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Phased Roadmap (2026–2028): Integrating Future Skills in HEIs

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The landscape of work and society is rapidly evolving due to globalization, digitalization, climate change, and social uncertainty. Traditional, rigid higher education models are no longer sufficient to prepare youth for **jobs that do not yet exist**. To address this, a Technical Assistance Mission seminar in Dec 2025 – *"Future Skills: How Universities Can Prepare for Jobs That Don't Yet Exist"* – brought together Kyrgyz HEIs to chart a path forward. The seminar (with four dedicated sessions) emphasized that universities must move beyond imparting subject knowledge to **systematically develop "future skills"** – the transversal, meta, and green competencies that enable graduates to thrive in uncertain futures. These include critical thinking, problem-solving, communication, collaboration, digital and data literacy, creativity and adaptability, self-regulated lifelong learning, socio-emotional and ethical awareness, and sustainability-minded decision-making. Such competencies are relevant across all sectors and align with global frameworks:

- **UNESCO Futures of Education:** Stresses that education must *"go beyond factual knowledge"* toward building the capacity to act in an uncertain future. UNESCO's Future of Education initiative and *Skills for the Future* framework highlight social-emotional, cognitive, and **hybrid competencies**, setting clear and measurable learning goals for relevance.
- **OECD Learning Compass 2030:** Defines a vision for future-ready learners grounded in core knowledge, skills, attitudes, and values, with an emphasis on a continuous *anticipation–action–reflection* learning cycle. Key elements include **digital literacy, critical thinking, creativity, responsibility,** and the ability to manage complexity – mirroring the "transformative competencies" (creating new value, managing tensions, taking responsibility) needed for 2030.
- **EU Skills Agenda & Key Competences:** The European Skills Agenda (2020) and the EU Council's Key Competences for Lifelong Learning (2018) call for strengthening eight key areas – from literacy and multilingualism to **digital competence, entrepreneurship, and civic competence** – and promote lifelong learning, employability, and active citizenship. The EU emphasizes initiatives like the *Pact for Skills*, sector skills alliances, and recognition of micro-credentials to bridge education and fast-changing labor market needs.

Kyrgyzstani HEIs, in line with EHEA reforms, are poised to integrate these future skills into curricula and campus practices. The following sections present a **trend analysis** from the seminar sessions and a **phased roadmap (2026–2028)** for institutional action. This roadmap covers curriculum reform, employer partnerships, teaching and assessment innovation, modular/micro-credential learning, and faculty development. It also outlines milestones, responsible units (e.g. Academic Councils, Quality Assurance offices, International Offices), and indicators to monitor progress. The goal is to equip graduates with competencies that are *flexible, integrative, and future-proof* – thereby aligning higher education with national priorities and global standards for the future of work and learning.

Key Trends and Implications from the "Future Skills" Sessions

1. The Future of Work & Skills Needs: Rapid socio-economic changes (digital transformation, AI automation, the green transition) are continuously reshaping skill demands. Content knowledge alone is insufficient; universities must foster *agency, adaptability, and lifelong learning abilities* in students. **Transversal competencies** – such as critical thinking, communication, teamwork, and problem-solving – are crucial across all disciplines. Likewise, **meta-cognitive skills** (learning to learn, self-regulation, independent thinking) and **green skills**

(sustainable thinking, global responsibility) have become essential. *Implication:* HEIs need to embed these future skills across programs, ensuring graduates can navigate complexity and ambiguity. This shift is supported by UNESCO's call to focus on competencies for uncertain futures and the OECD's emphasis on resilience and learner agency in the Learning Compass framework.

2. Competency-Based & Flexible Curriculum: Traditional discipline-centered curricula must evolve. Emerging fields like AI, data science, green technology, and digital services demand curricula that are updated frequently and oriented towards competencies. All three global frameworks (UNESCO, OECD, EU) encourage **future-oriented curriculum design**: UNESCO advocates aligning curricula with global trends (sustainability, digital skills, social-emotional learning) and interdisciplinary, community-linked learning; OECD recommends flexible, student-centered pathways guided by anticipation-action-reflection cycles; and the EU calls for linking higher education with labor market forecasting and skills alliances. In practice, universities should integrate *labor market intelligence* and revise curricula on a rolling basis (e.g. every 2–3 years) to keep pace. Importantly, **soft skills, digital literacy, and innovation** should be woven into all disciplines – not taught in isolation. For example, every program should include elements like teamwork, communication, and digital competency development, reinforced through **authentic assessments** (projects, portfolios, real problem-solving tasks) instead of rote exams. *Implication:* Kyrgyz HEIs must undertake curriculum reform that centers on learning outcomes and competencies (aligned with frameworks such as UNESCO's and the European Qualifications Framework) rather than traditional content lists. This ensures graduates have versatile skillsets and encourages a culture of continuous curriculum innovation.

