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EUROCONTROL

EUROCONTROL Specification

EUROCONTROL Specifications for the ATCO Common Core Content Initial Training

Annex 6: Approach Control Surveillance Rating - APS

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EUROPEAN ORGANISATION
FOR THE SAFETY OF AIR NAVIGATION

EUROCONTROL

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Annex 6 Approach Control Surveillance Rating APS

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EXECUTIVE SUMMARY

Annex 6 of the EUROCONTROL Specification for the ATCO Common Core Content Initial Training V2.0 details the training objectives for the **Rating ATC training: Approach Control Surveillance**.

For training organisations providing ATCO training to meet the requirements laid down in the **Commission Regulation (EU) 2015/340 laying down technical requirements and administrative procedures relating to air traffic controllers' licences and certificates**, and the acceptable means of compliance (AMCs) associated with the regulation, this syllabus does not change any of the content in the regulation, but rather provides a document that combines the relevant elements into a familiar user format. For European organisations not required to comply with EU legislation, it provides an **Approach Control Surveillance Rating training syllab**us that retains references to ICAO documentation.

Rating training is defined ***as theoretical and practical training designed to impart knowledge and practical skills related to a specific rating and, if applicable, rating endorsement.***

The composition and topics were chosen based on the **Commission Regulation (EU) 2015/340** Annex I — Rating training (Reference: Annex I — Part ATCO Subpart D, Section 2, ATCO.D.010(a)(2)(v)) and ICAO Annex 1 requirements for an Air Traffic Control licence. The structure of the syllabus reflects a logical grouping of objectives into coherent subjects.

The order of subjects and objectives is neither intended to convey a pedagogical sequence nor to indicate a relative level of importance. No recommendation is made in this area. When teaching the objectives, it is envisaged that different training methodologies will be used.

Prior to developing or updating the **APS Rating training course,** training providers must be familiar with the information contained in the EUROCONTROL Specification for the ATCO Common Core Content Initial Training V2.0, particularly Section 6 (How to use this document) which contains, amongst other items, the fundamental principles that are applied to the Specification.

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SUBJECT 1: INTRODUCTION TO THE COURSE

The subject objective is:

Learners shall know and understand the training programme that they will follow and learn how to obtain the appropriate information.

TOPIC INTR 1 - COURSE MANAGEMENT

Subtopic INTR 1.1 - Course introduction				
APS INTR 1.1.1	Explain the aims and main objectives of the course.	2		ALL
Subtopic INTR 1.2 - Course administration				
APS INTR 1.2.1	State course administration.	1		ALL
Subtopic INTR 1.3 - Study material and training documentation				
APS INTR 1.3.1	Use appropriate documentation and their sources for course studies.	3	*Optional content: training documentation, library, CBT library, web, learning management server*	ALL
APS INTR 1.3.2	Integrate appropriate information into course studies.	4	Training documentation *Optional content: supplementary information, library*	ALL

TOPIC INTR 2 - INTRODUCTION TO THE ATC TRAINING COURSE

Subtopic INTR 2.1 - Course content and organisation				
APS INTR 2.1.1	State the different training methods applied in the course.	1	Theoretical training, practical training, self-study, types of training events	ALL
APS INTR 2.1.2	State the subjects of the course and their purpose.	1		ALL
APS INTR 2.1.3	Describe the organisation of theoretical training.	2	*Optional content: course programme*	ALL
APS INTR 2.1.4	Describe the organisation of practical training.	2	*Optional content: PTP, simulation, briefing, debriefing, course programme*	ALL

Subtopic INTR 2.2 - Training ethos				
APS INTR 2.2.1	Recognise the feedback mechanisms available.	1	Training progress, assessment, briefing, debriefing, learner/instructor feedback, instructor/instructor feedback	ALL
Subtopic INTR 2.3 - Assessment process				
APS INTR 2.3.1	Describe the assessment process.	2		ALL

SUBJECT 2: AVIATION LAW

The subject objective is:

Learners shall know, understand and apply the Rules of the Air and the Regulations regarding reporting, airspace and appreciate the Licensing and Competence principles.

