Sisteme de conducere a zborului I	Flight control systems I
Obiectiv principal	**Course Objective**
Disciplina contribuie la formarea viitorilor ingineri de profil aerospatial, familiarizându-i cu principalele aspecte teoretice şi practice legate de sistemele de presurizare, sistemele de climatizare, oxigen şi combustibil.	The discipline contributes to the formation of future aerospace engineers, familiarizing them with the main theoretical and practical aspects related to pressurization systems, air conditioning systems, oxygen and fuel.
Curs	**Course**
3 ore pe săptămână, total 42 ore	**3 hours weekly, total 42 hours**
- Automatizarea procesului de conducere - Comanda automata a amiscarii longitudinale si laterale - Comanda automata a altitudinii de zbor - Sisteme de comanda a vitezei de zbor - Comanda automata a miscarii avionului la aterizare	- Automating the management process - Automatic control of longitudinal and lateral loading - Automatic altitude control - Flight speed control systems - Automatic landing movement command of the airplane
Laborator	**Laboratory**
2 ore pe săptămână, total 28 ore	**2 hour weekly, total 28 hours**
- Sistem static de comanda automata a unghiului de tangaj, cu constrangerea vitezei de zbor, E.E. cu reactie rigida si lege de conducere de tip P.D. cheme bloc Matlab/Simulink. - Sistem static de comanda automata a unghiului de tangaj, fara constrangerea vitezei de zbor, E.E. cu reactie rigida si lege de conducere de tip P.D. Scheme bloc Matlab/Simulink. - Sistem astatic de comanda automata a unghiului de tangaj, cu constrangerea vitezei de zbor, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. Scheme bloc Matlab/Simulink. - Sistem static de comanda automata a unghiului de directie, cu constrangerea unghiului de derapaj, E.E. cu reactie rigida si lege de conducere de tip P.D. Scheme bloc Matlab/Simulink. - Sistem astatic de comanda automata a unghiului de directie, cu constrangerea unghiului de derapaj, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. Scheme bloc Matlab/Simulink. - Sistem static de comanda automata a unghiului de directie, fara constrangerea unghiului de alunecare, E.E. cu reactie rigida si lege de conducere de tip P.D. Scheme bloc Matlab/Simulink. - Sistem astatic de comanda automata a unghiului de directie, fara constrangerea unghiului de derapaj, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. Scheme bloc Matlab/Simulink. - Sistem static de comanda automata a unghiului de ruliu, cu E.E. cu reactie rigida si lege de conducere P.D. Scheme bloc Matlab/Simulink.	- Static automatic flight angle control system, E.E. with rigid reaction and driving law of type P.D. called Matlab / Simulink blocks. - Static automatic steering angle control, without constraining flight speed, E.E. with rigid reaction and driving law of type P.D. Matlab / Simulink block schematics. - Astatic automatic cruise control angle control system, E.E. with Angle Speed Reaction and P.I.D. Matlab / Simulink block schematics. - Static automatic steering angle control system with slip angle constraint, E.E. with rigid reaction and driving law of type P.D. Matlab / Simulink block schematics. - Astatic automatic steering angle control system with skid angle constraint, E.E. with Angle Speed Reaction and P.I.D. Matlab / Simulink block schematics. - Static automatic steering angle control system, without constraining angle of slip, E.E. with rigid reaction and driving law of type P.D. Matlab / Simulink block schematics. - Automatic steering angle steering system, without constraining the skidding angle, E.E. with Angle Speed Reaction and P.I.D. Matlab / Simulink block schematics. - Static automatic roll control system with E.E. with rigid reaction and driving law P.D. Matlab / Simulink block schematics. - Assatic automatic control of the roll angle, with E.E. with reaction at angular speed and driving law P.I.D. Matlab / Simulink block schematics. - Astatic automatic flight speed control system. Matlab / Simulink block schematics. - Astatic automatic flight altitude control system. Matlab / Simulink block schematics.

- Sistem astatic de comanda automata a unghiului de ruliu, cu E.E. cu reactie dupa viteza unghiulara si lege de conducere P.I.D. Scheme bloc Matlab/Simulink.
- Sistem astatic de comanda automata a vitezei de zbor. Scheme bloc Matlab/Simulink.
- Sistem astatic de comanda automata a altitudinii de zbor. Scheme bloc Matlab/Simulink.
- Sistem static de comanda automata a miscarii laterale. Scheme bloc Matlab/Simulink.

- Static automatic control of the lateral movement. Matlab / Simulink block schematics.

Proiect	Project
1 ora pe săptămână, total 14 ore	**1 hour weekly, total 14 hours**

- Studiul asistat de calculator al unui sistem de comanda automata a ughiului de tangaj, cu constrangerea vitezei de zbor, E.E. cu reactie rigida si lege de conducere de tip P.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui Sistem static de comanda automata a unghiului de tangaj, fara constrangerea vitezei de zbor, E.E. cu reactie rigida si lege de conducere de tip P.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem astatic de comanda automata a unghiului de tangaj, cu constrangerea vitezei de zbor, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem static de comanda automata a unghiului de directie, cu constrangerea unghiului de derapaj, E.E. cu reactie rigida si lege de conducere de tip P.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem astatic de comanda automata a unghiului de directie, cu constrangerea unghiului de derapaj, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem static de comanda automata a unghiului de directie, fara constrangerea unghiului de alunecare, E.E. cu reactie rigida si lege de conducere de tip P.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem astatic de comanda automata a unghiului de directie, fara constrangerea unghiului de derapaj, E.E. cu reactie dupa viteza unghiulara si lege de conducere de tip P.I.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem static de comanda automata a unghiului de ruliu, cu E.E. cu reactie rigida si lege de conducere P.D. – avion uşor, avion mediu, avion greu.
- Studiul asistat de calculator al unui sistem astatic de comanda automata a unghiului de ruliu, cu E.E. cu reactie dupa viteza unghiulara si lege de conducere P.I.D. – avion uşor, avion mediu, avion greu.

- Computer-aided study of an automatic cruise control system, flight speed constraint, E.E. with rigid reaction and driving law of type P.D. - light airplane, medium plane, heavy airplane.
- Computer-assisted study of a Static Automatic Cruise Control System, without constraining flight speed, E.E. with rigid reaction and driving law of type P.D. - light airplane, medium plane, heavy airplane.
- Computer-aided study of an automatic cruise control system, with flight velocity constraint, E.E. with Angle Speed Reaction and P.I.D. - light airplane, medium plane, heavy airplane.
- Computer-aided study of a static steering angle automatic steering system, E.E. with rigid reaction and driving law of type P.D. - light airplane, medium plane, heavy airplane.
- Computer-aided study of an automatic steering angle steering system with skidding constraint, E.E. with Angle Speed Reaction and P.I.D. - light airplane, medium plane, heavy airplane.
- Computer-aided study of a static automatic steering angle control system, without constraining the slip angle, E.E. with rigid reaction and driving law of type P.D. - light airplane, medium plane, heavy airplane.
- Computer-aided study of an automatic steering angle steering system, without constraining the skidding angle, E.E. with Angle Speed Reaction and P.I.D. - light airplane, medium plane, heavy airplane.
- Computer-assisted study of a static automatic rotation angle control system with E.E. with rigid reaction and driving law P.D. - light airplane, medium plane, heavy airplane.
- A computer-assisted study of an automatic automatic rotation angle control system, with E.E. with reaction at angular speed and driving law P.I.D. - light airplane, medium plane, heavy airplane.