


# Kh. Dosmukhamedov Atyrau University integrates global micro-credentials for regional workforce leadership



 **Industry**  
Higher Education

 **Location**  
Kazakhstan

 **Size**  
8,000+ students

## Overview

Located in the heart of Kazakhstan's oil and gas capital, Kh. Dosmukhamedov Atyrau University plays a critical role in developing the nation's technical and pedagogical talent. As global industry standards evolve, the university has redefined its approach—shifting from traditional instruction to a model focused on validated, workforce-ready skills. This transformation is part of a broader national effort led by the Ministry of Science and Higher Education of the Republic of Kazakhstan (MSHE).

An initiative to integrate Coursera courses and Professional Certificates into university curricula launched in 2022 and rapidly scaled from 25 to 100 institutions, accelerating the country's transition toward a skills-based education system aligned with global labor market demands.

Building on this initiative, Atyrau University has become a champion in embedding micro-credentials into its degree programs.

By combining academic theory with credentials from Google, IBM, and Microsoft, the university prepares graduates equipped with hands-on skills that meet international standards.

## The Challenge

Atyrau University operates in a high-stakes environment where major employers (e.g., TCO and NCOC) demand specialized, up-to-the-minute technical skills. Historically, the university faced three primary hurdles:

- 1. Content lag:** Developing internal curricula for rapidly changing fields like cybersecurity and AI is time-consuming and expensive.
- 2. Market validation:** Local degrees needed additional global “signals” to help students compete for roles in international firms.
- 3. Regional gap:** Rural schools and local industries needed “agents of change” who could bridge the gap between traditional education and modern digital demands.

## Snapshot

5

certificates earned per license, a 67% increase in student productivity

8,500+

industry-recognized credentials achieved to bridge the regional skills gap

100%

integration of Professional Certificates into core IT and ecology curricula

## The Solution

### The “embedded learning” model

The university shifted from an optional “add-on” approach to a Mandatory Institutional Integration model. By 2025, Coursera was no longer an optional resource—it was a requirement.

#### 1. Strategic curriculum integration

Rather than single courses, the university implemented stackable credentials. Entire Professional Certificate pathways (five to eight courses each) are now embedded into degree plans.

- **IT and AI:** Google and IBM certificates in cybersecurity and data analysis are core requirements.
- **Ecology:** In the Ecology and Sustainable Development discipline, the Environmental Science course is a mandatory component for course completion.
- **Universal AI literacy:** The Fundamentals of Artificial Intelligence and the AI-Sana initiative ensure every student—regardless of major—gains competency in generative AI and prompt engineering.

#### 2. Faculty as creators and curators

The university optimized its budget by leveraging Coursera’s industry-led content instead of hiring expensive external consultants. Simultaneously, faculty transitioned to creators; Professor Ainur Tazhidenova published Fundamentals of Business Planning via the Coursera Course Builder, providing localized, high-quality content for students across Kazakhstan.

#### 3. The “mentor teacher” model for rural impact

To drive social ROI, 50 education students were assigned to rural schools as digital mentors. These students used localized Coursera courses to run “Soft Skills Clubs,” teaching leadership and critical thinking to schoolchildren, thereby multiplying the university's impact on the regional ecosystem.

## The Results

### A surge in productivity

The university’s shift to an embedded model triggered a massive jump in engagement. While the license count remained steady at 1,000, the output soared:

- **2023:** ~3 certificates per license (3,267 total)
- **2025:** ~5 certificates per license (5,441 total). This represents a 67% increase in student productivity, driven by making certification a graduation requirement.

### Competitive edge in employability

Graduates with Coursera-embedded diplomas now possess a significant marketing advantage.

- **Direct hiring:** Alumni are successfully securing roles at **Tengizchevroil (TCO), NCOC, and Embamunaigas**, where verified skills from innovators like Google and IBM are highly valued.
- **Entrepreneurial success:** Senior student **Dias Smagulov** credited Coursera’s Business English and Entrepreneurship modules as the practical foundation for launching his own school, Educate&Guide.
- **Global competition:** The integrated advanced programming modules were an important part of the university team’s success in securing **2nd place in the 2025 ICPC Quarterfinals** in Astana, outcompeting peers through mastery of data structures and algorithms.

### Institutional ROI

- **Cost savings:** The university has avoided the high costs of developing proprietary advanced industry content by integrating ready-made Professional Certificates.

- **Improved retention:** By demonstrating career value as early as the second year, the university has strengthened student retention and lowered dropout rates.

## Moving forward

Kh. Dosmukhamedov Atyrau University is now scaling its success into ESG and sustainable development, preparing a new generation of specialists to solve the environmental challenges of the oil and gas sector. By continuing to publish original faculty content and expanding its “Digital Mentor” programs, the university is solidifying its status as a leader in Kazakhstan’s educational modernization—turning a regional institution into a global gateway for talent.

### Outcomes

## Zero costs

content development costs by embedding ready-made global Professional Certificates

## Higher retention

rates achieved by proving clear career value to junior students

## New businesses

launched by students using practical entrepreneurship and language modules



## Connect curriculum to today’s careers

Help students build verified skills for high-demand industries.

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