TOPIC LAW 1 - ATCO LICENSING/CERTIFICATE OF COMPETENCE

Subtopic LAW 1.1 - Privileges and conditions				
APS LAW 1.1.1	Appreciate the conditions which shall be met to issue an Approach Control Surveillance rating.	3	Regulation (EU) 2015/340 on ATCO Licensing ICAO Annex 1 *Optional content: national documents*	APS
APS LAW 1.1.2	Explain how to maintain and update professional knowledge and skills to retain competence in the operational environment.	2		ALL
APS LAW 1.1.3	Explain the conditions for suspension/revocation of ATCO licence.	2	Regulation (EU) 2015/340 on ATCO Licensing ICAO Annex 1	ALL

TOPIC LAW 2 - RULES AND REGULATIONS

Subtopic LAW 2.1 - Reports				
APS LAW 2.1.1	List the standard forms for reports.	1	Air traffic incident report *Optional content: routine air reports, breach of regulations, watch/log book, records*	ALL
APS LAW 2.1.2	Describe the functions of, and processes for, reporting.	2	Reporting culture, air traffic incident report *Optional content: breach of regulations, watch/log book, records, voluntary reporting, ESARR 2*	ALL
APS LAW 2.1.3	Use forms for reporting.	3	Regulation (EU) No 376/2014, air traffic incident reporting form(s) ICAO Doc 4444 Appendix 4, air traffic incident reporting form(s) *Optional content: routine air reports, breach of regulations, watch/log book, records*	ALL

Subtopic LAW 2.2 - Airspace				
APS LAW 2.2.1	Appreciate classes and structure of airspace and their relevance to Approach Control Surveillance rating operations.	3		APS
APS LAW 2.2.2	Provide planning, coordination and control actions appropriate to the airspace classification and structure.	4	*Optional content: Regulation (EU) No 923/2012, ICAO Annex 2, ICAO Annex 11, international requirements, civil requirements, military requirements, areas of responsibility, sectorization, national requirements*	ALL
APS LAW 2.2.3	Appreciate responsibility for terrain clearance.	3		ALL

TOPIC LAW 3 - ATC SAFETY MANAGEMENT

Subtopic LAW 3.1 - Feedback process				
APS LAW 3.1.1	State the importance of controller contribution to the feedback process.	1	*Optional content: voluntary reporting*	ALL
APS LAW 3.1.2	Describe how reported occurrences are analysed.	2	*Optional content: ESARR 2, local procedures*	ALL
APS LAW 3.1.3	Name the means used to disseminate recommendations.	1	*Optional content: safety letters, safety boards web pages*	ALL
APS LAW 3.1.4	Appreciate the 'Just Culture' concept.	3	Benefits, prerequisites, constraints *Optional content: EAM 2 GUI 6, GAIN Report*	ALL
Subtopic LAW 3.2 - Safety Investigation				
APS LAW 3.2.1	Describe role and mission of Safety Investigation in the improvement of safety.	2		ALL
APS LAW 3.2.2	Define working methods of Safety Investigation.	1		ALL

SUBJECT 3: AIR TRAFFIC MANAGEMENT

The subject objective is:

Learners shall manage air traffic to ensure safe, orderly and expeditious services.

TOPIC ATM 1 - PROVISION OF SERVICES

Subtopic ATM 1.1 - Air traffic control (ATC) service				
APS ATM 1.1.1	Appreciate own area of responsibility.	3		APP ACP APS ACS
APS ATM 1.1.2	Provide approach control service.	4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444, operation manuals ICAO Annex 11, ICAO Doc 7030, ICAO Doc 4444, operation manuals	APP APS
Subtopic ATM 1.2 - Flight information service (FIS)				
APS ATM 1.2.1	Provide FIS.	4	ICAO Doc 4444 *Optional content: national documents*	*ALL*
APS ATM 1.2.2	Use ATS surveillance system for the provision of FIS.	3	ICAO Doc 4444, information to identified aircraft concerning: traffic, navigation *Optional content: weather*	APS ACS
APS ATM 1.2.3	Issue appropriate information concerning the location of conflicting traffic.	3	ICAO Doc 4444, traffic information, essential traffic information	APS ACS *APP* *ACP*
APS ATM 1.2.4	Appreciate the use of ATIS for the provision of flight information service by approach controller.	3		APS *APP*

