NYÍREGYHÁZI EGYETEM
Műszaki és Agrártudományi Intézet
Közlekedéstudományi és
Infotechnológiai Tanszék

Tantárgy: **FRF1104/RM1105/RS1105**
Repülési teljesítmények és tervezés
2026/2027. tanév I. félév
PG / FOSZK VII. évf.

FOGLALKOZÁSI TERV

Tanítási hetek száma: 14
Előadás: heti 2 óra, félévi: 28 óra
Előadó: Dr. Szilágyi Dénes
egyetemi docens

A tantárgy kredit értéke: 3
Gyakorlat: heti 1 óra, félévi: 14 óra
Gyak. vez.: Dr. Szilágyi Dénes
egyetemi docens

Számonkérés formája: gyakorlati jegy
Zárthelyi dolgozatok száma: 3 **megírásának időpontja:** 39. 45. és 51. hét

Kötelező és ajánlott szakirodalmak:
- Flight Planning and Monitoring BGS 2021
- Flight Performance and Planning 1 OXFORD Aviation Services 2020
- FÁBIÁN ANDRÁS: PPL-Kézikönyv, 2023
- AIP Hungary
- Nyomtatványok: terhelési táblázatok / lapok, teljesítmény diagrammok.

A szorgalmi időszak követelményei:
A hallgatók munkájának értékelése az alábbi pontrendszer alapján történik.

Foglalkozásokon a jelenlét, fegyelmezett viselkedés és aktív munkavégzés:
a Tanulmányi és Vizsgaszabályzat szerint.

Órai aktivitással szerezhető	10 p
1. zárthelyi dolgozattal szerezhető	30 p
2. zárthelyi dolgozattal szerezhető	30 p
3. zárthelyi dolgozattal szerezhető	30 p
A maximálisan elérhető pontszám	100 p

Részfeladatonként min 51 %-os teljesítmény elérése kötelező!

Nyíregyháza, 2026. 09. 01.

Dr. Szilágyi Dénes Ph.D.
tantárgyfelelős

Dr. Sikolya László C.Sc.
tanszékvezető

NAPPALI TAGOZAT

Naptári hét	Előadás tárgykör	Óraszám	Gyakorlat tárgykör	Óraszám
37. A	A tömeg és kiegyensúlyozási előírások. 031.01.01.01.01 Describe the relationship between aircraft mass and structural stress. Remark: See also Subject 021 01 01 00. 031.01.01.01.02 Describe why mass must be limited to ensure adequate margins of strength. 031.01.01.02.01 Describe the relationship between aircraft mass and aircraft performance. 031.01.01.02.02 Describe why aircraft mass must be limited to ensure adequate aircraft performance. 031.01.02.01.01 Describe the relationship between CG position and stability/controllability of the aircraft. 031.01.02.01.02 Describe the consequences if CG is in front of the forward limit. 031.01.02.01.03 Describe the consequences if CG is behind the aft limit. 031.01.02.02.01 Describe the relationship between CG position and aircraft performance. 031.01.02.02.02 Describe the effects of CG position on performance parameters (speeds, altitude, endurance and range). 031.02.01.01.01 Define the following mass terms: basic empty mass; dry operating mass; operating mass; take-off mass; landing mass; ramp/taxi mass; in-flight mass (gross mass); zero fuel mass. 031.02.01.02.01 Define the following load terms: payload/traffic load; block fuel; taxi fuel; take-off fuel; trip fuel; reserve fuel (contingency, alternate, final reserve and additional fuel); extra fuel. 031.02.01.02.02 Explain the relationship between the various load-and-mass components listed in 031 02 01 01 and 031 02 01 02. 031.02.01.02.03 Calculate the mass of particular components from other given components. 031.02.01.02.04 Convert fuel mass, fuel volume and fuel density given in different units used in aviation. 031.02.02.01.01 Define the maximum zero fuel mass. 031.02.02.01.02 Define the maximum ramp/taxi mass. 031.02.02.01.03 Define the maximum take-off mass. 031.02.02.01.05 Define the maximum landing mass. 031.02.02.02.01 Describe the following performance and regulated mass limitations: performance-limited take-off mass; performance-limited landing mass; regulated take-off mass; regulated landing mass. 031.02.02.03.01 Describe the maximum floor load (maximum load per unit of area). 031.02.02.03.02 Describe the maximum running load (maximum load per unit of fuselage length). 031.02.03.01.01 Calculate the maximum mass for take-off (regulated take-off mass) given mass-and-load components and structural/ performance limits. 031.02.03.01.02 Calculate the maximum mass for landing (regulated landing mass) given mass-and-load components and structural/ performance limits. 031.02.03.01.03 Calculate the allowed mass for take-off. 031.02.03.02.01 Calculate the maximum allowed traffic load and fuel load in order not to exceed the given allowed take-off mass. 031.02.03.02.02 Calculate ‘under load’/‘over load’ given the allowed mass for take-off, operating mass and actual traffic load. 031.02.03.03.01 Extract the appropriate standard masses for passengers, baggage and crew from relevant documents or	1-2	Alkalmazástechnikai feladatok kiadása. Alapfogalmak és definíciók tisztázása.	1

