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I. Introduction

As detailed below, the critical consensus is that the job landscape is in the process of changing dramatically due to the increased use of automation, Machine Learning (ML) and Artificial Intelligence (AI) by businesses, companies and institutions likely to employ current and future graduates of colleges and universities. One of the strategies that can ensure that graduates are able to compete and thrive in this environment is to focus their educational experiences on those skills that are immune this increased use of ML/AI in the workplace—skills that are not currently available on a widespread basis. Kentucky State University's QEP, "Learning that Works," is intended have students acquire learning that will be remain relevant for their lifetimes and to prepare them for the work environment of the 21st century. The aim of "Learning that Works" is to teach students skills that will aid them in career readiness and advancement. As part of teaching them the concept of Design Thinking, students will acquire skills in problem-solving, teamwork, oral and written communication, and cultural agility.

This QEP is designed to fit the particular attributes of Kentucky State University, a midsized HBCU/1890 Land Grant institution located in Frankfort, Kentucky: the University seeks to produce students who will be tomorrow's leaders and possess skills that will allow them to compete and thrive in the contemporary and future workplace, particularly in the Commonwealth of Kentucky. As the smallest of the state's regional universities by far, KSU is uniquely positioned to be agile enough to make relatively quick and sweeping improvements to curriculum and instruction, and we have a history of doing so. For example, within the past three academic years, we successfully established Corequisite programs in Math, English and Reading, we instituted a University College and completely revised our University Orientation classes, and we are currently piloting classes that combine English and Reading instruction.

"Learning that Works," will create a "signature program" that will set Kentucky State University apart from the other of the state's regional institutions, particularly the two largest state institutions, University of Kentucky and University of Louisville, both of which are located within 50 miles of KSU. This QEP is intended to have the students acquire skills that will make them competitive in the workplace while still allowing the advantages in career flexibility and advancement of a liberal studies education, the University's other distinction. This QEP addresses the University's institutional priorities that deal with on improving recruitment, retention and graduation rate; the distinction brought by this QEP will allow us to recruit and maintain a student body that values innovative learning.

"Learning That Works" uses as its theoretical framework Joseph E. Aoun's forward-thinking study **Robot-Proof: Higher Education in the Age of Artificial Intelligence** (2017). Aoun argues that colleges and universities need to reconsider their focus to produce graduates with "robot-proof" skills to deal with the continued and increased use of automation and ML/AI in the workplace. While Aoun's theories seem sound, to date no attempt has been made to put them into practice in a manner that will result in students who matriculate with these "robot-proof" skills. "Learning that Works" has as its starting point the attempt to implement a practical "solution" to this automation/AI problem, which is only being predicted to intensify, so that Kentucky State University produces graduates with the skills needed in this workforce environment.

"Learning that Works," taps into the burgeoning field of Design Thinking, which offers a framework by which students can acquire the skill of what Aoun calls Systems Thinking early in their coursework. Doing so reinforces essential secondary attributes that have been identified by Aoun and others, such as teamwork and cultural agility, while also making the most of KSU's new highly structured University College system. As Kentucky State University is in the midst of revising and reforming its general education core, this QEP will begin the process of having these "robot-proof" skills pervade all of the courses taught

as part of University College. As a starting point for future instructional transformation, the proposal calls for the creation of a three-course sequence, required of all students as part of the core, and culminating a general education capstone course that would assemble students into teams and, through applying creative and critical thinking processes like Design Thinking, tackle existing problems in communities, institutions, or businesses. By beginning the "robot-proo ng" process with required, general-education classes, this QEP will eventually impact the education of the entire undergraduate student body.

Quality Enhancement Plan:

II. Research and Institutional Goals

Campus and State Research

While the focus of the QEP is on future workforce needs, to get a sense of current outcomes, Kentucky State University, as a state-supported institution, participates in research conducted by the Kentucky Center for Education and Workforce Statistics, which issues an annual Post-Secondary Feedback Report. The Postsecondary Feedback Reports take a deep look into what happens to Kentucky graduates after they leave college. Each report provides in-depth data by institution about which degrees are pursued, the employment of graduates as well as information about students who go on to pursue advanced degrees, average wages for various degree categories, and some insights into what happens to students who leave without a credential and do not continue their education elsewhere. Reports are created for each of the commonwealth's public 4-year, public 2-year and independent institutions. KSU's report, which can be accessed through the Center's website, shows that wages and employment of our graduates, and across the state in general, tend to lag behind national averages, indicating a need to adjust the skills being taught. The Office of Institutional Research at KSU also conducts outcomes-based surveys to give us a picture of employment after graduation: the Alumni Career Success Survey combines the results of graduates from multiple years in one chart, and the Graduating Survey also offers statistics on the preparations and post-graduate plans of our graduates. As with the statewide instrument, there are also indications that there is room for improvement in wages and career success in our graduates.

State Initiatives

As a state-supported university, Kentucky State University has as an institutional priority serving the needs of the citizens of the Commonwealth of Kentucky. The proposal for this QEP builds on the intent of HB 3: recent legislation passed by the State Legislature that mandates teaching the skills (grouped under the umbrella of workforce "ethics") that students in the public education system will need to possess in order to join the 21st century workforce in Kentucky: http://www.lrc.ky.gov/recorddocuments/bill/18RS/HB3/bill.pdf. Of particular note is the first point on the list: "Adaptability, including an openness to learning and problem solving, an ability to embrace new ways of doing things, and a capability for critical thinking." It is this adaptability that is one of the key components of "Learning that Works." In a very recent study conducted by the Brookings Institution, Kentucky placed second in the nation in the likelihood of having animation and artificial intelligence adversely impact the workforce (Muro, Maxim and Whiton, 2019), making these "robot-proof" skills particularly pertinent at an institution that sends 72% of its graduates into the Kentucky workforce, according to our most recent data. In recent years, Kentucky State University has been increasing its involvement with P-12 education in our service area, primarily through expansion of our dual credit courses, so this fits well with the emphasis on the skills learned in P-12 in the higher education classes taken by these students. This QEP, particular the group project in the capstone class, also reinforces the first goal of the Kentucky Skills U Employability Standards: "Effectively contribute to a team through cooperation, leadership, and giving and accepting critical feedback to work toward a common goal." For the students of Kentucky State University, the common goal will be enabling them to see how their learning will work, does work and can work in their obo6-

and graduation rates," since it focuses on both general education skills and on career readiness, the latter of which is referenced in goal 2.e.:

> 2.e Link every academic program to occupation outlook data and review curricula to ensure programs are supporting career readiness. Utilize outside advisory committees to assist in evaluating curricula especially courses that are targeted to include internships, and research and employment opportunities.

Faculty professional development, as part of the process of shifting pedagogy and making Design Thinking a cornerstone of the curriculum, also ts goal 2.m: "Develop a plan to enhance faculty professional development opportunities with a focus on developing teaching skills and engaging students through high-impact teaching and learning strategies."

As described below, the University has created a new three-course sequence to serve as a "launch pad" and "proving ground" for integrating teaching of Design Thinking throughout the curriculum. The nature of these classes t goal 2.s of the Strategic Plan: "Develop processes to bolster the University's General Education Core in order to foster cross-disciplinary, experiential, and inquiry-based learning." In creating a project-based, general education capstone as a culmination of this new three-course "launch pad" sequence for the Design Thinking approach, this segment would ful ll another key aspect of one of the institutional priorities contained in the University's Strategic Plan:

> 2.ee Form a group of faculty and research supervisors in charge of capstone courses to develop multidisciplinary, cross functional projects. Teams of seniors from across disciplines will form the Capstone Project teams. Team members with di erent interests and skills will contribute to various aspects of the project such as business aspects, environmental impact, community impact, aesthetic aspects, technical requirements, and the like.

As a mid-sized university with teaching as its core mission, Kentucky State University is well poised to undertake this kind of fresh approach. As noted in its Mission Statement, the University seeks to enable "productive lives" that contribute even beyond local or regional interests to the "diverse global economy":

> Kentucky State University is a public, comprehensive, historically black land-grant university committed to advancing the Commonwealth of Kentucky, enhancing society, and impacting individuals by providing quality teaching with a foundation in liberal studies, scholarly research, and public service to enable productive lives within the diverse global economy.