3. Work-Based Learning and Employer Partnerships: The fast-changing labor market in Kyrgyzstan (and globally) calls for much tighter integration between universities and employers. Seminar discussions underscored that **co-designing programs with industry** and expanding work-based learning opportunities are critical for relevance. UNESCO and OECD highlight that collaboration with employers brings real-world authenticity to learning and boosts student motivation and competence development. The EU's Skills Agenda and *Pact for Skills* promote such co-created programs on a policy level. Key mechanisms include establishing **industry advisory boards**, inviting industry experts for guest lectures or joint development of learning outcomes and assessment criteria, and participating in EU initiatives like Sector Skills Alliances. Moreover, experiential learning models – internships, apprenticeships, mentorship programs, and project-based collaborations addressing actual industry challenges – significantly increase graduates' employability. Entrepreneurial and innovation ecosystems on campus (startup incubators, fab labs, living labs) also emerged as important trends, with EU frameworks like **HEInnovate** encouraging universities to foster entrepreneurship as a key future skill. *Implication:* HEIs should formalize partnerships with employers and the private sector to co-create curriculum content, offer **real-life problem solving experiences**, and build innovation hubs that link academic learning with practical innovation. Such partnerships will ensure programs remain agile and aligned with regional development needs, and that students gain the hands-on experience and entrepreneurial mindset valued in a modern economy.

4. Teaching Innovation through Technology and New Pedagogies: Advancements in technology (especially AI and digital platforms) are revolutionizing teaching methods worldwide. The seminar highlighted that embracing **AI-driven tools, virtual labs, simulations, and design thinking** in pedagogy can greatly enhance learning outcomes. For

instance, AI enables personalized tutoring and intelligent feedback systems; virtual and remote labs allow scalable, safe experimentation in sciences; and simulation games can build complex problem-solving skills. Design thinking in the classroom fosters creativity, empathy, and user-centric problem solving. UNESCO urges education systems to adopt open digital ecosystems and virtual collaboration platforms, ensuring equitable and ethical use of AI in education. The OECD notes that such innovations, when used appropriately, can enhance learner agency and develop *transformative competencies*, while the EU's Digital Education Action Plan (2021–2027) supports integrating technology and developing **AI literacy** among educators and students. In parallel, **future-ready pedagogies** like project-based learning, challenge-based learning, and competency-based assessment are gaining prominence. These pedagogical approaches shift the focus from passive knowledge intake to active problem solving and collaboration, aligning with the skills mentioned above. *Implication:* Universities must invest in modern teaching tools and methodologies – updating classrooms into hybrid learning environments, adopting digital simulations, and encouraging interdisciplinary project work. This goes hand-in-hand with updating **assessment** practices to evaluate competencies (e.g. using portfolios or practical projects) rather than only factual recall.

5. Lifelong Learning, Modular Programs, and Micro-Credentials: Another key trend is the move toward lifelong learning ecosystems. As jobs evolve, individuals will repeatedly upskill and reskill over their careers. **Modular learning pathways** – short courses, certificates, micro-degrees – provide the flexibility for learners to acquire specific skills just-in-time. Micro-credentials in particular were discussed as a tool for recognizing focused skill acquisition: these are **short, stackable units** that certify specific competencies and can accumulate into larger qualifications. They are valuable for fast-changing sectors (e.g. ICT, green jobs, creative industries) and are officially recognized by the EU as instruments for lifelong learning and employability. The European Council's 2022 Recommendation on micro-credentials sets standards (learning outcomes-based, quality assured, portable, aligned with EQF/ECTS) to ensure they are trustworthy and widely accepted. UNESCO also views micro-learning as a means to increase access and inclusion globally. In Kyrgyzstan's context, integrating micro-credentials could help universities respond quickly to emerging local skill needs (for example, offering a short credential in solar energy technology or data analytics) without overhauling entire degree programs. *Implication:* HEIs should incorporate modular program designs and establish a micro-credentialing system, working closely with quality assurance bodies to align with national qualifications frameworks and the European standards. Recognizing prior learning and non-formal courses will also become important to support adult learners. Adopting a lifelong learning orientation will position universities as continuous skills development hubs for society, not just degree-granting institutions.