Naptári hét	Előadás tárgykör	Óraszám	Gyakorlat tárgykör	Óraszám
	operator requirements. 031.02.03.03.02 Calculate the traffic load by using standard masses. 031.04.01.01.01 State where the datum and moment arms for aircraft can be found. 031.04.01.01.02 Extract the appropriate data from given documents. 031.04.01.01.03 Define 'datum' (reference point), 'moment arm' and 'moment'. 031.04.01.02.01 State where the CG position for an aircraft at basic empty mass can be found. 031.04.01.02.02 State where the CG limits for an aircraft can be found. 031.04.01.02.03 Describe the different forms in presenting CG position as distance from datum or other references. 031.04.01.02.04 Explain the meaning of centre of gravity (CG).			
38. B	A tömeg és tömegközéppont számítások, alapfogalmak, korlátozások, a terhek elosztása és rögzítése. A túlterhelés hatásai. 031.04.01.03.01 Extract MAC information from aircraft documents. 031.04.01.03.02 Explain the principle of using per cent MAC for the description of the CG position. 031.04.01.03.03 Calculate the CG position as per cent MAC. 031.04.01.04.01 Extract the appropriate data from given sample documents. 031.04.01.06.01 Extract the appropriate data (e.g. seating schemes, compartment dimensions and limitations) from given sample documents. 031.04.01.07.01 Extract the appropriate data (e.g. fuel-tank capacities and fuel-tank positions) from given sample documents. 031.04.01.07.02 Explain aircraft CG movement as flight progresses given location of fuel tank (inner wing, outer wing, central, additional aft central, horizontal stabiliser) and mass of fuel consumed from that tank and aeroplane's previous CG. 031.04.01.07.03 Explain advantages and risks associated with fuel tanks in the aeroplane's fin or horizontal stabiliser. 031.04.02.01.01 Describe the general procedure and regulations relating to when an aircraft should be weighed, reweighed or data recalculated. Remark: See the applicable operational requirements. 031.04.02.01.02 Extract and interpret entries from/in 'mass (weight) report' of an aircraft. 031.04.02.02.01 Calculate the mass and CG position of an aircraft from given reaction forces on jacking points. 031.04.03.01.01 Extract values for BEM or DOM from given documents. 031.04.03.02.01 Extract values for CG position and moment at BEM or DOM from given documents. 031.04.03.03.01 Extract values from given documents for deviation from standard configuration as a result of varying crew, optional equipment, optional fuel tanks, etc. 031.05.01.01.01 Calculate the CG position of an aircraft by using the formula: CG position = sum of moments / total mass. 031.05.01.02.01 Determine the CG position of an aircraft by using the loading graphs given in sample documents. 031.05.01.03.01 Explain the principle of the index method. 031.05.01.03.02 Define the terms 'index' and 'dry operating index' (DOI), and calculate the DOI given the relevant formula and data. 031.05.01.03.03 Explain the advantage(s) of the index method. 031.05.02.01.01 Explain the principle and the purpose of load sheets.	3-4	Terhelések számítása, a teher elrendezésének tervezése.	2