Other Institutional Goals

Kentucky State University is also currently reviewing its Liberal Studies Core in order to make it more e ective and to reduce the number of credit hours required to 33-36 so that students have more room in their schedules for classes in their majors and can keep on track to graduate in four years. In order to avoid working at cross purposes, the new courses in Humanics will replace the current required sequence in Integrative Studies with classes in Humanics, described below, rather than on adding required classes to the Core. The new courses will introduce the core concept of Design Thinking and show them traditions in intellectual history, allowing them to trace the ideas of progress, change, innovation, through multiple cultural and social lens, and then applying what they have learned in solving community-based problems.

As indicated in the University's Mission Statement, one of the institutional priorities of Kentucky State University is education in the Liberal Studies. This broad approach to learning allows students to be exposed at multiple levels to essential communication skills, quantitative competencies, and critical thinking methodologies associated with the production of artistic works, innovations in science, computational reasoning, and trends and transformations in intellectual and social history. As a result of this liberal studies aspect of the mission, our General Education sequence focuses on the Liberal

Studies, and "Learning that Works" is intended to meet this institutional priority by teaching essential critical thinking, inquiry, analysis, teamwork, and communication skills that are seated in the Liberal Studies core curriculum. This QEP is intended to keep some of the same foundational goals that fulfill the University's mission while also adding as goals the outcomes for the QEP, as detailed below. While teaching a new set of skills in Design Thinking, the course sequence in Humanics that is being added to the Liberal Studies Core (to replace classes in Integrative Studies that are currently core requirements) also reflects the and builds upon the broad Liberal Studies goals of the institution rather than seeking to supplant these mission-critical skills. For example, the QEP builds upon the following Liberal Studies outcomes, as found in the University Catalogue:

1. Knowledge of Human Cultures and the Physical World:
    Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts, the KSU student will engage with big questions, both contemporary and enduring, through study of core texts and primary source material.

The interdisciplinary nature of the QEP will build upon this goal, which will also be reflected in the outcomes of the rest of the general education courses as they are revised and refined. For the new course sequence that supports the QEP, in particular, the emphasis will be on "big questions" involving the development of the contemporary world and the future implications of the continuing development of the technologies that surround us. The QEP will also entail the acquisition of crucial "literacies and skills," as described below, and the proposed capstone project will allow students to engage groups outside

III. Literature Review

Automation, Machine Learning, Arti cial Intelligence and the Future of Work

Predictions involving the impact of automation and arti cial intelligence on the workforce of the near future all reach the same consensus: these forces will profoundly alter the employment landscape that current college and university students will have to negotiate after graduation. For example, a two-year study from McKinsey Global Institute (2017) suggests that by 2030, intelligent agents and robots could eliminate as much as 30 percent of the world's human labor. This study implies that the automation revolution could rival in its impact on American workers the move away from agricultural labor during the 1900s in the United States, and more recently, the explosion of the Chinese labor economy and loss of American manufacturing jobs. Depending upon the speed and scale of adoption, automation could displace between 400 and 800 million jobs by 2030, requiring as many as 375 million people to switch job categories entirely.

Many jobs require additional and very human qualities like communication, empathy, creativity, strategic thinking, questioning, and dreaming. Collectively, we often refer to these qualities as "soft skills," but don't let the name fool you; these soft skills are going to be hard currency in the job market as AI and technology take over some of the jobs that can be performed without people.

One potential solution to a work environment in which, according to research from the World Economic Forum (2018), by 2025, machines will perform more current work tasks than humans (compared to 71% being performed by humans today), is to teach new skills to existing workers. The World Economic Forum's report, The Future of Jobs 2018, covering 12 industries and 20 developed and emerging economies (which collectively account for 70% of global GDP), however, finds that while 54% of employees of large companies "would need significant re- and up-skilling in order to fully harness the growth opportunities offered by the Fourth Industrial Revolution . . . just over half of the companies surveyed said they planned to reskill only those employees that are in key roles while only one third planned to reskill at-risk workers." One way to cover this gap, of course, is to ensure that a future workforce emerges from institutions of higher learning already in possession of the "soft" skills necessary to reap the benefits of this continuing trend where some skills become obsolete while others become even more highly valued. The more on-target higher education becomes with teaching these "robot-proof" skills, the more immune graduates in the workforce become to the vagaries of this environment where employers might or might not take on the responsibilities for "reskilling" their employees.

This forthcoming transformation of employment calls for a different approach to higher education that emphasizes these sorts of higher-order skills in order to prepare students for what awaits them after graduation. This QEP, "Learning that Works," is designed to institute what has been termed "21st-Century Learning":

> The latest reform movement in education, known as 21st-Century Learning, is in response to the transition from a primarily industrial-based economy to a knowledge-based one. 21st-Century Learning demands that educational organizations become more receptive to societal changes and provide educational services that can make the contributions needed to sustain our economic position in the world. (de Campos, 2014)

So Aoun offers a way to think about de Campos' call for an educational approach that is more responsive to today's needs (and those of the near future) than a more traditional approach is. Given the quickly expanding technologies of Machine Learning (ML), Artificial Intelligence (AI) and automation, as noted above, Aoun calls upon colleges and universities to shift attention away from old habits of silo-based thinking to consider the skills that will prove "robot-proof." He organizes these under a field he calls "humanics," which includes human literacy, technological literacy, and data literacy. According to Aoun's theories, the "learning ecosystem" has four components: human literacy, cultural agility, critical thinking and creativity. At the course level, a curriculum which follows Auon's theories would feature:

- Explicit educational strategies addressing the four cognitive capacities: critical thinking, systems thinking, entrepreneurship and cultural agility (empathy, discretion, and nuance).
- Macro- and micro-learning: power to recognize and address challenges with understanding, empathy, collaboration, and problem-solving actions.
- Explicit learning across the curriculum.
- Project-based experiential learning.
- Real world experiential learning.

Across the learning experience, the classes should blend with activity and be augmented by experience (content/source to creativity/problem solving to application).

Addressing the Gap in the Literature

The most obvious gap in the literature on the impact of automation and ML/AI on employment is that there exists no successful strategy to address the problem of producing graduates/employees that will not need to be "re- and up-skilled." While Aoun's theories are intriguing and provide sound theory for addressing the problem, his theories lack real-world application. "Learning that Works" seeks to address that gap that exists between a well-defined problem and a "solution" that is only theoretical.

KSU's QEP, "Learning that Works," proposes to emphasize the four components in the "learning ecosystem" in order to produce students who are prepared for not only the current workforce environment but also for a future workforce environment that will most probably feature an increasing role for automation and ML/AI. By teaching what Aoun terms "robot-proof" skills, the University's student body will be prepared to lead "productive lives within the diverse global economy," as our Mission Statement specifies. Indeed, each of Aoun's "literacies" will be touched upon in the "launch pad" sequence of classes, described below, that will serve as models for future curricular revision, particular the ongoing efforts to reform the General Education sequence required of all students. This sequence will culminate in a capstone project wherein students will work in teams and with those outside the academy (human literacy) and conduct research and synthesize information (technological literacy and data literacy). These classes, which follow Aoun's theories, will constitute a first step toward a wider adoption of this approach in other classes in the General Education core, as well as classes that support major and minor programs. The new courses will serve as a proving ground to determine "what works" in practical application, as Aoun's theories remain untested in a real-world higher education environment.

Systems Thinking

One approach in particular that the QEP will incorporate is Systems Thinking. As Aoun defines the term,

> Systems Thinking is a critical cognitive capacity for anyone in a position of leadership but also for anyone attempting to discover new knowledge, launch a business, or create something original. It sees the details and the entire tableau, exercising our mental strength to weigh complexity while also testing our grasp on multiple strands of thought.

Systems Thinking thus allows one to see the bigger picture and consider how smaller parts interconnect to make up the whole. While a computer might be programmed to perform ever more sophisticated tasks, including assessing massive amounts of complicated data that it would take a team of humans weeks to process, the possibility is very far off for ML/AI to be able to look at the larger picture and apply metacognitive criteria. This is something that only humans possess at present, and by fostering these skills in its students, Kentucky State University will produce graduates who are adaptable to the ever-changing needs of the 21st century workforce.

