



Major. Technology of Aircraft Manufacturing Department (104)

Computer Aided Design of Technological Tooling (Term Project)

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| Level of Higher Education | <i>first (Bachelor)</i> |
| Course Status | <i>student's choice</i> |
| Scope of discipline | 60 hours / 2 ECTS credits |
| Language | <i>Ukrainian / English</i> |
| What will be studied (subject of study) | <p>As a result of the implementation of the undergraduate course project, the applicant for education studies the object of study and solves the tasks.</p> <p>The work consists of several mandatory design stages that form the structure of the project. The development of a technological process for dimensional processing and design of a jig for machining includes:</p> <ul style="list-style-type: none"> - preliminary design of the jig for machining; - development of a technological route for manufacturing a part by machining; - development of technological operations of mechanical processing; - design of a special machining jig. <p>or</p> <p>Development of a technological process for sheet stamping and die design, including:</p> <ul style="list-style-type: none"> - outline design of a stamp; - designing a stamp in an automated system; - choice of equipment; - registration of documentation on the designed stamp and the technological process of stamping the part. |
| Why is it interesting/should be studied (goal) | <p>Implement the project using computer-aided design (CAD) systems designed to automate the technological process of product design, the result of which is a set of design documentation sufficient for the manufacture and operation of the design object.</p> <p>The course of computer-aided design has two components on the example of two software packages. Each applicant is given the task of designing a stamp for a sheet part, or a jig for machining a part (based on SolidWorks)</p> |
| How can you use the acquired knowledge and skills (competencies) | <p>Ability to communicate in the state language both orally and in writing.</p> <p>Skills in the use of information and communication technologies.</p> <p>The ability to generate new ideas (creativity).</p> <p>Ability to learn and master modern knowledge.</p> <p>The ability to develop and implement technological processes for the production of parts and objects of aviation equipment.</p> <p>The ability to ensure the quality of information technology products and services throughout their life cycle.</p> <p>The ability to choose methods of calculation, design and production, considering the characteristics of different types of aviation equipment</p> |
| Prerequisites | |
| Corequisite | |
| Organization of training | <p>Types of classes: practical, self-study</p> <p>Forms of education: full-time / part-time</p> <p>Forms of control: differential test</p> |
| Department | Technology of Aircraft Manufacturing |
| Faculty | Aircraft Engineering |

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|---------------------------------|---|--|-------------------|--|
| Teachers | Name | Olga Shypul | Name | Iryna Voronko |
| | Position | Associate Professor | Position | Associate Professor |
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| Links to course materials | <div>1. Електронні ресурси до дисципліни у електронній системі дистанційного навчання Ментор.</div> <div>2. Разработка технологического процесса и инструмента импульсной клепки авиационных конструкций из углепластика / Кривцов В.С., Нечипорук Н.В., Воробьев Ю.А., Воронько В.В.// Монографія. – Х.: Нац. аерокосм. ун-т «Харьк. авиац. ин-т», 2012. – 122 с</div> <div>3. Проектирование специальных станочных приспособлений. В.В. Воронько, Ю.В. Дьяченко, С.Д. Проскурин, В.Т. Сикульский. – Учебное пособие по курсовому и дипломному проектированию. – Х.: Нац. аерокосм. ун-т «ХАИ». 2006. – 66 с.</div> <div>4. Программирование обработки на станках с ЧПУ / Ю.А. Боборыкин, Ю.В. Дьяченко, А.В. Пьянков. – Учеб. пособие для курсового и дипломного проектирования. – Х.: Гос. аерокосм. ун-т "Харьк. авиац. ин-т. 2000. – 100 с.</div> <div>5. Проектирование постпроцессоров для оборудования гибких производственных систем / Ю.В. Дьяченко, В. Е. Зайцев, А. А. Павленко, А.В. Пьянков. – Учеб. пособие по курсовому и дипломному проектированию. – Х.: Нац. аерокосм. ун-т «Харьк. авиац. ин-т», 2001. – 100 с.</div> <div>6. Гибкие производственные системы в авиастроении / В.С. Кривцов, С.Г. Васильченко, Ю.В. Дьяченко, В.Е. Зайцев. – Учеб. пособие по курсовому и дипломному проектированию. – Х.: Нац. аерокосм. ун-т «Харьк. авиац. ин-т», 2001. – 98 с.</div> <div>7. Современные технологии агрегатно-сборочного производства самолетов / Пекарш А.И., Тарасов Ю.М., Кривов Г.А., Воробьев Ю.А. и др. – М.: Аграф-пресс, 2006. – 304 с.</div> <div>8. Borysevych V.V., Danchenko V.G., Zastela A.N., Mesheryakov A.N., Morgolenko A.S., Kharkiv, KhAI, 2009, 65p.</div> | | | |
| Link to work program (syllabus) | https://khai.edu/assets/files/silabusi/Major/104/silabus_b_134_Computer-aided-design-of-technological-tooling-TPmajor.pdf | | | |