Naptári hét	Előadás tárgykör	Óraszám	Gyakorlat tárgykör	Óraszám
	031.05.02.01.02 Explain the principle and the purpose of trim sheets. 031.05.02.02.01 Add loading data and calculate masses in a sample load sheet/balance schedule. 031.05.02.02.02 Calculate moments and CG positions. 031.05.02.02.03 Check CG position at zero fuel mass and take-off mass to be within the CG envelope including last-minute changes, if applicable. 031.05.02.03.01 Complete a sample load sheet to determine the 'allowed mass for take-off', 'allowed traffic load' and 'under load'. 031.05.02.03.02 Explain the purpose of each load sheet section. 031.05.02.03.03 Explain that the purpose of boxed maximum figures in load sheet sections is to cross-check the actual and limiting mass values. 031.05.02.03.04 Complete and cross-check a sample load sheet. 031.06.03.01.01 Explain the reasons to restrain or secure cargo and baggage. 031.06.03.01.02 Describe the basic methods to restrain or secure loads (unit load devices secured by latches on roller tracks or to tie down points by straps; bulk cargo restrained by restraining nets attached to attachment points and tie-down points).			
39. A	Repülési teljesítmények alapfogalmai, tömeg és sebességkorlátozások. 032.01.01.01.01 Describe the application of certification specification (CSs) with regard to the different kinds of aeroplanes. 032.01.01.01.02 Describe the general differences between aeroplanes certified according to CS-23 and CS-25. 032.01.01.02.01 Describe the basic concept that the applicable operational requirements differ depending on aeroplane performance. 032.01.01.02.02 Describe the performance classes for commercial air transport according to the applicable operational requirements. 032.01.01.03.01 State that aeroplane performance required for commercial air transport may limit the weight of a dispatched aeroplane in order to achieve a sufficient level of safety.	5-6	Zárthelyi dolgozat.	3
40 B	A felszállás és emelkedés jellemzői 032.02.01.01.04 Describe the European Union airworthiness requirements according to CS-23 relating to aeroplane performance (stall, take-off, climb, landing). 032.02.03.01.01 Define the following distances and masses: take-off distance; landing distance; ground-roll distance; maximum allowed take-off mass; maximum allowed landing mass. 032.02.03.01.02 Explain the effect of flap-setting on the take-off, landing and ground-roll distances. 032.02.03.01.03 Explain the effects of the following runway (RWY) variables on take-off distances: RWY slope; RWY surface conditions: dry, wet and contaminated; RWY elevation. 032.02.03.01.04 For both fixed-pitch and constant-speed propeller aeroplanes, explain the effect of airspeed on thrust during the take-off run. 032.02.03.01.05 Describe the effects of brake release before take-off power is set on the TOD and ASD. 032.02.03.01.06 Explain the effect of wind on take-off and landing distances, and determine the actual headwind/tailwind component given the runway direction, wind speed and direction, by use of wind component graphs,	7-8	Alapfogalmak és definíciók tisztázása.	4

Nap-tári hét	Előadás tárgykör	Óra-szám	Gyakorlat tárgykör	Óra-szám
	mathematical calculations, and rule of thumb. 032.02.03.01.07 Explain why an aeroplane has maximum crosswind limit(s) and determine the crosswind component given the runway direction, wind speed and direction, by use of wind component graphs, mathematical calculations, and rule of thumb. 032.02.03.01.08 Explain the percentage of accountability for headwind and tailwind components during take-off and landing calculations. 032.02.03.01.09 Explain the effect of runway conditions on the landing distance. 032.02.03.01.10 Explain the effects of pressure altitude and temperature on the take-off distance, take-off climb, landing distance and approach climb. 032.02.03.01.11 Describe the landing airborne distance and ground-roll distance and estimate the effect on the landing distance when the aeroplane is too fast or too high at the screen. 032.04.01.01.01 Explain the forces affecting the aeroplane during the take-off run. 032.04.01.01.02 State the effects of thrust-to-weight ratio and flap-setting on ground roll. 032.01.04.01.01 Resolve the forces during a steady climb. 032.01.04.01.02 Define and explain the following terms: critical engine; speed for best angle of climb (VX); speed for best rate of climb (VY). 032.01.04.01.03 Explain climb performance in relation to the thrust available and thrust required (angle of climb), and power available and power required (rate of climb). 032.01.04.01.04 Explain the meaning and effect of 'excess thrust' and 'excess power' in a steady climb. 032.01.04.01.05 Interpret the 'thrust/power required' and 'thrust/power available' curves in a steady climb. 032.01.04.01.06 State the difference between climb angle and gradient. 032.01.04.01.07 Explain the effect of weight on the climb angle and rate of climb, and the speed for best angle and best rate of climb. 032.01.04.01.08 Explain the effects of pressure altitude and temperature, including an inversion on climb performance (angle and rate of climb). 032.01.04.01.09 Explain the effect of configuration on climb performance (angle and rate of climb, and VX and VY). 032.01.04.01.10 Describe the effect of engine failure on climb performance (angle and rate of climb, and VX and VY). 032.01.04.01.11 Calculate the all-engine and one-engine-out climb gradient from given values of engine thrust and aeroplane drag and weight.			
41 A	Útvonal-jellemzők, a repülőgép süllyedő mozgása. Süllyedési profilok. A leszállás jellemzői. 032.01.02.03.01 Name the following factors that affect aeroplane performance: pressure altitude and temperature, wind, aeroplane weight, aeroplane configuration, aeroplane anti-skid status, aeroplane centre of gravity (CG), aerodrome runway surface, and aerodrome runway slope. 032.01.02.03.02 Describe how, for different density altitudes, the thrust and power available vary with speed for a propeller-driven aeroplane. 032.01.02.03.03 Describe how, for different density altitudes, the thrust and power available vary with speed for a turbojet aeroplane. 032.01.02.03.04 Describe how, for different density altitudes, the drag and power required vary with indicated airspeeds	9-10	Teljesítményszámítások.	5