Design Thinking

Aoun's call for teaching Systems Thinking does not clearly specify a way to teach this skill. A concrete way of encouraging Systems Thinking in KSU students is to teach them Design Thinking, the parts of which are explained below. Design Thinking has been well-established as a successful strategy for addressing a wide range of problems, and there are ample professional development opportunities for our faculty to acquire skills in Design Thinking, ranging from [forthcoming conferences](#) to [online courses](#) to an online ["crash course" from Stanford's d-school](#) (mentioned below), in addition to other resources like inviting

an expert to campus to teach a seminar in the concepts. Because of the widespread adoption of Design Thinking, the acquisition of this skill will be applicable and relevant in a wide range of occupations that our graduates might enter.

Design Thinking is a proven strategy for leaders to assess problems and provide insights. In a complex work environment, Design Thinking helps companies to make a complex system "simple, intuitive and pleasurable," according to John Kolko (2015), vice president of design at Blackboard. Design Thinking is a "robot-proof" area because it focuses on skills that are strictly human: an analysis on users' experience, especially their emotional ones, creating models to examine complex problems, and using prototypes to explore potential solutions (Kolko, 2015).

Design Thinking encourages innovation and it reinforces another important "robot-proof" skill—creativity—which is generally difficult to teach. Design Thinking has been employed in various fields: education, industry, business, and, of course, those associated with aesthetics. Writing for Forbes, Cohen (2014) aptly calls Design Thinking a "unified framework for innovation." Stanford University's Hasso Plattner School of Design, known also as d.school, facilitates use of Design Thinking strategies among its students and offers training for those outside of academia. As a way of fostering creative solutions, Design Thinking identifies and investigates both the known and ambiguous aspects of a situation in an effort to discover a solution that may lead to one or more satisfactory goals. Because Design Thinking is iterative, intermediate "solutions" are potential starting points for alternative paths, allowing for redefinition of the initial problem (Kees and Nigel, 2001).

Put another way, Design Thinking is an innovative way of solving real world problems to serve the people who use the end product (Popovic, 2016). According to Popovic (2016), design thinking is a process, undertaken in a predefined order, in order to solve problems according to a plan. The plan involves the following six steps or modes:

1. Empathize Mode. Problem solving begins with the individuals who are impacted by the problem. These individuals should be engaged in dialogue about the problem.
2. Define Mode. In this step the problem is defined based on information learned about those impacted. It may be framed by the creation of a problem statement.
3. Ideate Mode. Ideas are generated based on the definition of the problem. Emphasis is placed on generating a wide range of solutions at this stage (divergent thinking). The best solution will emerge through later stages in the process (convergence).
4. Prototype Mode. Here different models are considered that will allow movement toward a final solution.
5. Test Mode. At this stage, users try the prototypep77(on generen)4 (t). o

Using Agile to Supplement the Design Thinking Process

Design Thinking is especially valuable for the de nition of problems and generating initial potential solutions (i.e. the ideation mode), but it does not fully address the problem of how to manage the prototype and test modes. Although it is generated from the software development world, the Agile Manifesto can be used to organize diverse, cross-functional teams to incrementally create solutions to complex problems. The Agile Manifesto (http://agilemanifesto.org) describes

- individuals and interactions over processes and tools
- working software over comprehensive documentation
- customer collaboration over contract negotiation
- responding to change over following a plan

The rst, third, and fourth points have clear implications for student teams working with those outside the academy. Introducing students to these principles through the new Humanics sequence and having

IV. Participation in Topic Selection and Implementation

Development

The development of the QEP began in the Fall 2016 and reached its first benchmarked concluding phase in the Fall 2018. The narrative and chart below provide an overview of the major steps in the development of the QEP topic. As will be noted, Academic Affairs and faculty have worked collaboratively to identify a topic of interest and merit for the students at Kentucky State University: one that has potential to contribute to research, teaching, and society. Though some time had been spent in collecting ideas for the faculty through open and collaborative processes, the topic chosen had not gone beyond the selection phase. When the newly-hired President shared his ideas about Aoun's book, faculty members were uniformly intrigued and willing to discover its fit for Kentucky State University. The decision to use Aoun's Robot-Proof: Higher Education in the Age of Artificial Intelligence came at time in the life of the University when a new President had been hired and faculty members were engaged in supporting his leadership and vision.

Phase I (fall 2016-spring 2017)

Kentucky State University's planning for a new QEP project began in the fall 2016 semester. The Vice President for Institutional Assessment and the SACSCOC liaison engaged a faculty member with the task of leading the process through its first phase. A timeline was established that signified Phase I would culminate in a general topic being identified by the end of the spring 2017 semester. At that point Phase II would begin, likely with a new leader who had expertise or experience in the QEP topic and would begin implementation of the project.

A process was agreed upon in which the entire campus community (faculty, staff, students, and University stakeholders) would have an opportunity to suggest ideas and to help with their development. To that end, the Vice President for Academic Affairs announced at an October 2016 all-faculty meeting that ideas for the QEP would soon be solicited. In an October 29, 2016, email, the QEP Leader sent information about a website under development through which ideas could be submitted, and he noted that all submissions would be due by January 14, 2017. In this way submitters had ample time to develop their ideas. The email was sent directly by the QEP Leader to all faculty, and it was sent to all students through the Vice President of Student Affairs, to all staff by the President of Staff Senate, and to alumni through the Vice President of Institutional Advancement.

the submissions. It was decided that each member would select three top choices, which would be communicated to the QEP Leader and whose job it was to identify the top three overall and share these ndings with the group at its next meeting. On February 22, 2017, the top three were announced to the joint committee, and it was determined that the top three were so similar in topic that it might be more pro table to invite their authors to join the Committee and all work together on an overall approach rather than select only one topic. Indeed, there were about ve proposals that all dealt in one way or another with the idea of cultural competency or cultural literacy. In a February 26, 2017, email sent to the authors of these proposals, the QEP Leader encouraged their joining the group going forward.

Subsequent meetings of this enlarged committee on March 23, March 30, and April 13, 2017, found the group re ning the topic down to "global citizenship" and beginning to consider ways in which this idea could be rei ed and implemented. Conversations included possible curricular development, especially in lower-division, general education courses. Considerable dialogue was also devoted to proposing study away projects or courses, particularly since this aspect of the University had been dormant in recent years. One committee member had recently been working on study abroad opportunities for students in the Honors program, and she was eventually chosen to lead Phase II of the project.

Phase II (summer 2017-fall 2018)

During summer 2017, the new QEP Leader named a Co-Leader (both of whom retired after the 2017-18 academic year). These two faculty members generated a draft of a QEP project on the concept on cultural

Quality Enhancement Plan:

The QEP Development team continues to work on considering details of the plan, particularly on logistical, budgetary and assessment concerns. Feedback will continue to be solicited from the wider University community as well. Assessment plans the new course sequence appear in Appendix A, and assessment plans

among the transfer population (at present the number of transfer students is about 100 per academic year).

The first appendix provides a detailed look at the content of three new courses in Humanics, created as a first step in introducing and disseminating the new learning approach of "Learning that Works." These courses will provide the basis for critical thinking, inquiry and analysis, teamwork, and applied problem-solving for first time full-time students who make up the majority of each entering class at Kentucky

serve the same function for University College that capstone classes in the individual majors serve for those majors: it will put to use skills students will work on throughout their University College experience, including problem-solving, time management, critical thinking, team building, and the acquisition of academic skills and knowledge essential to a successful college experience.

A major component of the University's capacity to successfully carry out the goals of the QEP is the design and approval of the courses in Humanics that provide a first step toward introducing the concept of Design Thinking and teaching the "soft skills" that will help the students in career preparation. These courses will provide a helpful "proof of concept" of Aoun's theories that will aid us in wider dissemination of the core concepts of the QEP.

Humanics Sequence

As the first step toward wider implementation of the Design Thinking framework, the QEP proposal initially entails creating a three-course sequence for the general education program, through which all students would pass, ideally taking the capstone during the second semester of their second year, where the capstone project would be used to assess skills acquired in the Liberal Studies/General Education Core. In this capstone course, students will work in teams on a specific social problem, harnessing their disparate skills and acquired knowledge to offer a possible solution for the problem. The capstone course sections would be team-taught so students would have access to a variety of professional expertise while they follow the steps of Design Thinking. Groups would report their findings in a written report and an oral presentation at the end of the term. In completing the project, the students will acquire skills in ethical reasoning, civic engagement, and teamwork. They would also be making a positive impact on the larger community to which the University (and therefore each student) belongs.

