

Solving geometric problems by means of a CAD system

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The article considers the modernization problem of methods of teaching traditional graphic disciplines in technical universities. It is proved that students must be introduced to computer techniques for solving problems of determining the metric properties of geometric figures. Some comparative examples of solving 3D metric problems are provided. The advantages of computer methods for determining the metric characteristics of objects over traditional ones are demonstrated.

Keywords: descriptive geometry, CAD-systems, graphic task

REFERENCES

- [1] Aleksandrova E.P., Kraynova M.N., Stolbova I.D., Kornilkova E.V. Voprosy soderzhaniya i realizatsii graficheskoy podgotovki v vuze pri perekhode na obrazovatelnye standarty novogo pokoleniya [Issues of content and implementation of graphic training at the University during the transition to educational standards of the new generation]. *Sbornik trudov Mezhdunarodnoy nauchno-prakticheskoy internet-konferentsii "Problemy kachestva graficheskoy podgotovki v usloviyakh FGOS VPO"* [Proceedings of the International scientific-practical Internet-conference "Problems of graphic training quality in conditions of FSES HPE"]. Perm, Perm STU Publ., 2011, pp. 12–15.
- [2] Vyshnepolsky V.I., Salkov N.A. *Geometriya i grafika. Nauchno-metodicheskiy zhurnal — Scientific and methodological journal Geometry and Graphics*, 2013, vol. 1, no. 2, pp. 8–9. DOI: 10.12737/issn.2308-4898
- [3] Leparov M.N., Popov M.Kh. *Geometriya i grafika. Nauchno-metodicheskiy zhurnal — Scientific and methodological journal Geometry and Graphics*, 2014, vol. 2, no. 1, pp. 22–29. DOI: 10.12737/issn.2308-4898
- [4] Stolbova I.D. *Geometriya i grafika. Nauchno-metodicheskiy zhurnal — Scientific and methodological journal Geometry and Graphics*, 2014, vol. 2, no. 1, pp. 30–41.
- [5] Suflyayeva N.E. *Geometriya i grafika. Nauchno-metodicheskiy zhurnal — Scientific and methodological journal Geometry and Graphics*, 2014, vol. 2, no. 4, pp. 28–32.
- [6] Monge G. *Géométrie descriptive*. Paris, V. Courcier Publ., 1820 [In Russ.: Monge G. *Nachertatel'naya geometriya*. Moscow, USSR AS Publ., 1947, 291 p.].
- [7] Gordon V.O., Sementsov-Ohiyevsky M.A. *Kurs nachertatel'noy geometrii* [Course of descriptive geometry]. Moscow, Vysshaya shkola Publ., 2000, 272 p.
- [8] Cardone V., Iannizzaro V., Barba S., Messina B. Computer Aided Descriptive Geometry. *Proceedings of the Fifteenth International Conference on Geometry and Graphics ICGG*, Montreal, Canada, 2012, pp. 100–109.
- [9] Cucakovic A.A., Teofilovic N.K., Jovic B.S. Descriptive Geometry Education by Using Multimedia Tools. *Proceedings of the 16th International Conference on Geometry and Graphics*, Innsbruck, Austria, 2014, pp. 262–265.
- [10] Suzuki K. *Journal for Geometry and Graphics*, 2014, vol. 18, no. 2, pp. 249–258.
- [11] Sharikyan Yu.E., Odintsova A.E., Kashu A.A. *Vypolnenie domashnego zadaniya po nachertatel'noy geometrii* [Homework on descriptive geometry]. Moscow, BMSTU Publ., 2012, 61 p.

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