6. Faculty Development and Institutional Capacity: Underpinning all the above is the need to **upskill faculty and build institutional capacity** for change. Faculty members are central to curriculum reform and pedagogical innovation – yet many will require support to adopt new methods (like project-based teaching or digital tools). The seminar underscored continuous professional development for instructors, particularly in **digital competence and innovative pedagogy**. The EU's DigCompEdu framework provides a useful guide for educators' digital skills, and UNESCO emphasizes that teachers should act as *facilitators of innovation and lifelong learning* rather than just lecturers. OECD similarly notes that educators must evolve alongside technology to remain effective. In practice, this trend means universities must invest in training programs, communities of practice, and incentive structures (e.g. recognizing teaching innovation in promotions) to encourage faculty engagement with the future skills agenda. Additionally, institutional support units – such as Centers for Teaching Excellence,

QA offices, IT support, and Career Services – need strengthening to coordinate the multifaceted change (curriculum overhaul, employer liaison, new assessment regimes, etc.). *Implication:* A strategic, whole-of-institution approach is required, where leadership (Rectorates and Academic Councils) drives the future skills strategy, and all departments and support units collaborate on implementation. Building faculty capacity and a change-positive culture in the university is a critical foundation for success.

With these trends in mind, the following roadmap outlines a **phased plan from 2026 to 2028** to introduce and institutionalize Future Skills in Kyrgyzstan's higher education. Each phase includes targeted actions across the key domains (curriculum, partnerships, teaching, modular learning, faculty development), along with expected milestones, responsible parties, and indicators to track progress.

Phased Roadmap (2026–2028): Integrating Future Skills in HEIs

Overview: The roadmap is structured in three phases – laying foundations (2026), scaling up (2027), and consolidating innovation (2028). Each phase builds on the previous one, ensuring gradual transformation. The actions are designed for institutional implementation (university level), but align with national quality standards and international best practices (UNESCO, OECD, EU).

Phase 1 (2026) – Foundation Building and Pilot Initiatives

Focus: Establish the strategic framework and initiate pilots for future skills integration. This year is about gaining buy-in, conducting groundwork (audits, planning), and testing new approaches on a small scale to learn lessons.

- **Curriculum Reform (Planning & Pilot):** Form a **Future Skills task force** (led by Academic Council and QA Office) to audit existing curricula against future skills competencies. Map which programs already include elements like critical thinking or digital literacy and where gaps exist. Develop a university-wide *Future Skills Integration Strategy* and get it approved by the Academic Council. This strategy should define core transversal competencies every graduate should attain (e.g. problem-solving, digital skills, teamwork, sustainability awareness) in alignment with UNESCO/OECD frameworks. Begin pilot curriculum revisions in a few volunteer departments: for example, update the learning outcomes of one program in STEM and one in social sciences to incorporate these competencies. Ensure **learning outcomes are rewritten in competence terms** (what a student should be able to *do*), not just knowledge topics. Pilot **interdisciplinary modules** that address real-world problems (e.g. an elective on "Green Innovations" co-taught by science and business faculty) to give students cross-cutting exposure. The QA office should develop guidelines for embedding transversal skills into course outcomes and design *authentic assessment* methods (like project work, case studies) for pilot courses. *Responsible:* Academic Council (strategy approval), Curriculum Committees in selected faculties, QA Office (curriculum audit & guidelines). *Indicator:* Strategy document adopted; number of programs reviewed and pilots launched.
- **Employer Partnerships (Initiation):** Launch initial engagement with industry and employers to ensure relevance of pilot programs. Each participating faculty should **establish an Industry Advisory Board** (or at least informal working group) with representatives from relevant sectors. For example, an IT program invites software

companies to review curriculum gaps, or an agriculture program works with agri-businesses on sustainable farming skills. **Co-design one pilot module or course** with employer input – e.g. a tech company helps co-develop a new course on AI applications, ensuring current industry practices are included. Start a **pilot internship or mentoring program**: Career Services and the International/External Relations Office can help place a small cohort of students in internships or mentorships with companies in late 2026. Also host a "Future Skills Roundtable" with employers and alumni to discuss the skills gaps they observe in graduates – this will inform further curriculum changes. *Responsible:* International Office/External Relations (industry outreach), Career Center (internships), faculty deans (advisory boards). *Indicator:* Number of partnership agreements or advisory boards established; at least one co-designed course/module initiated; internship positions secured for pilot group of students.