The purpose of the new course sequence in the initial phase of the QEP is to lead students to an understanding of how the contemporary world developed and to lead them in a process that will culminate in a capstone project focused on a practical application for problem solving: Design Thinking. The approach will be: here's how we got to the problems of the contemporary world—and here's how to work toward a solution for one of those problems. From an access and equity standpoint, our "Learning that Works" QEP begs the question why students at Stanford and other elite institutions should be the primary groups who have the opportunity to engage in Design Thinking experiences. As completers of "Learning that Works," Kentucky State University students will live the mission of the University by bringing their best thinking to the complex problems that face and will continue to face our region. They will emerge as valued leaders in the community.

Humanics 101, 201, 301 is designed to be a sequence of three courses that introduce the development of human literacy, cultural agility, critical reasoning and creativity to support the broader goals of the QEP. Since all students will be required to take this sequence as part of their University College experience, these courses will be the first step in acquiring the employability skills that is the focus of the QEP. The courses are arranged to create an intellectual narrative beginning with close study of the industrial world and how thinkers and practitioners solved problems through the development of multiple creative literacies. The second course in the sequence analyzes the technological world and the post-technological world with an emphasis on cultural agility and critical thinking as students design and complete a project on a topic related to an aspect of our world with varied layers of history, interpretation, cultural resonances, and problem-solving opportunities. The third course is the Humanics capstone, which provides students opportunities to work in teams from across the disciplines to identify, articulate and solve a real world

Additional course descriptions, as well as a listing of outcomes and assessment tools, appear in Appendix A. Appendix B has the "sample" syllabi that were constructed as part of the process of having the new courses approved by Faculty Senate.

Institutional Resources

As the below budget projection indicates, the cost to the University to implement the QEP will be very modest, as the QEP will require no additional hiring, so the funding for the QEP should be well within the capacity of the University's operating budget, even if no existing or new grant funding can be found to nance the QEP. The University also has adequate physical facilities to implement the program: classrooms large enough to accommodate the largest of the classes (the Humanics Capstone classes) are available in Hathaway, Carver and Bradford halls, as well as in the Academic Services Building, and additional capacity is being added with the renovation of other buildings on campus. Additionally, the Bradford Auditorium is large enough to accommodate all sections of the Capstone class plus additional audience for the presentations of the Capstone projects. For computer and research resources, multiple computer labs exist in Hathaway, Carver and the Blazer Library. Since research teams for each Capstone project will consist of ve students conducting research, there will be no need for a computer facility large enough to accommodate the entire class section. The only physical facility budget item is for renovation of an existing space to use as a " ex space" for the QEP (see Budget section), the cost for which should be modest. Blazer Library maintains subscriptions to multiple electronic data resources, which should be su cient to allow for research and literature review for the Capstone projects. As is the case with all other General Education classes, including the Integrative Studies classes being superseded, the HUM 101 and 201 classes should be limited to 20-25 students per section and be able to use the regular classrooms and computer labs used by the other classes in the General Education core.

Our best resource for implementing the QEP is a faculty that is skilled and willing to teach these new supporting classes and to engage in further curricular revision, as detailed above. Due to the existence of the interdisciplinary courses (Integrative Studies) at the University for decades, we have a cadre of instructors with teaching experience in the kind of interdisciplinary courses like the Humanics courses. The reception for the concept of the QEP has been generally enthusiastic, so we do not anticipate any problems in recruiting the current IGS teachers and faculty from other disciplines to both teach in the Humanics sequence and to alter current pedagogy for other class o erings to eventually incorporate the kinds of skills that are at the core of the QEP.

As an example of the willingness of the University faculty to adapt instructional methodology, we can consider the changes that came about to our freshman classes in English, Reading and Mathematics as a result of the Corequisite program that has existed since 2016 and has been enthusiastically embraced by the faculty, sta and administration of the University (see the report on this program in Appendix C). Focusing on Inquiry-Based Learning and requiring each instructor to work with an Instructional Counselor in a teaching team analogous to the HUM 301 team, the program required a radical transformation to the curriculum (with the elimination of developmental classes that did not count toward graduation) and to the instructional approach, and the adaptation was made both swiftly and e ectively, with the corequisite classes having student pass rates that are above those that were being seen in the "traditional" version of these classes. The success of the corequisite program speaks to the University's faculty, sta and administration possessing the will and having a willingness to commit time, e ort and funding to seeing a new approach to student learning implemented.

VI. Expected Student Learning Outcomes

QEP Outcomes

The aim of "Learning that Works" is to teach students skills that will aid them in career readiness and advancement. As part of teaching them the concept of Design Thinking, students will acquire skills in problem-solving, teamwork, oral and written communication, and cultural agility.

Outcome 1: Students will demonstrate effective and informed Design Thinking reasoning skills associated with career advancement.

Outcome 2: Students will understand how to organize small- and large-scale projects in teams and develop skills in team membership and team leadership.
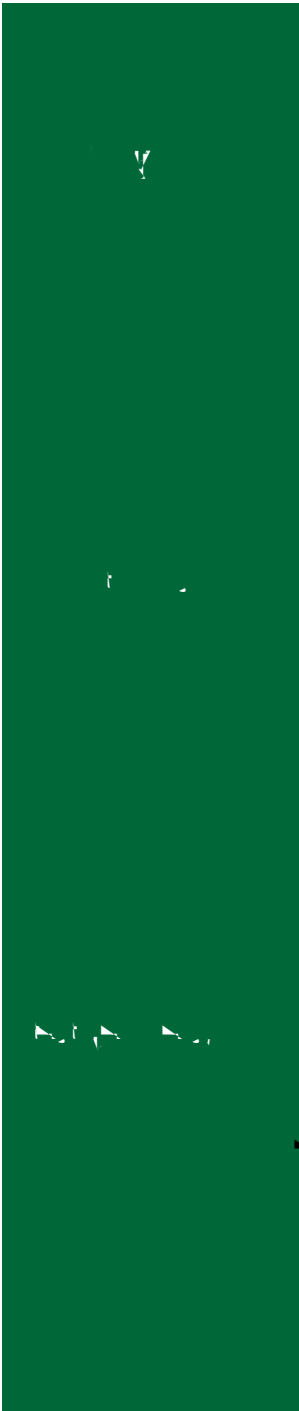
Outcome 3: Students will refine their ability to express ideas, pose and describe solutions to problems, and make effective inquiries through enhanced oral and written communication strategies.

Outcome 4: Students will gain knowledge and skills in assessing the impact of decision-making and communicating ideas through the lens of diverse cultures.