Nap-tári hét	Előadás tárgykör	Óra-szám	Gyakorlat tárgykör	Óra-szám
	(IAS) and true airspeeds (TAS). 032.01.02.03.05 Describe how, for different aeroplane weights and configurations, the drag and power required vary with IAS and TAS. 032.01.03.01.01 Explain how drag (thrust) and power required vary with speed in straight and level flight. 032.01.03.01.02 Explain the effect of excess thrust and power on speed in level flight. 032.01.03.01.03 Interpret the 'thrust/power required' and 'thrust/power available' curves in straight and level flight. 032.01.03.01.04 Describe how the maximum achievable straight and level flight IAS and TAS vary with altitude. 032.01.03.01.05 Describe situations in which a pilot may elect to fly for 'maximum endurance' or 'maximum range'. 032.01.03.02.02 Define a propeller-driven aeroplane's SFC and describe how it affects fuel flow and specific range. 032.01.03.02.04 Explain the optimum speed to achieve maximum SR for a propeller-driven aeroplane in relation to the power required and drag graphs.			
42 B	Útvonal-jellemzők, a repülőgép süllyedő mozgása. Süllyedési profilok. A leszállás jellemzői. 032.01.03.02.05 Explain the effect of aeroplane weight and CG position on fuel consumption, range and the optimum speed for maximum SR. 032.01.03.02.07 Explain how SR for a turbojet aeroplane varies with altitude and under different meteorological conditions. 032.01.03.02.08 Explain how SRG for a propeller-driven aeroplane varies with altitude and under different meteorological conditions. 032.01.03.03.03 Explain fuel flow in relation to TAS and thrust for a propeller-driven aeroplane. 032.01.03.03.04 State the speed for maximum endurance for a propeller-driven aeroplane and the disadvantages of holding at this speed (e.g. high angle of attack (AoA) and lack of speed stability). 032.01.03.03.06 Explain the effect of wind and altitude on endurance, and the maximum endurance speed for a propeller-driven aeroplane. 032.01.05.01.01 Resolve the forces during steady descent and in the glide. 032.01.05.01.02 Explain descent performance in relation to thrust available and thrust required (drag), and power available and power required. 032.01.05.01.03 Explain the meaning of 'excess thrust required' (excess drag) and 'excess power required' in a steady descent. 032.01.05.01.04 Interpret the 'thrust/power required' and 'thrust/power available' curves in a steady descent. 032.01.05.01.05 Explain the effect of mass, altitude, wind, speed and configuration on the glide descent. 032.01.05.01.06 Explain the effect of mass, altitude, wind, speed and configuration on the powered descent. 032.02.01.01.01 Define the following speeds: stall speeds VS, VS0 and VS1; rotation speed VR; speed at 50 ft above the take-off surface level; reference landing speed VREF. 032.02.01.01.02 Describe the limitations on VR, on the speed at 50 ft above the take-off surface and on VREF, and given the appropriate stall speed, estimate the values based on these limitations for a single-engine, class B aeroplane. 032.02.01.01.03 Describe the limitations on VR, on the speed at 50 ft above the take-off surface and on VREF, and given	11-12	Teljesítményszámítások.	6

