvement in international scholarly activities to 70 [T5-4] C. Increase in number of Kansas industries participating in internship programs to 48 [None] D. Increase in number of students with industrial experience [T2-2] 	 What do we expect to happen in 11 to 15 years? A. Increase number of students with international experience to 46 per year [T2-1] B. Increase number of faculty with international experience to 78 per year. [T5-4] C. Increase in number of Kansas industries participating in internship programs to 50 [None] D. Increase in number of students with industrial experience. [T2-2]



2025 Linkages			
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes
Theme 2: Undergraduate Educational Experience Theme 3: Graduate Scholarly Experience Theme 4. Engagement Theme 5: Faculty and Staff Common Element: Diversity Common Element: International	 T2: Engaged students benefitting from high impact educational practices used by excellent faculty and staff across the university T3: Expanded partnerships industry and government to provide high level learning and experimental training opportunities for graduate students T4: Increased participation by undergraduates in expanded opportunities for meaningful Engagement experiences T4: Enhanced visibility and appreciation of Engagement and its interconnectedness with research and education within our university community 	 T2: Superior and diverse faculty recognized for teaching excellence T2: All UG students engaged in a diversity of experiences that expand their viewpoint T3: Expanded reputation for outstanding graduates with critical skill sets needed to excel in their careers in a global environment T3: Increased number of nationally and internationally recognized award-winning graduate faculty T4: Exposure on a national level as a leader/partner engaged in a significant social, political, health 	 T2: An undergraduate educational experience recognized as one of the best among the nation's Top 50 Public Research Universities T5: Talented and high performing, diverse workforce recognized for excellence and award-winning faculty and researchers



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Key Activities	Short Term (1 to 5 Years) Key Outcomes	Intermediate (6 to 10 Years) <i>Key Outcomes</i>	Long Term (11 to 15 Years) <i>Key Outcomes</i>
 What we plan to do Identify and respond to critical needs for technical assistance and educational outreach that complement research and scholarly activities within the college and have a direct impact on government organizations/agencies and the private sector in Kansas. Identify and tap into state and national funding sources, both public and private, which will be sustainable and will complement existing university funding. Know the latest techniques utilized by other land-grant institutions for conducting large-scale information dissemination in order to increase the efficiency of delivering and receiving information. Network with selected state-level public and private entities to determine their short- and medium-term needs for data and information. 	 What do we expect to happen in 5 years? A. Increased in number of requests for technical assistance and educational outreach from within Kansas and the U.S., and from outside the U.S. [None] B. Improved response from public and private entities to technical assistance and educational outreach programs offered by the college measured by outcomes such as number of outreach presentations, workshops/training sessions conducted, and impact of mitigation and conservation techniques [T4-4] 	 What do we expect to happen in 6 to 10 years? A. Increased in number of requests for technical assistance and educational outreach from within Kansas and the U.S., and from outside the U.S. [None] B. Improved response from public and private entities to technical assistance and educational outreach programs offered by the college measured by outcomes such as number of outreach presentations, workshops/training sessions conducted, and impact of mitigation and conservation techniques [T4-4] 	 What do we expect to happen in 1^o to 15 years? A. Increased in number of requests for technical assistance and educational outreach from within Kansas and the U.S., and from outside the U.S. [None] B. Improved response from public and private entities to technical assistance and educational outreach programs offered by the college measured by outcomes such as numbe of outreach presentations workshops/training sessions conducted, and impact of mitigation and conservation techniques. [T4-4]
	2025 Linkages		
2025 Common Elements/Themes	Short Term (1 to 5 Years) 2025 Key Outcomes	Intermediate (6 to 10 Years) 2025 Key Outcomes	Long Term (11 to 15 Years) 2025 Key Outcomes
Theme 4: Engagement, Extension, Outreach, and Service Common Element: International Common Element: Funding	 T4: Increased recognition of our services as a source of expertise, information, and tools for disciplines worldwide T4: Increased extramural funding for <i>Engagement</i> initiatives at the 	 T4: Exposure on a national level as a leader/partner engaged in significant social, political, health, economic and, environmental issues T4: Increased capacity to 	 T4: Nationally recognized as a leader in and model for a re- invented and transformed land–grant university integrating research, education, and engagement

K-State 2025 Strategic Direction Action Plan and Alignment Template

December 13, 2012



 local, state, national, and international level T4: Recognition as leaders in <i>Engagement</i> within our state and nation 	respond to emergencies worldwide	 T4: Nationally and internationally recognized as leaders in <i>Engagement</i> on a global scale T4: Recognized as a leader in <i>Engagement</i> reaching both rural and urban communities
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3. Identify the K-State 2025 Visionary Goal key benchmarks (metrics) that are supported by your action and alignment plan (please check all that apply).

Total research & development expenditures	⊠ Endowment pool	☑ Number of National Academy members
☑ Number of faculty awards	Number of doctorates granted annually	Freshman to sophomore retention rate
Six-year graduation rate	Percent of undergraduate students involved in research	□ None

4a. What resources and/or opportunities <u>exist</u> for your College/Major Unit/Department to achieve its vision and outcomes? Response:

The major resource that the College of Engineering has is its dedicated faculty and staff. The College also has the following offices to help achieve its objectives:

- Recruitment and Leadership Development,
- Retention, Diversity and Inclusion
- Student Services
- Development
- Engineering Communications
- Engineering Extension
- Engineering Experiment Station

The College has several research centers which are engaged in excellent research and development activities.



4b. What resources and/or opportunities are <u>needed</u> for your College/Major Unit/Department to achieve its vision and outcomes? Response:

To achieve the goals, the College will need the following resources:

- Additional faculty lines (20 lines coming from funds from UEIA and matching tuition fee)
- Incentives to recruit and retain high-performing faculty including compensation packages, endowed chairs/professorships and startup packages (10 endowed chairs/professorships coming from UEIA match from private sources)
- Funds to expand scholarship programs (focus of the Capital Campaign)
- Funds to expand recruitment and retention programs (focus of the Capital Campaign)
- Improvements in facilities and research infrastructure (focus of the Capital Campaign)
- State and Foundation funds for scholarships, graduate student tuition waivers and stipends
- Funds to hire instructors to enable research-active faculty to conduct more research (10 lines coming from funds from UEIA and matching tuition fee)

5. How do you propose to acquire the resources needed for your College/Major Unit/Department to accomplish its vision and outcomes? Response:

We plan to acquire the resources as follows:

- Request central administration for additional faculty and instructor lines
- Request central administration for improvements in facilities and research infrastructure
- Pursue development opportunities to raise funds for scholarships and endowed positions
- Pursue grant opportunities to create a stable funding base for students
- Leverage UEIA funds to improve teaching and classroom facilities

Additional notes:

- Theme 1. B and E: Used UEIA baseline data.
- BG is Bette Grauer, ML is Mike Lynch, FB is FactBook, DH is Department Head, LR is Lori Rogge, and BS is Bruce Snead.
- Data will be reviewed again after departments submit their plans and then adjusted accordingly.