- **Teaching & Assessment Innovation (Pilot Testing):** Identify a group of motivated faculty (e.g. "Future Skills Champions") across departments to pilot new teaching methods. Through the Center for Teaching Excellence (or equivalent unit), conduct **training workshops on project-based learning, problem-based learning, and digital pedagogy**. Encourage these faculty to redesign one course each using innovative approaches: e.g. replace some lectures with team projects addressing community or industry challenges. Introduce **authentic assessment** in these pilots – such as portfolios or design challenges – to evaluate students on competencies like creativity, teamwork, and critical thinking. Experiment with one or two **educational technology tools** (with IT support): for instance, use a simple online simulation or virtual lab in a science course, or an AI-driven tool for personalized practice quizzes, to demonstrate the benefits of ed-tech. Emphasize careful evaluation: collect student feedback and learning data from these pilot courses to gauge what works. *Responsible:* Center for Teaching Excellence or QA (faculty training), pilot faculty members, IT support. *Indicator:* Number of courses redesigned with new pedagogy; faculty participation in training sessions; student feedback (e.g. ≥80% of participants report improved engagement).
- **Modular & Micro-Credential Learning (Exploration):** Investigate how modular learning can complement traditional programs. The university leadership should commission a feasibility study (possibly by the QA Office or Continuing Education department) on adopting **micro-credentials** and short courses. Start small: develop **one or two pilot micro-credentials** (e.g. a 6-week online certificate in Data Analytics, or a short course in Entrepreneurship) in partnership with industry. Ensure these pilots follow good practice: define clear **learning outcomes and assessment** for the micro-credential, and have them quality-assured. Coordinate with the Ministry or National Qualifications Framework (NQF) experts to understand how these micro-credentials could be recognized (perhaps as professional development or elective credits). If possible, align the pilot design with the *European Approach to Micro-Credentials (2022)* – e.g. use ECTS credits for workload, include digital certificates with metadata (issuer, outcomes, EQF level). The International Office can help by reviewing how other universities (including European partners) implement micro-credentials, and by registering the institution on emerging platforms (like Europass or Erasmus+ initiatives) that support micro-credentials. *Responsible:* Vice Rector for Academic Affairs (commission study), QA Office (pilot design and QA), relevant faculty for content, International Office (benchmarking). *Indicator:* Completion of study/recommendations; number of micro-credential pilots designed; enrollment numbers in pilot short courses.

- **Faculty Development & Capacity (Awareness and Skills):** Begin to build faculty capacity from the ground up. Conduct a **needs assessment** survey to understand faculty's current skill levels and confidence in areas like digital teaching, English proficiency (for accessing global materials), and use of active learning methods. Based on results, create a **Professional Development Plan** for faculty aligned with the Future Skills initiative. In 2026, focus on **awareness-raising** and basic upskilling: hold seminars on "What are Future Skills and Why do they matter?" sharing insights from the TAM sessions with the wider academic staff. Introduce the **EU DigCompEdu framework** to faculty as a self-assessment tool for their digital teaching competence. Offer beginner training sessions on specific tools (e.g. how to use a learning management system effectively, or incorporating multimedia assignments). Also, encourage faculty exchanges: use the International Office to identify Erasmus+ teacher training opportunities or invite an international expert (perhaps Prof. Rulf Treidel or a HERE expert) for a workshop. *Responsible:* Human Resources or Staff Development unit, Center for Teaching Excellence, International Office. *Indicator:* Percentage of faculty reached by awareness sessions; number of faculty completing at least one training; baseline established (e.g. % of faculty at DigCompEdu "beginner" level).
- **Milestones by end of 2026:** Future Skills Integration Strategy approved; at least 2–3 programs piloting revised curricula with new competency outcomes; initial industry advisory boards functioning; one cohort of students in internships; 5–10 courses using new pedagogies and assessments; 1–2 micro-credential courses launched; ~30% of faculty engaged in some training on future skills.
- **Key Responsible Units:** Academic Council & Rectorate (strategic oversight), QA Office (curriculum and quality framework), Faculty Curriculum Committees, Career Center & External Relations (employer linkages), Teaching Excellence Center (faculty training), IT Department (tech support), International Office (global linkages, resources).
- **Suggested Indicators:** *Policy/Strategy:* existence of approved strategy or policy on future skills; *Curriculum:* number/proportion of programs updated or with future skills learning outcomes; *Partnership:* number of MOUs or advisory boards with employers, and student internship count; *Teaching:* count of faculty trained and courses redesigned; *Micro-credentials:* number of micro-credential pilots and participants; *Faculty:* pre/post training competency survey results.