Finally, as a result of these learning outcomes, students will exceed their own expectations of career c[...] career readiness, and transform their ideas of success from the point of entry to the point of exit in[...] educational opportunities of Kentucky State University.
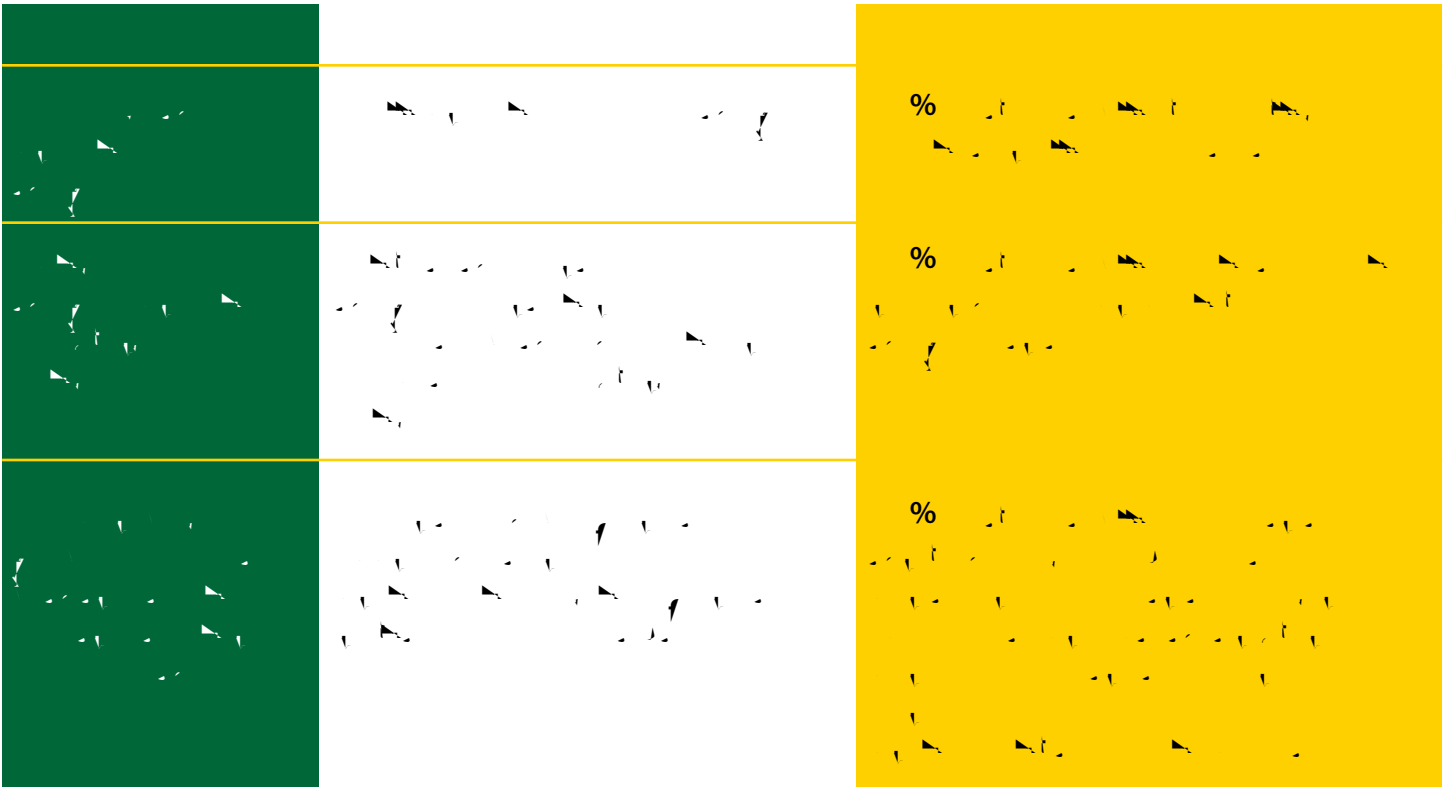
Quality Enhancement Plan:

Design Thinking- Problem Solving and Critical Thinking

Teamwork continued from page 23

Communication - Oral and Written

Quality Enhancement Plan:

Cultural Agility continued from page 25

Quality Enhancement Plan:
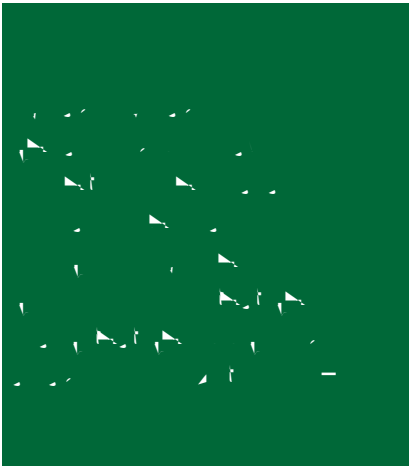
growth, discernment, and decision-making as students progress through their General Education core, degree curriculum, and co-curricular learning opportunities.

Aside from the positive effects on student learning, we are hoping for additional benefits that will be assessed independently of the QEP as part of larger assessment processes at the University, as these lie beyond the purview of the QEP Steering Committee. In particular, we are anticipating that the QEP will be used as the central alignment principle for future curriculum review and that all academic programs will review their curricula and map the humanics and Design Thinking points to their program offerings. We also envision the QEP as stimulating research and publication into the practical application of the principles of the "robot-proof" in higher education, as well as an increase in grant applications to support both the QEP and faculty research. Since the QEP will improve career and professional development training for students; we are hoping that this more effective career preparation will not only increase the student retention and graduation rate but also position Kentucky State University as a "destination university" and establish Kentucky State University as "think-tank" for equitable employment and access conversations.

IX. QEP Implementation Timeline

The QEP Development team continues to work on considering details of the plan, particularly on logistical, budgetary and assessment concerns. Feedback will continue to be solicited from the wider University community as well. In spring 2019 the plan will be reviewed SACSCOC reviewers and further revisions will be made in accordance with this feedback. By the end of the term, planning will be undertaken to begin a pilot of the project in fall 2019 beginning with the initial o ering of a pilot section of HUM 101. During summer 2019 training will be o ered to participating faculty. Professional development will continue to be o ered as the other sections of the sequence are piloted.

Pilot Courses for Humanics Sequence

Implementation will initially focus on o ering pilot courses for the three-course sequence that will introduce the students to the skills mentioned in Aoun's theoretical framework. Lessons learned from o ering these courses will be applied toward a broader transformation of learning in other classes, particularly those in the General Education core. These Humanics courses will serve as a required, general education focal point for instruction in and practice of these skills. The sequence will commence in fall 2019 with the initial pilot run of the rst course in the three-course sequence, HUM 101, to be followed with HUM 201 in spring 2020, along with at least one additional section of HUM 101. The classes will eventually supersede, and initially be cross-listed with, existing required classes in Integrative Studies: IGS 200 and IGS 201. HUM 301 will be cross-listed with IGS 300 and will rst be o ered in fall 2020. With the cross-listing, students who are under the "old core" requirements will still be able to ful ll those requirements by taking the HUM sequence. At the end of the spring 2020 term, the program will be assessed for e ectiveness so that the full implementation of the program in fall 2020, to include the capstone class (HUM 301), will re ect a year of development. Assessment will again be undertaken in spring 2021 to continue to monitor success of the program, including the in I, Hnitrathose onrrer transfgenerered in fal-listually sube fl 2020. WWt (en)4i sube fess tes, including mp(wil

should be able to count the course as part of their load, and other incentives to participate might be offered, such as providing a course development stipend (see below). Faculty would be expected to meet regularly to work together to help the students complete their projects. This will help build a campus community of learners and deepen the mentoring that goes on informally already.

Topics for the capstone groups can be drawn from ones proposed by the students themselves, drawn from suggestions made by the ongoing QEP Steering Committee, or drawn from the QEP Director's work with the Advisory Group described below. Once the capstone course is established as a requirement, there will be several sections, and it may be the case that teams of students will tackle the same or similar problems. This could be an advantage, since the course could end with a competition amongst the groups presenting their projects. A team consisting of the outside advisory group, faculty, staff, and advanced students could judge the projects. There could be prizes for the winners or all participants. There could also be a day of student research at the end of the term devoted to showcasing the students' work. Students would benefit from seeing how their peers approached the same or similar problem from different perspectives that perhaps lead to different conclusions. The presentation would be open to the public.

This course sequence and culminating project for the capstone would clearly help students work on many of the "robot-proof" skills advocated by Aoun. Design Thinking fosters skills such as creativity, empathizing, synthesizing, collaborating, and being respectful and ethical. These skills are specific to humans and are not within the capability of technology. No matter what the jobs of the future are, these are skills that will allow KSU students to adapt and thrive in the 21st-Century workforce.

The HUM 101 and 201 classes could meet according to the regular schedule; the capstone course would meet once a week at 4:00-6:00 p.m. to facilitate the group teaching format. While the HUM 101/102 would have the usual cap of 25 students, the capstone course may have only one to two sections with 100 students each. The 100 students would be divided down into twenty teams of five students.

New Course Sequence Timeline

The first two years of the project have/will develop as follows:

- Fall 2018: Plan for QEP implementation and assessment developed; courses have been approved by Faculty Senate.
- Spring 2019: QEP proposal finalized. SACSCOC Reviewers offer feedback on plan and proposal is revised accordingly. Faculty for HUM 101, 201 pilot courses are identified.
- Summer 2019: Professional development provided for HUM 101, 201 pilot course faculty

Implementation Phases

In Phase One of the project, Kentucky State University faculty members, through review and evaluation of curriculum in the General Education core and the degree programs, will begin "Learning that Works" by finding the opportunities in their coursework and co-curricular activities that can be expanded upon and enhanced to address career-readiness through the robot-proof conceptual framework.