Nap-tári hét	Előadás tárgykör	Óra-szám	Gyakorlat tárgykör	Óra-szám
	the appropriate stall speed, estimate the values based on these limitations for a multi-engine, class B aeroplane. 032.02.04.01.01 Describe the climb and en-route requirements according to the applicable operational requirements.			
43 A	Autumn break	Őszi szünet		
44 B	SEP repülőgépek teljesítményszámítása, a felszállási, emelkedési, utazó, és leszálló teljesítményadatok használata. 032.02.04.01.02 For a single-engine aeroplane, calculate the expected obstacle clearance (in visual meteorological conditions (VMC)) given gross climb performance, obstacle height and distance from reference zero. 032.03.03.01.01 Determine the field-length-limited take-off mass and take-off speeds given defactored distance, configuration, pressure altitude, temperature and headwind/tailwind component. 032.03.03.01.02 Determine the accelerate-go distance and accelerate-stop distance data. 033.03.01.01.02 Determine relevant data, such as fuel capacity, fuel flow/ consumption at different power/thrust settings, altitudes and atmospheric conditions, from the flight manual. 033.03.01.01.03 Calculate the attainable flight time/range from given average fuel flow/consumption and available amount of fuel. 033.03.01.01.04 Calculate the required fuel from given average fuel flow/ consumption and required time/range to be flown. 032.02.04.01.03 For a single-engine aeroplane, calculate the net glide gradient and net glide distance, given aeroplane altitude, terrain elevation, gross gradient or lift/drag ratio (L/D ratio), and headwind or tailwind component. 032.03.03.01.03 Determine the ground-roll distance and take-off distance from graphs.	13-14	Teljesítményszámítások.	7
45 A	Légiforgalmi információs kiadványok felépítése és tartalma, beszerzése és használata 0033.01.01.03.03 Find all relevant aeronautical and regulatory information required for VFR flight planning from the aerodrome charts or aerodrome directory.	15-16	Zárthelyi dolgozat.	8
46 B	VFR útvonal térképek jelölésrendszere és használata. 033.01.01.01.01 Select routes taking the following criteria into account: classification of airspace; restricted areas; VFR semicircular rules; visually conspicuous points; radio-navigation aids. 033.01.01.01.02 Find the frequencies or identifiers of radio-navigation aids from charts. 033.01.01.01.03 Find the communication frequencies and call signs for the following: control agencies and service facilities; flight information service (FIS); weather information stations; automatic terminal information service (ATIS). 033.01.01.02.01 Choose visual waypoints in accordance with specified criteria (large, unique, contrast, vertical extent, etc.). 033.01.01.02.02 Measure courses and distances from a VFR chart. 033.01.01.02.03 Find the highest obstacle within a given distance on either side of the course.	17-18	Irány és távolságmérések.	9