Phase 2 (2027) – Scaling and Integration

Focus: Expand and formalize the initiatives launched in Phase 1. Future skills integration moves from pilot stage to broader implementation across the institution. Emphasis on scaling up curriculum changes, institutionalizing partnerships, adopting new tools, and creating supportive infrastructure.

- **Curriculum Reform (Scaling Up):** By 2027, the goal is to have **most academic programs undergoing revision** to integrate future skills. Building on pilot successes, the Academic Council and QA Office should mandate that each faculty update program curricula to embed the agreed set of transversal competencies. This means **revising program learning outcomes university-wide** to align with frameworks like the OECD Learning Compass (covering knowledge, skills, attitudes, values) and the EU's key competences. For consistency, develop a *competence mapping template*: e.g. every course syllabus must map its learning outcomes to one or more of the institution's future skills competencies (critical thinking, digital literacy, etc.). Encourage development of

interdisciplinary courses or modules available to students from any faculty (for example, a course on "Design Thinking for Sustainable Development" that draws learners from science, engineering, and business). These broaden students' exposure and strengthen competencies like creativity, collaboration, and sustainability awareness in line with UNESCO's call for integrative learning. Additionally, implement a **curriculum review cycle**: institutionalize the practice of reviewing/updating curricula every 2–3 years with input from industry and emerging research. The QA office can develop rubrics to assess how well programs are integrating future skills (possibly as part of annual program monitoring). *Responsible:* Academic Council and Senate (policy enforcement), all Faculty Curriculum Committees (implementation), QA Office (monitoring). *Indicator:* % of programs that have updated learning outcomes and syllabi; evidence of future skills mapping in curriculum documents; at least one interdisciplinary module offered university-wide.

- **Employer Partnerships (Formalization & Expansion):** Deepen industry collaboration and make it a standard element of program design and delivery. In 2027, aim to have **active industry advisory panels for all major fields of study**. These panels should meet regularly (e.g. twice a year) to review curriculum relevance and suggest updates, ensuring that course content keeps pace with sector needs. Expand the **co-design of courses**: for instance, if Phase 1 had one co-designed module, Phase 2 should see multiple courses across different departments co-developed or co-taught with practitioners (e.g. a finance course co-led by a bank professional for FinTech skills, an environmental science project defined with a local NGO for climate resilience). Increase **work-based learning opportunities** substantially: establish an official **internship program** (perhaps as a required or credited component in certain programs) so that a significant percentage of students engage in internships, apprenticeships, or field projects by graduation. Similarly, create a **mentorship network** linking students to mentors in industry or alumni working in relevant fields. To support entrepreneurship, set up or enhance **innovation labs/incubators on campus**: by 2027, the university could open a small incubator or "makerspace" where students can work on startup ideas or community projects, with mentorship from industry and support from faculty. This aligns with EU's HEInnovate and EIT initiatives that encourage universities to act as regional innovation hubs. *Responsible:* External Relations/Partnership Office (coordinates advisory panels), Department Heads (faculty liaisons with panels), Career Center (manages internships & mentoring), Innovation/Entrepreneurship Center (if existing, or establish one). *Indicator:* Number of active industry advisory boards; count of courses co-designed or co-taught with industry; internship participation rate (e.g. % of students completing an internship); number of student startups or projects in incubator.
- **Teaching & Assessment Innovation (Broader Adoption):** After the initial pilots, in 2027 a larger cohort of faculty should be adopting innovative pedagogies. The university should possibly **require or incentivize** that every study program includes at least one **project-based or challenge-based learning component**. For example, all final-year students might undertake a capstone project with real-world stakeholders, or first-year courses could include cross-disciplinary team challenges. Continue faculty development on teaching innovation: offer advanced workshops on topics like **using AI in education**, data analytics for learning (learning analytics), or developing **hybrid/blended courses** to reach more learners. Expand the use of digital tools: deploy an institutional **learning management system (LMS)** if not already in place, with features for interactive content and e-assessment. Introduce more **virtual labs or simulations** especially in science, engineering, and medical education, so that students

can practice in safe, resource-efficient virtual environments. The IT department and tech-savvy faculty can collaborate to curate open educational resources and simulation tools (some may come from global repositories or Erasmus+ projects). In assessment, the university could pilot a **competency-based assessment framework**: for instance, develop a set of rubrics to assess competencies like critical thinking or teamwork across different courses (potentially as part of QA). Also consider updating exam regulations to allow more flexible assessment methods (e.g. replacing some traditional exams with portfolio assessments or group project grades). *Responsible:* Center for Teaching Excellence (continues training), Deans and Department Chairs (ensure inclusion of project-based components), IT and e-Learning units (infrastructure and support), QA Office (assessment framework). *Indicator:* Proportion of faculty using at least one new pedagogical approach; student satisfaction with teaching innovation (via surveys); number of courses using simulations or online labs; improvements in student performance on competency rubrics (if measured).