At Phase Two, the faculty members will develop and adopt scaffolded competency measures and assessments of competencies demonstrative of students' growth and development in the core desired competencies: critical thinking, inquiry and analysis, teamwork and creative problem-solution dispositions.

At the third phase, students will be afforded opportunities to expand and apply these skills through co-curricular extant experiences, such as co-ops and internships, and the resumption of study abroad opportunities.

The final phases of the QEP will finalizing the courses, coursework, and activities that will concretize the robot-proofing education we seek to develop within the framework of the QEP. At the end of the five years, we intend to have an overhauled General Education curriculum, robust and contemporized degree programs, and an established and sustainable pathway from Kentucky State University to careers of meaning for our graduates.

- Pilot two courses designed to introduce students to Design Thinking, intellectual history associated with inventions and social growth.
- Conduct faculty learning communities around Aoun's book, **Robot Proof.**
- Invite speakers to campus to address themes of robot-proofing.
- Integrate the QEP into the fabric of the campus and related initiatives: the QA Commons Essential Employability Qualifications (EEQ) project, the Green Ribbon Curriculum development launch, and the individual program accreditations project, the latter of which will allow us to seek external certifications for all eligible academic program.

- Pilot the capstone class, designed to teach Design Thinking in a team setting.
- Institute focused discussions on General Education and curriculum to evaluate the robot-proof status of the educational offerings at Kentucky State University.
- Explore grant-writing opportunities and engage in advancement efforts to increase educational opportunities and program growth.

- Launch alumni focus groups to evaluate the transference of education to careers.
- Continue with curricular modifications and co-curricular programming extensions.
- Continue to identify grant-worthy opportunities to support educational opportunities at Kentucky State University.
- Use assessment results to improve student learning outcomes relative to robot-proofing.

Quality Enhancement Plan:

Appendix A

Humanics Courses: Descriptions, Outcomes and Assessment

This class will take a "how we got to now" approach, following the work of writers/hosts like James Burke and Stephen Johnson, in making connections between innovations that worked in concert or built on each other to result in the foundation of

might prove a productive way to integrate alumni into the program if, for example, a project takes place in a city or area where an alumni group is active.

It is clear that goodwill and positive press will be generated by KSU students working within the Frankfort community or elsewhere to help solve problems. Aside from the skills students will gain, they will be able to network and thus make professional contacts that will bene t their career goals beyond their time at the University. It may be the case that the project the students work on will be the subject of their research later when they undertake their senior capstone projects.

## Maintaining Artifacts: the e-portfolio

Upon entry to the University, every student will be required to establish an e-portfolio using Blackboard, the University's primary courseware program that is used for every course o ered. This e-portfolio will house artifacts that will both serve as baseline assessment tools and as a means to assess the intellectual progress of the students. The primary means of assessing the e ectiveness of the core classes and individual Humanics classes being o ered will be the VALUE rubrics published by the Association of American Colleges and Universities. Use of these rubrics as part of the e-portfolio will begin with the classes in English, Math and Speech that all students take as requirements for the Liberal Studies Core, usually in their rst semester as freshmen. As part of these required classes, instructors will assess students using the VALUE rubrics in Written Communication and Reading (English), Quantitative Literacy (Math), and Oral Communication (Speech) and include these assessments in the e-portfolio. These assessments can be used as "baselines" and the same rubrics used again in courses further along in the Liberal Studies Core as well as in the major classes, where they can be used to gauge student progress in acquiring those skills. For example, the VALUE rubrics in Reading and Written Communication can be completed rst in Freshman Composition, again at the completion of the Humanics Capstone project, and once more at the completion of the project or paper for the capstone class in the student's chosen major. At the completion of each class in the Humanics sequence, the instructor will be required to rate each student using two or more of the appropriate VALUE rubrics (see below) and to place that completed rubric in the student's e-portfolio. Since most students will take HUM 301 at the end of their time in University College and before taking most of their major classes, the assessment of the Humanics sequence will also allow us to gauge the e ectiveness of the General Education Core as a whole. The e-portfolio assessments and artifacts will come initially from KSU 101/102 and ENG 101/102, with a passing grade in ENG 101 being a prerequisite for HUM 101. Student skills would be assessed again at the completion of the students' capstone projects. Aside from the artifacts from HUM 101/201 and VALUE rubrics, the courses and artifacts in the e-portfolios could include the common assessment essay in the students' ENG 101: Freshman Composition I (to assess reading and written communication); the research paper in ENG 102, the students' second year writing course (to assess information literacy); and the nal speech in SPE 103, the students' speech communication course (to assess oral communication).

Course-Level Assessment

Assessing individual courses is a normal part of the University's "culture of assessment." Providing objectives and assessment tools is designed to help guide future instructors of these courses toward ensuring that all sections of the classes have the same outcomes and are using the same assessment tools.

For the usual class-level assessment, instructors for these classes will use the appropriate VALUE rubrics, published by the Association of American Colleges and Universities, for micro-level assessment of the courses that support the QEP. The instructor will be required to rate each student on the scale of 1-4 using the VALUE rubric descriptors and to add these completed rubrics to each student's e-portfolio (see below). Instructors can also use other appropriate VALUE rubrics and will also use upload to the student's e-portfolio other assessment tools to derive the student's course grade (e.g. examinations and class writing projects). The instructor may

