Technologies of Aircraft Manufacturing (Machining)

Major «*Technology of Aircraft Manufacturing Department*»

Level of Higher Education	*first (Bachelor)*
Course Status	*student's choice*
Scope of discipline	135 hours / 4,5 ECTS credits
Language	*Ukrainian / English*
What will be studied (subject of study)	As a result of studying the discipline, students will be able to study: - features of the structural organization of mechanical engineering and aircraft engineering as industries. - Basic concepts and definitions of technology for manufacturing parts of aerospace engineering. - The concept of the technological process. - Operating allowances and a method for calculating the dimensions of the workpiece. - Accuracy of machining processes, categories and types of accuracy. - Cutting modes during machining. - Layout of three-coordinate milling machines. - Finishing, finishing and control means of dimensional processing. - Design of technological processes of dimensional processing. - The structure of special machine jigs. - Stages of creating a control program for CNC equipment. - Features of technological processes: cutting, drilling, turning, threading, milling of parts made of composite materials, titanium and high-strength aviation alloys. - Technology of strengthening treatment of aircraft and helicopter parts by means of surface plastic deformation.
Why is it interesting/should be studied (goal)	The purpose of the study: providing knowledge about the essence of technological processes for the manufacture of monolithic parts with the removal of the allowance; training in methods of rational design of technologies and technological equipment; assimilation of design methods for typical operations for the preparation of relevant technological documentation. Task: study of technological processes of modern methods of production of parts by forming operations, as well as special methods of processing parts, directions of intensification of existing technological processes. To provide knowledge of modern methods and means of technological equipment for the manufacture of monolithic aircraft and helicopter parts by dimensional cutting with the removal of allowance
How can you use the acquired knowledge and skills (competencies)	Ability to communicate in the state language both orally and in writing. Skills in the use of information and communication technologies. Ability to work in a team. The ability to generate new ideas (creativity). Ability to learn and master modern knowledge. The ability to develop and implement technological processes for the production of parts and objects of aviation equipment. The ability to ensure the quality of information technology products and services throughout their life cycle. The ability to choose methods of calculation, design and production, considering the characteristics of different types of aviation equipment
Prerequisites	
Corequisite	
Organization of training	Types of classes: lectures, practical, self-study Forms of education: full-time / part-time Forms of control: exam

<table>
<tr><td>Department</td><td colspan="3">Technology of Aircraft Manufacturing</td></tr>
<tr><td>Faculty</td><td colspan="3">Aircraft Engineering</td></tr>
<tr><td>Teachers</td><td>  </td><td>Name</td><td>Valeriy Sikulskiy</td></tr>
<tr><td></td><td></td><td>Position</td><td>Professor</td></tr>
<tr><td></td><td></td><td>Academic title</td><td>Docent</td></tr>
<tr><td></td><td></td><td>Scientific degree</td><td>Dr.Tech.Sc.</td></tr>
<tr><td></td><td></td><td>e-mail</td><td>v.sikulskiy@khai.edu</td></tr>
<tr><td></td><td>  </td><td>Name</td><td>Oleksiy Pavlenko</td></tr>
<tr><td></td><td></td><td>Position</td><td>Senior Lecturer</td></tr>
<tr><td></td><td></td><td>Academic title</td><td></td></tr>
<tr><td></td><td></td><td>Scientific degree</td><td>PhD</td></tr>
<tr><td></td><td></td><td>e-mail</td><td>alexey.pavlenko@khai.edu</td></tr>
<tr><td>Links to course materials</td><td colspan="3">1. Технологія виробництва літальних апаратів (складально-монтажні роботи) / Кривцов В.С., Воробьев Ю.А., Воронько В.В. та ін.// Навч. посібник до лабораторного практикуму. – Х.: Нац. аерокосм. ун-т «Харк. авіац. ін-т», 2009. – 80 с.
2. Проектування технологічних процесів обробки деталей на верстатах з ЧПК / В. П. Божко. Навч. посібник для студентів машинобудівних спеціальностей вищих навчальних закладів. – Х.: Харк. авіац. ін-т. – 1997 – 131 с.
3. Технологія виготовлення деталей літальних апаратів з видаленням припуску [Текст]: підручник/ В.С. Кривцов [та ін]. – Х.: ХАІ, 2010. – 224 с.
4. Технология производства деталей летательных аппаратов размерной обработкой [Текст] : учеб. пособие по лаб. практикуму / В. Т. Сикульский, Ю. В. Дьяченко, В. П. Божко и др. – Харьков : Нац. аэрокосм. ун-т им. Н. Е. Жуковского «Харьков. авиац. ин-т», 2017. – 180 с.
5. Manufacturing Solutions for The Aerospace Industry. Products Brochure // MAG IAS, LLC. 2015. [Electronic resource]. - Access mode: http://exposant.technotheque.fr/files/docs/ solutions-magdans-aeronautique_1294911440.pdf
6. Training course "Fundamentals of aerospace production technology" in the distance learning system Mentor: https://mentor.khai.edu/course/view.php?id=2333</td></tr>
<tr><td>Link to work program (syllabus)</td><td colspan="3"></td></tr>
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