Naptári hét	Előadás tárgykör	Óraszám	Gyakorlat tárgykör	Óraszám
	033.01.01.02.04 Find the following data from a VFR chart and transfer them to a navigation plan: waypoints or turning points; distances; true/magnetic courses. 033.01.01.02.05 Calculate the minimum pressure altitude with a given obstacle clearance or true altitude from a given altitude or pressure altitude from minimum grid-area altitude using outside air temperature (OAT) and QNH. 033.01.01.02.06 Calculate the vertical or horizontal distance and time to climb or descend to/from a given level or altitude with given data. 033.01.01.02.07 Explain how to determine the position of a significant VFR point for insertion into a global navigation satellite system (GNSS) flight plan, using the distance and bearing from an existing significant point and using coordinates. 033.01.01.03.01 Explain the reasons for studying the visual departure procedures and the available approach procedures. 033.01.01.03.02 Find all visual procedures which can be expected at the departure, destination and alternate aerodromes.			
47 A	VFR útvonal térképek jelölésrendszere és használata. 033.01.01.05.03 Calculate individual and accumulated times for each leg to destination and alternate aerodromes. 033.02.01.07.01 Complete a navigation plan with the courses, distances and frequencies taken from charts. 033.02.01.07.03 Determine the position of top of climb (TOC) and top of descent (TOD) from given appropriate data. 033.02.01.07.04 Determine variation and calculate magnetic/true courses. 033.02.01.07.05 Calculate TAS from given aircraft performance data, altitude and OAT. 033.02.01.07.06 Calculate wind correction angles (WCAs)/drift and ground speeds (GSs). 033.02.01.07.07 Calculate individual and accumulated times for each leg to destination and alternate aerodromes. 033.06.01.01.02 Calculate GS by using actual in-flight parameters. 033.06.01.01.03 Calculate the expected leg times by using actual in-flight parameters. 033.06.01.01.04 Enter, in the progress of flight, at the checkpoint or turning point, the ‘actual time-over’ and the ‘estimated time-over’ for the next checkpoint into the flight plan. 033.06.01.02.01 Explain why fuel checks must be carried out in flight at regular intervals and why relevant fuel data must be recorded. 033.06.01.02.02 Assess deviations of actual fuel consumption from planned consumption. 033.06.01.02.03 Calculate fuel quantity used, fuel consumption, and fuel remaining at navigation checkpoints/waypoints. 033.06.01.02.04 Compare the actual with the planned fuel consumption by means of calculation. 033.06.01.02.05 Determine the remaining range and endurance by means of calculation.	19-20	Akadályok észlelése, biztonságos magasságok meghatározása.	10
48 B	VFR Útvonaltervezés: navigációs terv, üzemanyag tervezés. 033.01.01.05.01 Calculate the true airspeed (TAS) from given aircraft performance data, altitude and OAT. 033.01.01.05.02 Calculate wind correction angles (WCAs), drift and ground speeds (GS). 033.03.01.01.01 Convert to volume, mass and density given in different units which are commonly used in aviation. 033.03.01.01.02 Determine relevant data, such as fuel capacity, fuel flow/ consumption at different power/thrust settings, altitudes and atmospheric conditions, from the flight manual. 033.03.01.01.03 Calculate the attainable flight time/range from given average fuel flow/consumption and available amount of fuel. 033.03.01.01.04 Calculate the required fuel from given average fuel flow/ consumption and required time/range to be	21-22	Üzemanyag, emelkedési süllyedési gradiens számítás.	11

Nap-tári hét	Előadás tárgykör	Óra-szám	Gyakorlat tárgykör	Óra-szám
	flown. 033.03.01.01.05 Calculate the required fuel for a VFR flight from given forecast meteorological conditions. 033.03.01.01.06 State the minimum amount of remaining fuel required on arrival at the destination and alternate aerodromes/ heliports.			
49 A	VFR Útvonaltervezés: navigációs terv, üzemanyag tervezés. 033.03.02.01.01 Determine the fuel required for engine start and taxiing by consulting the fuel-usage tables or graphs from the flight manual taking into account all the relevant conditions. 033.03.02.02.02 Determine the trip fuel for the flight by using data from the fuel tables or graphs from the flight manual. 033.03.02.03.01 Explain the reasons for having contingency fuel. 033.03.02.03.02 Calculate the contingency fuel according to the applicable operational requirements. 033.03.02.03.05 Explain the reasons and regulations for having final reserve fuel. 033.03.02.03.06 Calculate the final reserve fuel for an aircraft in accordance with the applicable operational requirements and by using relevant data from the flight manual. 033.03.02.04.01 Explain the reasons and regulations for having extra fuel in accordance with the applicable operational requirements. 033.03.02.05.01 Calculate the total fuel required for a given flight. 033.03.02.05.02 Complete the fuel plan.	23-24	A navigációs számító-tárcsa használata	12
50 B	ICAO Flight Plan. 033.05.01.01.01 State the reasons for a fixed format of an ICAO ATS FPL. 033.05.01.01.02 Determine the correct entries to complete an ATS FPL plus decode and interpret the entries in a completed ATS FPL, particularly for the following: aircraft identification (Item 7); flight rules and type of flight (Item 8); number and type of aircraft and wake-turbulence category (Item 9); equipment (Item 10); departure aerodrome and time (Item 13); route (Item 15); destination aerodrome, total estimated elapsed time and alternate aerodrome (Item 16); other information (Item 18); supplementary information (Item 19). 033.06.01.01.01 State the reasons for possible deviations from the planned track and planned timings.	25-26	ICAO Flight Plan kitöltése útvonalterv alapján.	13
51 A	Zárthelyi dolgozat.	27-28	Zárthelyi dolgozat.	14