Quality Enhancement Plan:
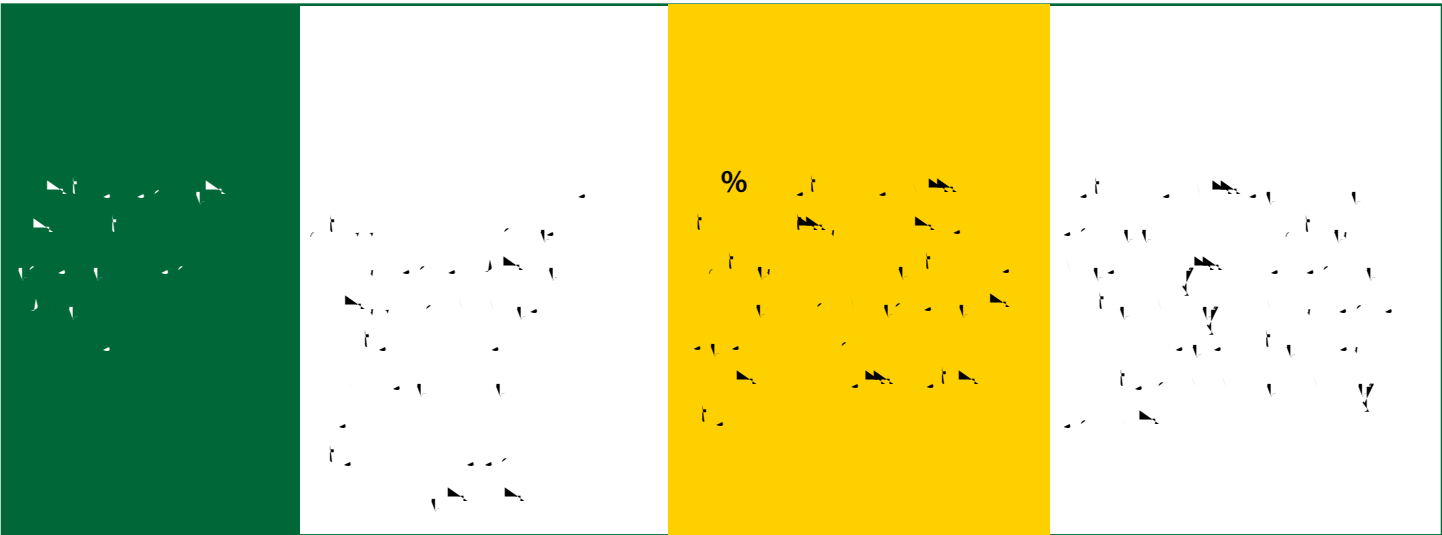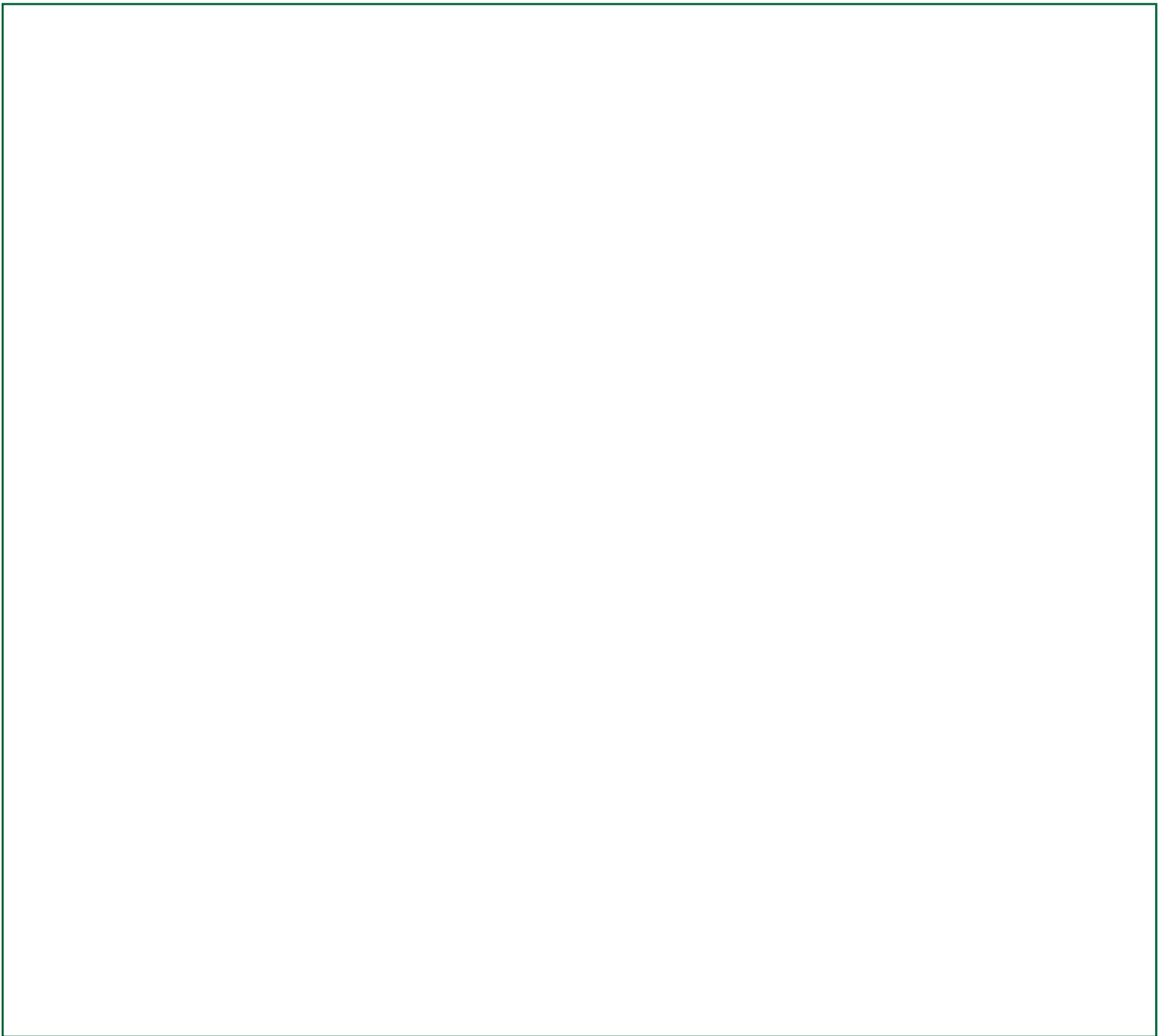
The Student Learning Outcomes for HUM 301 are:

Working in a team setting, students enrolled in HUM 301 will:

1. Identify a problem for the focus of the group project.
2. Demonstrate awareness of diverging ways of reasoning on approaches to problem and solution identi cation.
3. Demonstrate problem solving skills in a team environment, including:

3.

3.

Demonstrate prC 30.16ste:.455 Twehens8 (y)16.9 (ills in pan<</Actu plan u (or a(oblem ans in pm settiing sk)-16.9 (illin par

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Humanics Sequence Student Learning Objectives

In addition to the University's Student Learning Outcomes for Written & Oral Communication that have been established for the general education program, the three-course sequence in Humanics that supports the QEP also has its own Student Learning Objectives based upon the ones listed above and in the sample syllabi for each class (Appendix A). The overall learning goal of the Humanics sequence is to enable students to move from lower-level skills on Bloom's taxonomy to the highest-level skill and be able to create innovative solutions to the problems that they will eventually encounter in the workforce while working in both and individual and team environment. Students who complete the three-course sequence in Humanics will:

1. Explain the development of theories of cognition, intellect and creativity and their application to design thinking.
2. Explain how agile and design thinking principles have impacted the contemporary world.
3. Analyze the development of technology from the pre-industrial era to the contemporary world.
4. Analyze the roles that industrialization, globalization, multiculturalism, social media, and technology have played in forming the contemporary world and how they might impact the future of humanity.
5. Create, analyze and evaluate a potential solution to a contemporary problem, using agile and design thinking principles, while working in both an individual and team environment.

Upon completion of the HUM 301: Capstone class, the QEP Steering Committee will examine the VALUE assessment rubrics from each individual class that will be a part of the student's e-portfolio (see below) to assess to what degree these skills have been acquired through the completion of the three-course sequence in Humanics.

KENTUCKY STATE UNIVERSITY
Humanics 101:
Pre-Industrialism, Creativity, and Formative Mindsets (3 credit hours)
Sample syllabus
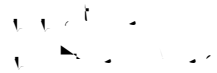
The Objectives and Learning Outcomes of this course directly support the University's mission: Kentucky State University is a public, comprehensive, historically black land-grant university committed to advancing the Commonwealth of Kentucky, enhancing society, and impacting individuals by providing quality teaching with a foundation in liberal studies, scholarly research, and public service to enable productive lives within the diverse global economy.

Any student who requires an accommodation due to a documented disability may contact the Disability Resource Center (DRC) at (502) 597-5076, or visit the DRC o ce, to arrange for reasonable accommodations. The student is required to obtain veri cation from the DRC and deliver the signed DRC document to the instructor specifying the accommodations. The student is encouraged to complete this process at the beginning of the semester since an approval for accommodations is not retroactive. The accommodations become e ective upon receipt of the DRC approval by the faculty member from the student.

This class will take make connections between innovations that worked in concert or built on each other to result in the foundation of our contemporary industrialized, technology-driven, "westernized" culture that even cultures that developed apart from Western in uence now resemble (including the world's two most populous non-western nations: China and India). This course will examine design and systems thinking as they were used in the past to create the pre-technological world that ultimately created contemporary culture. Topics such as inventions, mathematical and scienti c reasoning, artistic products, forms of literacy and developing worldviews will be discussed. Skills incorporated will be conversations, networking, and thought experiments.

The objectives of this course are intended to indicate the general level of achievement to be attained by the average student. Through progress of the course, the student will:

1. Compare and contrast how language is used to express ideas through critical reading of primary texts from several disciplines of learning;
2. demonstrate an ability to conceptualize and formulate major issues as they are proposed by a close reading of a text;
3. sharpen verbal expression by participating in seminar discussions;
4. increase writing skills through discussion board postings or other written assignments;

5. demonstrate critical and analytic insights in assignments stressing Design Thinking;
6. cultivate the art of acquiring, interpreting, and communicating knowledge;
7. experience ways of integrating various bodies of knowledge from across cultures and of expanding the number of perspectives from which questions of value may be viewed.

The student will demonstrate his or her progress toward these objectives through written examinations, written projects, class participation and contribution, and other participation as required.

Students enrolled in HUM 101 will:

1. Evaluate the role of language/rhetoric in the expression of ideas and actions.
2. Explore de nitions of self, society and ethical reasoning in diverse cultural contexts.
3. Explain how theories of the mind/human cognition developed and illustrated how humans acquire, store and process knowledge.
4. Analyze the relationships between intellect, creativity, and forms of reasoning.
5. Analyze the impact of pre-industrial technology on post-industrial technology.