Subtopic ATM 1.3 - Alerting service (ALRS)				
APS ATM 1.3.1	Provide ALRS.	4	ICAO Doc 4444 *Optional content: national documents*	ALL
APS ATM 1.3.2	Respond to distress and urgency messages and signals.	3	Regulation (EU) No 923/2012, ICAO Annex 10, ICAO Doc 4444 ICAO Annex 10, ICAO Doc 4444 *Optional content: EUROCONTROL Guidelines for Controller Training in the Handling of Unusual/Emergency Situations*	ALL
APS ATM 1.3.3	Use ATS surveillance system for the provision of ALRS.	3		APS ACS
Subtopic ATM 1.4 - ATS system capacity and air traffic flow management				
APS ATM 1.4.1	Appreciate principles of ATS system capacity and air traffic flow management.	3	*Optional content: EUROCONTROL ATFCM Users Manual, FABs, FUA, free flight, etc.*	APP ACP APS ACS
APS ATM 1.4.2	Apply flow management procedures in the provision of ATC.	3	*Optional content: EUROCONTROL ATFCM Users Manual*	APP ACP APS ACS
APS ATM 1.4.3	Organise traffic flows and patterns to take account of airspace boundaries.	4	*Optional content: civil and military, controlled, uncontrolled, advisory, restricted, danger, prohibited, special rules, sector boundaries, national boundaries, FIR boundaries, delegated airspace, transfer of control, transfer of communications, en-route, off-route*	APP ACP APS ACS
APS ATM 1.4.4	Organise traffic flows and patterns to take account of areas of responsibility.	4	*Optional content: EUROCONTROL ATFCM Users Manual*	APP ACP APS ACS

Subtopic ATM 1.4 - ATS system capacity and air traffic flow management				
APS ATM 1.4.5	Inform supervisor of situation.	3	*Optional content: abnormal situations, decrease in sector capacity, limitations on systems and equipment, changes in workload/capacity, unusual meteorological conditions, relevant information like: reported ground-based incidents, forest fire, smoke, oil pollution*	APP ACP APS ACS
APS ATM 1.4.6	Organise traffic flows and patterns to take account of ATS surveillance system capability.	4		APS ACS
Subtopic ATM 1.5 - Airspace management (ASM)				
APS ATM 1.5.1	Appreciate the principles and means of ASM.	3	Regulation (EC) No 551/2004, Regulation (EC) 2150/2005, Regulation (EC) No 730/2006 EUROCONTROL ASM HBK - Airspace Management Handbook for the application of FUA *Optional content: FABs, EUROCONTROL Specification for the application of FUA, TSAs, CDRs, CBAs*	APP ACP APS ACS
APS ATM 1.5.2	Organise traffic to take account of ASM.	4	Real-time activation, deactivation or reallocation of airspace *Optional content: CDR, TSA, TRA, CBA*	APS *ACS*

TOPIC ATM 2 - COMMUNICATION

Subtopic ATM 2.1 - Effective communication				
APS ATM 2.1.1	Use approved phraseology.	3	ICAO Doc 4444 *Optional content: ICAO Doc 9432 RTF manual, standard words and phrases as contained in ICAO Annex 10 Vol. 2*	ALL
APS ATM 2.1.2	Ensure effective communication.	4	Communication techniques, readback/verification of readback	ALL

TOPIC ATM 3 - ATC CLEARANCES AND ATC INSTRUCTIONS

Subtopic ATM 3.1 - ATC clearances				
APS ATM 3.1.1	Issue appropriate ATC clearances.	3	ICAO Doc 4444 *Optional content: national documents*	ALL
APS ATM 3.1.2	Integrate appropriate ATC clearances in control service.	4		ALL
APS ATM 3.1.3	Ensure the agreed course of action is carried out.	4		ALL
Subtopic ATM 3.2 - ATC instructions				
APS ATM 3.2.1	Issue appropriate ATC instructions.	3	ICAO Doc 4444 *Optional content: national documents*	ALL
APS ATM 3.2.2	Integrate appropriate ATC instructions in control service.	4		ALL
APS ATM 3.2.3	Ensure the agreed course of action is carried out.	4		ALL

TOPIC ATM 4 - COORDINATION

Subtopic ATM 4.1 - Necessity for coordination				
APS ATM 4.1.1	Identify the need for coordination.	3		ALL
Subtopic ATM 4.2 - Tools and methods for coordination				
APS ATM 4.2.1	Use the available tools for coordination.	3	*Optional content: electronic transfer of flight data, telephone, interphone, intercom, direct speech, radiotelephone (RTF), local agreements, automated system coordination*	ALL

