SECTION 17.
GENERAL MECHANICS AND MECHANICAL ENGINEERING

Javlonbek Zafarjonovich Madaminov
Assistant of the Department of Descriptive Geometry and Engineering Graphics
Fergana Polytechnic Institute, Fergana, Republic of Uzbekistan

THE ACTUAL PROBLEMS AND SOLUTIONS
OF THE DEVELOPMENT OF ENGINEERING DESIGN COMPETENCIES

Radical changes in the society of our country, the rapid development of industrial enterprises, the use of innovative technologies in production, which in turn increases the demand for engineers, remains a pressing problem. As a solution to this, it is important to train qualified, creative-minded, well-developed specialists in the field of the professional activity of engineers emerging in the system of higher education. There are several requirements for a higher education institution to be ready to enter the production environment immediately after graduating as an engineering education specialist [1-7]. The prospective engineer who is being trained should think about his or her upcoming activities before starting work. Independently needs to know where to find information, adapt to new working conditions. Engineers working in a constantly evolving scientific knowledge environment need to know in advance the need to create the technology that is relevant in the future and to manage the production process based on the knowledge and skills acquired in Higher Education Institutions [8-11]. Practice shows that higher education institutions and enterprises are not directly related to each other in the training of future engineers, designers, mechanics.

The training of engineers and the need for engineers also exist in European countries. In Germany, the Netherlands, and Portugal, employers point to a shortage of engineering personnel with management and teamwork skills. The reasons for the shortage of workers are that the education system and the needs of the industry differ in the diversity of knowledge and skills required. Therefore, the professional training of engineers does not meet the requirements of employers. Educational institutions and enterprises are not directly related to each other in the training of future engineers, designers, mechanics, technicians. This means that the most prepared and talented student youth do not participate in the development of innovative technologies and technical systems in the interests of employers and the state.

In addition, the development of a design culture using modern graphics software is the most important factor in the development of design competencies of engineers in the educational process. The work efficiency of engineers who organize their work using graphic software, innovative technologies is high. If they have experience of participating in production developments, graduates of engineering schools are interested in supporting the theoretical knowledge acquired by them in the educational process with the experience of learning the latest machines and mechanisms that can only be achieved by working in certain enterprises [12-14]. This problem can be solved by qualitatively changing the system of interaction of employers with higher education institutions. The joint organization of training by students, teachers and employers helps to train young engineers who will be immediately involved in the innovative activities of production facilities, which will start working after graduation.
Conducting fundamental and applied research on the orders of local and joint foreign enterprises, allocating space for internships and then hiring young professionals for work, create conditions for students to develop knowledge interest in creating projects needed for manufacturing enterprises. As a result, the educational activity of engineers in higher education institutions will increase, and there will be an opportunity to develop design competence in senior students at the request of employers.

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