For the pilot classes, the required texts will be determined by the individual instructor in consultation with the QEP Steering Committee; some possible required texts are: Edward O. Wilson, The Origins of Creativity; Stephen Greenblatt, The Swerve; Joseph Aoun, Robot-Proof: Higher Education in the Age of Arti cial Intelligence. After the pilot, a list of texts required for all sections will be a part of the standard syllabus for the class.

All sections will be expected to make regular use of Blackboard for class assignments

Course policies will be determined by individual instructors.

The standard KSU grading scale (A,B,C,D,F,I) will be used to record nal grades.

For the pilot classes, the schedule will be determined in consultation with the QEP Steering Committee. After the pilot classes, the schedule will be determined by individual instructors; readings, viewings and discussions will focus on the pre-industrial world (through the Enlightenment/Age of Reason) and will involve cross-cultural study.

The student will demonstrate his or her progress toward these objectives through written examinations, written projects, class participation and contribution, and other participation as required.

Students enrolled in HUM 201 will:

1. Design and complete a focused project in a team-based approach, applying agile principles.
2. Examine how globalization and increased interaction among world cultures leads to a re-de nition of self, society and ethical reasoning in diverse cultural contexts.
3. Analyze the role and ethical implications of social media in the 21st Century workplace, including the di erence between a professional and personal social media presence.
4. Articulate the e ects of industrialization and technology on the contemporary world and environment.
5. Analyze the impact of technology upon such emerging areas as contemporary ethics and laws involving intellectual property, use of digital services, and privacy and data collection.
6.

KENTUCKY STATE UNIVERSITY
Humanics 301:
Humanics Capstone (3 credit hours)
Sample syllabus

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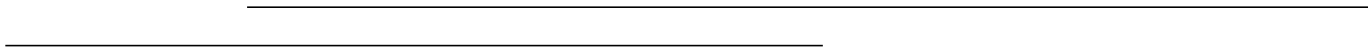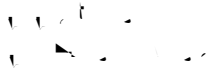
8. experience ways of integrating various bodies of knowledge from across disciplines through working cooperatively with team members with diverse knowledge bases.
9. experience team-based, cooperative learning to produce results with a real-world impact.

The student will demonstrate his or her progress toward these objectives through written assignments, verbal reports, project design and project completion.

Working in a team setting, students enrolled in HUM 301 will:

1.Identify a problem for the focus of the group project.
2.Demonstrate awareness of diverging ways of reasoning on approaches to problem and solution identi cation.
3.Demonstrate problem solving skills in a team environment, including:
·Discussing potential solutions to the problem and choosing a solution.
·Organizing and managing individual work and the work of others to implement the solution.
·Designing a group project, demonstrating facility with team-based learning using agile principles.
4.Complete a comprehensive project plan using an appropriate project management software program.
5.Use e ective communication skills to report on and re ect upon the results of the project in a public forum.

For the pilot classes, the required texts will be determined by the instructors on the teaching team in consultation with the QEP Steering Committee; some possible required texts are: Osterwalder and Pigneur,Business Model Generation; Carl G. Herndl, editor, Sustainability: A Reader for Writers; subscription to project management software (e.g. Live Plan); After the pilot, a list of texts required for all sections will be a part of the standard syllabus for the class that will be generated by the teaching team prior to the beginning of the semester in which the class is o ered.

All sections will be expected to make regular use of Blackboard for class assignments

Course policies will be determined by the teaching team.

The group project will be group-graded by the teaching team using the appropriate VALUE rubrics from the Association of American Colleges and Universities. The standard KSU grading scale (A,B,C,D,F,I) will be used to record nal grades.

For the pilot classes, the schedule will be determined by the teaching team in consultation with the QEP Steering Committee. After the pilot classes, the schedule will be determined by the instructors on the

- Create an instructor version of the workbook as well as a student version
- Restructure the exams

- All of the above
- Increase the depth of content by reducing the number of core topics. Topics were labeled as core, optioneled a6(or)10(e the e)view.pan<</ActualText<FEFF0009-BDC -1.458 -1.5 Td( )TjEMC 0.792 0 Td(•)Tj/S

MAT 111: The success rate for MAT 111 decreased by 15%, however percentages are misleading since the number of students enrolled was significantly lower at less than ¼ the fall enrollment. The actual number of students receiving a D or an F in MAT111 for both semesters was almost identical (Table 3).

MAT 115A: The overall passing rate for MAT 115A was higher in the spring than in the fall (Table 3). Approximately half of the 79 students enrolled in the spring MAT 115A course successfully completed MAT 101 in the fall with 77% attaining a C or higher (Table 4, row 2). 82% (33/40) of students who did not take MAT 101 in the fall, successfully completed MAT 115A for the first time during spring 2018.

1. The difference in mean ACT math subscore between students who passed MAT 115A with a C or higher and those that did not pass was significant for the fall (p< .01) and the spring (p< .05)

2. For students who did not take MAT 101 and passed MAT 115A in the fall or spring with a C or better, the difference in means between ACT math subscores was significant (p< .05)

3. For students who passed MAT 115A in the fall and students who completed MAT 101 in the fall and passed MAT 115A in the spring with a C or better, the difference in ACT math subscore means was significant (p< .01)

4. For students who did not take MAT 101 in the fall and passed MAT 115A in the spring and students who completed MAT 101 in the fall and passed MAT 115A in the spring with a C or better, the difference in student ACT math subscores means was significant (p< .0001)

The results highlighted in 4) above are worth noting. Students who completed MAT 101 (math ACT < 19) in the fall, passed MAT 115A at almost the same rate as the students who enrolled in MAT 115A without first taking MAT 101 (math ACT 19 – 24), yet had significantly lower ACT scores. This result appears to indicate that MAT 101 is successfully preparing students to be for MAT 115A. Traditionally the spring pass rate is lower than the fall.

Table 4: Fall 2017 - Spring 2018 Sequential Course Taking Success Rates

Fall - MAT 101 Spring - MAT 101	13	85% (11/13)	ABC
Fall - MAT 101 Spring - MAT 115A	39	77% 30/39	ABC
Fall - MAT 101 Spring - NA	48 71% (32/48)	NA	ABC
Fall - MAT 111 Spring - MAT 111	1	0 (0/1)	ABCD
Fall - MAT 115A Spring - MAT 115A	2	100% (2/2)	ABC
Fall - MAT 115A Spring - NA	59 71% (42/59) IText<FEF	NA IText<FEF	ABC

Quality Enhancement Plan:

The workbooks for MAT 101 and MAT 115A were completed and made available to students. This helped students come to class, prepared to work on the content being covered.

Some faculty implemented 10-minute bell ringer to increase on-time attendance and to continually review previous concepts covered.

Group work, mindset training, and presentations continue to be highly e ective in creating a safe community-based classroom and encouraging students to stay engaged and work together.

We continue to see evidence of the following

- Students grasp the concept of conceptual learning better than the traditional algorithmic approach.
- Relationship development with fellow students and the instructors.
- Faculty develop a better understanding of student directed learning.
- Student engagement is high.
- Some students are realizing they don't know the material like they thought they did.
- Some students realize they are capable of learning and understanding mathematical concepts
- Relationship based classroom environments have fostered a positive learning environment. Student intervention and engagement has been positive
- Students are supportive of respectful and cooperative classroom culture.

"Challenges you have faced in implementation and how those challenges have been addressed."

Class were scheduled ve days a week in times such as 3:00 p.m. or noon which created fatigue and contributed to absences. In spring 2018, we changed the class schedule to one hour and forty minutes

Spring 2018: The restructured class meeting time for college algebra from M-F to MWF created difficulties with content pacing and delivery. We will be revising the workbook, curriculum structure and teaching pedagogy to take advantage of the 100-minute MW course structure.

"Next steps you will take in the implementation of corequisite mathematics and literacy courses on your campus."

Tutorial videos to supplement student learning resources are currently being produced.

We will participate in the 2018 Students Success Summit and share our accelerated model.

We will use the "Scaling Corequisite" grant project to coordinate the efforts, assess and evaluate the program both short term and long term.

We will continue to assess and evaluate non-cognitive factors which impact student success.

The following are ongoing activities which help increase student success:
- Continue to identify instructor and IC responsibilities more clearly
- Continue to focus on identifying and assisting struggling students.
- Continue to test frequently.
- Implement Edready more effectively.
- Continue updating the course material.