Subtopic ATM 4.3 - Coordination procedures				
APS ATM 4.3.1	Initiate appropriate coordination.	3	Delegation/transfer of responsibility for air-ground communications and separation, transfer of control, etc. ICAO Doc 4444 *Optional content: release point*	ALL
APS ATM 4.3.2	Analyse effect of coordination requested by an adjacent position/unit.	4	*Optional content: delegation/transfer of responsibility for air-ground communications and separation, release point, transfer of control, etc.*	ALL
APS ATM 4.3.3	Select, after negotiation, an appropriate course of action.	5		ALL
APS ATM 4.3.4	Ensure the agreed course of action is carried out.	4		ALL
APS ATM 4.3.5	Coordinate in the provision of FIS.	4	ICAO Doc 4444	ALL
APS ATM 4.3.6	Coordinate in the provision of ALRS.	4	ICAO Doc 4444	ALL

TOPIC ATM 5 - ALTIMETRY AND LEVEL ALLOCATION

Subtopic ATM 5.1 - Altimetry				
APS ATM 5.1.1	Allocate levels according to altimetry data.	4	ICAO Doc 8168, ICAO Doc 4444	ALL
APS ATM 5.1.2	Ensure separation according to altimetry data.	4	*Optional content: transition level, transition altitude, transition layer, height, flight level, altitude, vertical distance to airspace boundaries*	ALL
Subtopic ATM 5.2 - Terrain clearance				
APS ATM 5.2.1	Provide planning, coordination and control actions appropriate to the rules for minimum safe levels and terrain clearance.	4	*Optional content: minimum vectoring altitude, terrain clearance dimensions, minimum safe altitudes, transition level, minimum flight level, minimum sector altitude*	APS ACS

TOPIC ATM 6 - SEPARATIONS

Subtopic ATM 6.1 - Vertical separation				
APS ATM 6.1.1	Provide standard vertical separation.	4	ICAO Doc 4444, ICAO Doc 7030, level allocation, during climb/descent, rate of climb/descent, holding pattern	APP APS
APS ATM 6.1.2	Provide increased vertical separation.	4	ICAO Doc 4444, ICAO Doc 7030 *Optional content: level allocation, during climb/descent, rate of climb/descent*	APP ACP APS ACS
APS ATM 6.1.3	Appreciate the application of vertical emergency separation.	3	ICAO Doc 4444, ICAO Doc 7030	APP ACP APS ACS
APS ATM 6.1.4	Provide vertical separation in a surveillance environment.	4	Pressure altitude-derived information, pilot level reports *Optional content: into/out of ATS surveillance system coverage*	APS ACS
Subtopic ATM 6.2 - Longitudinal separation in a surveillance environment				
APS ATM 6.2.1	Provide longitudinal separation in a surveillance environment.	4	Successive departures, successive arrivals, overflights, speed control, silent transfer, ICAO Doc 4444	APS
Subtopic ATM 6.3 - Delegation of separation				
APS ATM 6.3.1	Delegate separation to pilots in the case of aircraft executing successive visual approaches.	4		APP APS
APS ATM 6.3.2	Appreciate the conditions which must be met when delegating separation to pilots to fly maintaining own separation while in VMC.	3	ICAO Doc 4444	APP APS
Subtopic ATM 6.4 - Wake turbulence distance-based separation				
APS ATM 6.4.1	Provide distance-based wake turbulence separation.	4	ICAO Doc 4444 *Optional content: national documents*	APS *ACS*