- **Modular Programs & Micro-Credentials (Implementation):** Building on the groundwork of Phase 1, move towards **institutionalizing micro-credentials**. By 2027, the university can launch a **suite of micro-credentials or certificate programs** that address specific skill needs of the economy (e.g. in digital marketing, cybersecurity, ecological management, educational technology, etc.). These should be developed in consultation with industry and aligned to the university's regular programs (for stackability). For example, a set of three micro-credentials in data analysis, which if taken together and combined with a project could count as an elective module in a degree program. Establish policies for **recognition of micro-credentials**: work with the Academic Council and Registrar to allow students to earn credits for completing certified short courses, and possibly count external certified courses (with proper verification) towards their degree (recognition of prior learning). Ensure each micro-credential is **quality assured and documented** – using standards such as stating the EQF level and learning hours/credits, clear learning outcomes, assessment method, and having it approved by the QA office. By aligning with the European approach, these credentials will be portable and enhance graduate mobility. Consider joining an international network or platform for micro-credentials (the International Office might connect with initiatives in Europe or Central Asia for mutual recognition). Additionally, promote these offerings to not only current students but also alumni and working professionals, positioning the university as a **lifelong learning center**. *Responsible:* Continuing Education Center or designated Micro-credentials committee, Academic Affairs (policy integration), QA Office (credential standards), IT (for issuing digital certificates), International Office (external recognition). *Indicator:* Number of micro-credential courses launched and participants enrolled; integration of micro-credentials into at least one degree program (yes/no); any national recognition achieved (e.g. ministry acknowledgment or inclusion in NQF).
- **Faculty Development & Culture Change:** Intensify faculty development to support the scaling. In 2027, require that **all teaching staff undergo some training** in future skills teaching/assessment (for instance, the university might mandate completion of a certified course or a minimum number of workshop hours). Offer specialized training tracks: e.g. a series on *digital pedagogy and AI tools* for education, another on *mentoring and industry collaboration* for faculty who supervise internships or projects. Encourage faculty peer learning – perhaps through a **Teaching Innovation Conference or internal grant**: faculty who implemented successful pilots in 2026 can present their experiences to colleagues, or small internal grants can be given to faculty teams to redesign courses with future skills emphasis. Update **HR policies** to embed the future

skills initiative: for example, include teaching innovation and industry collaboration as criteria in performance appraisals or promotion considerations (this sends a signal that the institution values these efforts). Recognizing champions (teaching excellence awards for those integrating future skills) can boost morale. By the end of 2027, aim for a strong community of practice among faculty, where educators share new ideas and resources (possibly via an online platform or regular meet-ups). *Responsible:* Vice Rector for Academic (faculty affairs), HR Department, Center for Teaching Excellence, Internal Quality Committee. *Indicator:* % of faculty who have completed training (target > 60%); number of courses redesigned via internal grants; inclusion of innovation criteria in HR assessments (yes/no); faculty survey shows increased confidence in new teaching methods compared to 2026 baseline.

- **Milestones by end of 2027:** At least 50–60% of study programs updated to incorporate future skills competencies and new assessment methods; formal industry advisory boards operational in most faculties; institutional internship/mentorship program established (with significant student uptake); campus incubator or innovation lab launched; portfolio of micro-credentials (e.g. 5–10 offerings) running with frameworks for credit recognition; majority of faculty trained or actively participating in future skills teaching enhancements.
- **Key Responsible Units:** University Leadership (ensuring cross-department coordination), QA Office (driving curriculum and credential quality), Academic Departments (curriculum delivery), Career Center & External Relations (managing partnerships and internships), Innovation Center (entrepreneurship support), Registrar/Academic Affairs (credit and RPL policies), Faculty Development Center (ongoing training), HR (align incentives).
- **Suggested Indicators:** *Curriculum:* % programs with revised outcomes and future skills mapping; *Employers:* number of active industry partners and student placements; *Pedagogy:* count of project-based learning components or new tech tools adopted; *Micro-credentials:* number of credentials awarded and credit transfers done; *Faculty:* training completion rates and improved teaching performance metrics (student evaluations, peer reviews).

