

**SOLID FOUNDATION OF ELECTRICAL TRAINING IN THE CONTEXT  
OF ENGINEERING EDUCATION**

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University training of a modern specialist requires not only to form special and ideological knowledge, but also to develop essential corresponding creative skills and abilities [1, p. 8].

Meanwhile the basic element of qualitative training of students majored in electromechanics to conduct experimental research while studying technical subjects is not studied and specified enough. That's why the aim of the given paper is to summarize the structure of knowledge in electrical engineering needed for students majored in electromechanics, to define its place and role while conducting experimental research in studying technical subjects.

As research shows, creative nature of work of specialists in conditions of modern manufacturing especially becomes apparent in electro-mechanical field of production. This is caused by the fact that specialists in this field are connected with installation, repairs and maintenance of extremely complicated equipment. To fulfil their working functions they need to know not only how electromechanical devices operate, operating rules and making-good procedure, but also how to analyze various parameters of electromechanical machines, to make logical and mathematical processing of instrument readings and indications, coming from controlling equipment. Introduction of new tools into manufacturing, using new mechanical means require future engineers majored in electromechanics to be highly qualified in the field.

It's common knowledge, the theoretical basis to form professional skills and abilities is common educational and common technical subjects. They contain basic knowledge needed to master a profession, in other words it's a foundation to get professional education. Meanwhile common technical subjects play an independent role in the content of preparation of modern specialists, as they perform as «a logical bridge» between common educational and specialized subjects. Thus, common technical subjects give succession and mobility to the whole educational system.

Electrical engineering is the leading, integrating common technical subject in the content of professional training for rather a wide range of professions linked with electromechanics. Besides, electrical engineering is both a polytechnic subject in the educational system of preparation of students majored in electromechanics and a basis to form systematic knowledge in electrical engineering while studying theoretical material describing practical electromechanical objects: electric circuits, electromechanical devices, electrical machines, as well as a basis to form skills that are important in the professional aspect while conducting experimental research.

For example, the basics for electrical circuit theory consists of knowledge about general notions, laws of electrical circuits, where electrical circuits are presented as generalized technical devices. The knowledge of electrical engineering that was formed in this way will facilitate deeper consideration of other electromechanical devices and systems. While studying electrical circuits students majored in electromechanics develop skills and abilities for analysis, generalization, synthesis of the knowledge of electrical engineering, and are able to shift the system of knowledge in electrical engineering that was formed while studying general technical subjects onto technical subjects; also students are able to use these skills when considering typical electromechanical devices and conducting experimental research. Technical subjects are those containing knowledge about principles of outer or inner operation of either complicated construction or separate its parts at any stage [2, p. 59].

According to the importance of professional direction of teaching electrical engineering, it is necessary for electrotechnical devices under consideration to correspond to those which electricians will come across at manufacture or while mastering professional activity. Although not all electrotechnical devices can be shown to students when studying a subject.

Although deep comprehension of the nature of electromagnetic phenomena, knowledge of laws and principles of theoretical electrical engineering, skills to use them in practice have always been and are a necessary condition for qualitative preparation of students majored in electromechanics. They must know well properties and peculiarities of different electrotechnical and electronic devices while studying, designing, engineering and especially operating the equipment used in their professional activity.

#### References

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2. Erganova N. The methodology of professional education: a tutorial for students of higher educational establishments / Erganova N. – M.: Academy, 2007. – 160 p.

## **МОДУЛЬНО-РЕЙТИНГОВА СИСТЕМА І ПРОБЛЕМИ ПІДГОТОВКИ ІНЖЕНЕРНО-ПЕДАГОГІЧНИХ КАДРІВ**

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Згідно з теорією трьох стадій розвитку суспільства висунутої на межі 1950-60 років американцем Даніелем Беллом, Уолтом Ростоу та французом Раймоном Ароном, Україна вступає в третю стадію – стадію інформаційно-технологічного розвитку, стадію комп'ютерних технологій, стадію в якій кілька десятиліть живе Німеччина, Франція, США. Відповідно освіта в інформаційному суспільстві має відповідати вимогам часу.