Subtopic ATM 6.5 - Separation based on ATS surveillance systems				
APS ATM 6.5.1	Describe how separation based on ATS surveillance systems is applied.	2	ICAO Doc 4444	APS *ACS*
APS ATM 6.5.2	Provide horizontal separation.	4	ICAO Doc 4444, ICAO Doc 7030, local operation manuals, holding	APS *ACS*
APS ATM 6.5.3	Provide horizontal separation by vectoring in a variety of situations.	4	*Optional content: transit, meteorological phenomena, vectoring for approach, departure vs transit vs arrival*	APS *ACS*
APS ATM 6.5.4	Ensure horizontal or vertical separation from airspace boundaries.	4	Adjacent sectors, PRD, TSAs.	APS *ACS*
TOPIC ATM 7 - AIRBORNE COLLISION AVOIDANCE SYSTEMS AND GROUND-BASED SAFETY NETS				
Subtopic ATM 7.1 - Airborne collision avoidance systems				
APS ATM 7.1.1	Differentiate between ACAS advisory thresholds and separation standards applicable in the approach control environment.	2	ICAO Doc 9863 *Optional content: EUROCONTROL TCAS web page*	APP APS
APS ATM 7.1.2	Describe the controller responsibility during and following an ACAS RA reported by pilot.	2	ICAO Doc 4444	ALL
APS ATM 7.1.3	Respond to pilot notification of actions based on airborne systems warnings.	3	ACAS, TAWS *Optional content: EUROCONTROL ACAS web page*	ALL
Subtopic ATM 7.2 - Ground-based safety nets				
APS ATM 7.2.1	Describe the controller responsibility during and following safety net warnings.	2	ICAO Doc 4444 *Optional content: STCA, MSAW, APW, APM*	APS ACS
APS ATM 7.2.2	Respond to ground-based safety net warnings.	3	*Optional content: STCA, MSAW, APW, APM*	APS ACS

TOPIC ATM 8 - DATA DISPLAY

Subtopic ATM 8.1 - Data management				
APS ATM 8.1.1	Update the data display to accurately reflect the traffic situation.	3	*Optional content: information displayed, strip marking procedures, electronic information data displays, actions based on traffic display information, calculation of EETs*	ALL
APS ATM 8.1.2	Analyse pertinent data on data displays.	4		ALL
APS ATM 8.1.3	Organise pertinent data on data displays.	4		ALL
APS ATM 8.1.4	Obtain flight plan information.	3	CPL, FPL, supplementary information *Optional content: RPL, AFIL, etc.*	ALL
APS ATM 8.1.5	Use flight plan information.	3		ALL

TOPIC ATM 9 - OPERATIONAL ENVIRONMENT (SIMULATED)

Subtopic ATM 9.1 - Integrity of the operational environment				
APS ATM 9.1.1	Obtain information concerning the operational environment.	3	*Optional content: briefing, notices, local orders, verification of information*	ALL
APS ATM 9.1.2	Ensure the integrity of the operational environment.	4	*Optional content: integrity of displays, verification of the information provided by displays, etc.*	APP ACP APS ACS
Subtopic ATM 9.2 - Verification of the currency of operational procedures				
APS ATM 9.2.1	Check all relevant documentation before managing traffic.	3	*Optional content: briefing, LOAs, NOTAM, AICs*	ALL
APS ATM 9.2.2	Manage traffic in accordance with procedural changes.	4		APP ACP APS ACS

Subtopic ATM 9.3 - Handover-takeover				
APS ATM 9.3.1	Transfer information to the relieving controller.	3		ALL
APS ATM 9.3.2	Obtain information from the controller handing over.	3		ALL

TOPIC ATM 10 - PROVISION OF CONTROL SERVICE

Subtopic ATM 10.1 - Responsibility and processing of information				
APS ATM 10.1.1	Describe the division of responsibility between air traffic control units.	2	ICAO Doc 4444	*ALL*
APS ATM 10.1.2	Describe the responsibility in regard to military traffic.	2	ICAO Doc 4444 *Optional content: ICAO Doc 9554*	*ALL*
APS ATM 10.1.3	Describe the responsibility in regard to unmanned free balloons.	2	ICAO Doc 4444	APP ACP APS ACS
APS ATM 10.1.4	Obtain operational information.	3	ICAO Doc 4444, local operation manuals	APP ACP APS ACS
APS ATM 10.1.5	Interpret operational information.	5		APP ACP APS ACS
APS ATM 10.1.6	Organise forwarding of operational information.	4	*Optional content: including the use of backup procedures*	APP ACP APS ACS
APS ATM 10.1.7	Integrate operational information into control decisions.	4		APP ACP APS ACS
APS ATM 10.1.8	Appreciate the influence of operational requirements.	3	*Optional content: military flying, calibration flights, aerial photography*	*ALL*