Phase 3 (2028) – Institutionalization and Continuous Innovation

Focus: By 2028, future skills integration should become an institutional norm embedded in policy, culture, and quality assurance. This phase consolidates gains, ensures sustainability, and looks to continuous improvement and alignment with global standards.

Curriculum Reform (Institutional Policy & QA): Make **future skills integration a permanent feature** of the university's academic policy. For instance, update the *Teaching and Learning Policy* or equivalent to explicitly require that all new or revised programs incorporate transversal competencies aligned with national and international frameworks. At this stage, **100% of programs** (including graduate programs) should have their curricula aligned. The QA Office can include checks for future skills in regular QA reviews or accreditation self-assessments (e.g. each program review must report on how it develops critical thinking, digital skills, etc.). Consider pursuing an **external evaluation or accreditation** focusing on the quality of future skills education – for example, inviting an international QA expert or using a UNESCO tool to audit how well the institution is preparing students for the future. Use 2028 to address any remaining gaps: if some fields (perhaps very theoretical disciplines) lag in integration, provide targeted support to those departments. Also, scale up successful interdisciplinary offerings into a **minor or certificate in Future Skills** available to all students

(some universities offer a "21st Century Skills" certificate alongside majors – Kyrgyz HEIs could adapt this idea). *Responsible:* Academic Council (policy adoption), QA Office (audit and accreditation), all Departments (full compliance with integration). *Indicator:* All programs revised (yes/no); policy updated (yes/no); external evaluation completed; student achievement of competencies evident (could be measured via exit surveys or competence tests).

Employer & Ecosystem Partnerships (Sustained Collaboration): By 2028, the relationship with employers and the broader ecosystem should be deeply ingrained. The university can host an annual **"Future Skills Forum"** or roundtable that brings together industry, government, and academia to discuss emerging skill needs and review how curricula need to evolve – this keeps dialogue ongoing and ensures the university remains responsive. Strengthen long-term partnerships: sign **Memoranda of Understanding (MoUs)** or strategic partnership agreements with key industry players, sector associations, and perhaps tech hubs or innovation parks in Kyrgyzstan. These MoUs can cover not just curriculum input but also research collaboration and graduate recruitment pipelines. Expand the scope of entrepreneurial ecosystem: if an incubator was started, grow it into a larger **Innovation Center** possibly with funding or sponsorship from industry or donors. Encourage faculties to jointly run innovation challenges or hackathons with companies or public sector to solve local problems (by 2028, student teams could be regularly participating in such challenge competitions, some of which might spin off startups or community initiatives). Leverage the International Office to connect these partnerships globally: for example, join international university-industry networks or seek international internship opportunities for students (perhaps via Erasmus+ placements or multinational companies operating in the region). *Responsible:* Rectorate and External Relations (formal partnerships), Career Center (employer network management), Entrepreneurship Center (innovation programs), International Office (global opportunities). *Indicator:* Number of formalized partnerships/MOUs; annual forum held (yes/no and attendance); student startup or innovation project count; employer satisfaction scores (via surveys of partners about graduates' skills).

Teaching, Learning & Assessment (Innovation Culture): By this phase, innovative teaching and continuous improvement should be part of the university's DNA. **Institutionalize support for pedagogy**: for instance, make the Center for Teaching Excellence a permanent, well-resourced unit that offers certifications for instructors in new pedagogies. Implement a system of **peer review of teaching** where faculty share and get feedback on innovative teaching practices, fostering a culture of collegial learning. Keep exploring new frontiers: 2028 might be a time to pilot the next generation of teaching tools such as advanced AI tutors or AR/VR learning experiences, keeping the university at the cutting edge (possibly through grant projects or partnerships with ed-tech providers). Also, evaluate the impact: use data from the past two years to assess how teaching innovations have affected student outcomes – e.g., have critical thinking test scores or employment outcomes improved? Use such data to refine approaches. In terms of assessment, by 2028 the university can consider adopting **graduate portfolios or a "Future Skills transcript"** supplement: along with academic grades, students could leave with a portfolio or a competency transcript documenting skills acquired (this could align with Europass or similar standards for documenting skills). This would underscore the institution's commitment to holistic student development. *Responsible:* Center for Teaching Excellence, QA (data collection), IT (tech exploration), Deans (ensuring participation). *Indicator:* Teaching excellence center usage stats; introduction of new tech (yes/no examples); evidence of improved student outcomes (e.g. employers reporting better preparedness, higher grad employment rates in emerging sectors, etc.); implementation of a skills transcript or portfolio system.