Subtopic ATM 10.2 - ATS surveillance service				
APS ATM 10.2.1	Explain the responsibility for the provision of an ATS surveillance service appropriate to APS rating.	2	ICAO Doc 4444, ICAO Annex 11, local operation manuals	APS
APS ATM 10.2.2	Explain the functions that may be performed with the use of ATS surveillance systems derived information presented on a situation display.	2	ICAO Doc 4444	APS *ACS*
APS ATM 10.2.3	Provide planning, coordination and control actions appropriate to the VFR, SVFR and IFR in VMC and IMC.	4	Regulation (EU) No 923/2012, ICAO Annex 11, ICAO Doc 4444 ICAO Annex 2, ICAO Annex 11, ICAO Doc 4444	APS APP
APS ATM 10.2.4	Apply the procedures for termination of ATS surveillance service.	3	ICAO Doc 4444 *Optional content: transfer of control, termination or interruption of ATS surveillance service*	APS ACS
Subtopic ATM 10.3 - Traffic management process				
APS ATM 10.3.1	Ensure that situational awareness is maintained.	4	Information gathering, scanning, traffic projection	APS ACS
APS ATM 10.3.2	Detect conflicts in time for appropriate resolution.	4		ALL
APS ATM 10.3.3	Identify potential solutions to achieve a safe and effective traffic flow.	3		APP ACP APS ACS
APS ATM 10.3.4	Evaluate possible outcomes of different planning and control actions.	5		APP ACP APS ACS
APS ATM 10.3.5	Select an appropriate plan in time to achieve safe and effective traffic flow.	5		APP ACP APS ACS
APS ATM 10.3.6	Ensure an adequate priority of actions.	4		*ALL*
APS ATM 10.3.7	Execute selected plan in a timely manner.	3		APP ACP APS ACS
APS ATM 10.3.8	Ensure a safe and efficient outcome is achieved.	4	Traffic monitoring, adaptability and follow up	ALL

Subtopic ATM 10.4 - Handling traffic				
APS ATM 10.4.1	Manage arrivals, departures and overflights.	4		APP ACP APS ACS
APS ATM 10.4.2	Balance the workload against personal capacity.	5	*Optional content: re-routing, re-planning, prioritising solutions, denying requests, delegating responsibility for separation*	APP ACP APS ACS
APS ATM 10.4.3	Define flight path monitoring and vectoring.	1	ICAO Doc 4444	APS ACS
APS ATM 10.4.4	Explain the requirements for vectoring and termination of vectoring.	2	ICAO Doc 4444	APS ACS
APS ATM 10.4.5	Provide vectoring.	4	ICAO Doc 4444 *Optional content: separation, expediting arrivals, departures and/or climb to cruising levels, aircraft leaving the hold, navigation assistance, uncontrolled airspace, etc.*	APS ACS
APS ATM 10.4.6	Apply the procedures for termination of vectoring.	3	ICAO Doc 4444	APS ACS
APS ATM 10.4.7	Manage traffic on different types of approaches.	4	Precision, non-precision, visual	*APP* APS
APS ATM 10.4.8	Initiate missed approach.	3	ICAO Doc 4444	*APP* APS
APS ATM 10.4.9	Integrate aircraft on missed approach into the traffic situation.	4		*APP* APS
Subtopic ATM 10.5 - Control service with advanced system support				
APS ATM 10.5.1	Appreciate the impact of advanced systems on the provision of approach control service.	3	*Optional content: sequencing systems, arrival management, departure management, automated holding lists, vertical traffic displays, conflict detection and decision making tools, automated information and coordination tools*	APS

TOPIC ATM 11 - HOLDING

Subtopic ATM 11.1 - General holding procedures

APS ATM 11.1.1	Apply holding procedures.	3	ICAO Doc 4444, holding instructions, allocation of holding levels, onward clearance times	APP ACP APS ACS
APS ATM 11.1.2	Appreciate the factors affecting holding patterns.	3	Effect of speed, effect of level used, effect of navigation aid in use, turbulence, aircraft type	APP ACP APS ACS

Subtopic ATM 11.2 - Approaching aircraft

APS ATM 11.2.1	Calculate Expected Approach Times (EATs) and Expected Onward Clearance times.	3		APP APS
APS ATM 11.2.2	Organise the traffic landing sequence in a holding pattern.	4	*Optional content: company preference, aircraft performance, aircraft approach capability, ILS categories, flow control management*	APP APS