Modular Learning & Lifelong Learning (Maturity): By the end of 2028, the modular learning system should be fully integrated. The university should have a **recognized micro-credential platform** with a catalog of short courses that is well-known to students, employers, and the public. Perhaps the HEI collaborates with the Ministry of Education to ensure micro-credentials are included in the national qualifications framework or are at least recognized in public service hiring. Aim for **seamless pathways**: a student can accumulate micro-credentials during their degree or after, and the university provides guidance on how these can lead to further qualifications (for example, stack into a diploma or count towards a master's program). Also, institutionalize the recognition of prior learning (RPL) policies – so that learning from work or other providers can be credited, reinforcing the lifelong learning ethos. By 2028, start tracking lifelong learning engagement: how many alumni or professionals come back to take courses? The International Office might also connect Kyrgyz HEIs to global movements like UNESCO's Global Network of Learning Cities or other continuing education networks, to stay updated. *Responsible:* Continuing Education/Micro-Credentials Unit, Academic Affairs (policy), Government/Accreditation liaison, QA (RPL processes). *Indicator:* Number of micro-credentials awarded cumulatively; % of graduates with at least one micro-credential; national policy changes influenced (if any); enrollment of non-traditional learners (adult, part-time) increased.

Faculty and Staff Development (Sustainable Support): In the long term, ensure faculty development is continuous. By 2028, establish a norm that faculty engage in a certain amount of **professional development each year** (possibly formalized in HR policy). The university could offer its own **certification for "Future Skills Educators"** to those who complete a series of trainings and implement innovations, creating internal experts. Furthermore, extend capacity building to administrative staff – e.g., training program managers, IT personnel, career counselors on supporting new initiatives (like managing micro-credential records, supporting students in project-based learning, etc.). Encourage some faculty to contribute to **global discourse** on future skills – e.g., writing papers, attending conferences (with support from International Office) – which will also bring visibility to Kyrgyzstan's efforts and allow continuous learning from others. *Responsible:* HR and Faculty Development Center, Rector's office (for incentives/funding), International Office (conference links). *Indicator:* Policy in place for mandatory PD; number of faculty with "Future Skills Educator" certification or similar; staff training stats; representation in international forums.

Milestones by end of 2028: All study programs fully infused with future skills (verified via QA reviews); routine involvement of employers in curriculum and recruitment; graduates receiving documentation of competency achievement along with diplomas; a robust catalog of micro-credentials integrated with formal programs; the university recognized (locally or even regionally) as a leader in future-oriented education (perhaps cited in national reports or partnering in international projects). Graduate outcomes show improvement – e.g. higher employment rates in new sectors, positive employer feedback on skills. Faculty are confident and proactive in updating courses, and institutional structures are in place to sustain ongoing innovation.

Key Responsible Units: University Governing Board and Rector (embed changes into the institutional mission and allocate budget for sustainability), QA/Accreditation Office (ensure compliance and quality), Academic Council (maintain oversight on curriculum quality), External Relations (long-term partnerships and fundraising for innovation), Digital Learning/IT (maintenance of new platforms), Career & Alumni Offices (track outcomes and continuous engagement), all academic and admin departments as part of normal operations.

Suggested Indicators: *Quality Assurance:* results of internal/external reviews confirming integration; *Outcomes:* graduate employment or entrepreneurship rates, employer satisfaction indices; *Lifelong Learning:* enrollment of post-graduates in short courses; *Recognition:* any awards or recognition received for innovation; *Sustainability:* dedicated budget lines for future skills initiatives, continued faculty development participation.

By following this phased roadmap, Kyrgyzstani higher education institutions can transform themselves to meet the challenges of the future. Key trends from the 2025 TAM seminar – from the rise of transversal competencies to the power of industry partnerships and digital pedagogies – have been translated into concrete steps spread over 2026–2028. The roadmap ensures a balance between quick wins (pilots and early adopters in 2026) and sustained change (policy integration and culture shift by 2028). Crucially, the approach is **aligned with global frameworks**: it draws on UNESCO's vision of education as preparing learners for an uncertain world, OECD's compass for building agency and adaptability, and the EU's agenda for skills and lifelong learning (including innovations like micro-credentials and the DigComp frameworks). HEIs in Kyrgyzstan will not only produce graduates ready for jobs that don't yet exist, but also become **engines of innovation and sustainable development** in the country. By institutionalizing future skills, universities reinforce their third mission to serve society – contributing to a more agile workforce, a more informed citizenry, and a resilient economy. The journey requires commitment across the institution – from leadership vision to faculty creativity and administrative support – but the payoff is a higher education system that is future-ready and globally connected.