Subtopic ATM 11.3 - Holding in a surveillance environment

APS ATM 11.3.1	Organise traffic to separate other aircraft from holding aircraft.	4		APS ACS
APS ATM 11.3.2	Integrate system support, when available.	4	*Optional content: arrival management system, automated holding lists, vertical traffic displays*	APS ACS

TOPIC ATM 12 - IDENTIFICATION

Subtopic ATM 12.1 - Establishment of identification

APS ATM 12.1.1	Appreciate the precautions when establishing identification.	3		APS ACS
APS ATM 12.1.2	Identify aircraft.	3	*Optional content: PSR, SSR or ADS identification method*	APS ACS
APS ATM 12.1.3	Apply procedures in the case of misidentification.	3		APS ACS

Subtopic ATM 12.2 - Maintenance of identification				
APS ATM 12.2.1	Appreciate the necessity to maintain identification.	3		APS ACS
Subtopic ATM 12.3 - Loss of identity				
APS ATM 12.3.1	Appreciate when an aircraft identification is lost or in doubt.	3	*Optional content: out of ATS surveillance system coverage, failure of ATS surveillance system, weather clutter, other clutter, garbling, holding, etc.*	APS ACS
APS ATM 12.3.2	Apply methods to re-establish identification.	3		APS ACS
APS ATM 12.3.3	Respond to loss/doubt concerning identification.	3	*Optional content: procedural separation*	APS ACS
Subtopic ATM 12.4 - Position Information				
APS ATM 12.4.1	Appreciate the circumstances when position information should be passed to the aircraft.	3		APS ACS
APS ATM 12.4.2	State the format in which position information can be passed to aircraft.	1	ICAO Doc 4444	APS ACS
Subtopic ATM 12.5 - Transfer of identity				
APS ATM 12.5.1	Apply the methods of transfer of identification.	3		APS ACS
APS ATM 12.5.2	Appreciate the precautions when transferring identification.	3		APS ACS

SUBJECT 4: METEOROLOGY

The subject objective is:

Learners shall acquire, decode and make proper use of meteorological information relevant to the provision of ATS.

TOPIC MET 1 - METEOROLOGICAL PHENOMENA

Subtopic MET 1.1 - Meteorological phenomena

APS MET 1.1.1	Appreciate the impact of adverse weather.	3	Thunderstorms, icing, clear air turbulence (CAT), turbulence, microburst, wind shear, severe mountain waves, line squalls, volcanic ash	APP APS
APS MET 1.1.2	Integrate data about meteorological phenomena into provision of ATS.	4	Clearances, instructions and transmitted information *Optional content: relevant meteorological phenomena*	*ALL*
APS MET 1.1.3	Use techniques to avoid adverse weather when necessary/possible.	3	Re-routing, level change, etc.	APP ACP APS ACS

TOPIC MET 2 - SOURCES OF METEOROLOGICAL DATA

Subtopic MET 2.1 - Sources of meteorological information

APS MET 2.1.1	Obtain meteorological information	3	METAR, TAF, SIGMET, AIRMET *Optional content: AIREP/AIREP Special*	APP ACP APS ACS
APS MET 2.1.2	Relay meteorological information.	3	ICAO Doc 4444 *Optional content: flight information centre, adjacent ATS unit*	*ALL*

SUBJECT 5: NAVIGATION

The subject objective is:

Learners shall analyse all navigational aspects in order to organise the traffic.

TOPIC NAV 1 - MAPS AND AERONAUTICAL CHARTS

Subtopic NAV 1.1 - Maps and charts

APS NAV 1.1.1	Decode symbols and information displayed on aeronautical maps and charts.	3	Instrument approach charts, SID charts, aerodrome charts, visual approach charts *Optional content: military maps and charts*	ADI APP APS
APS NAV 1.1.2	Use relevant maps and charts.	3		APP *ACP* APS *ACS*

TOPIC NAV 2 - INSTRUMENT NAVIGATION

Subtopic NAV 2.1 - Navigational systems

APS NAV 2.1.1	Manage traffic in case of change in the operational status of navigational systems.	4	*Optional content: limitations, status of ground-based and satellite-based systems*	APP ACP APS ACS
APS NAV 2.1.2	Appreciate the effect of precision, limitations and change of the operational status of navigational systems.	3	*Optional content: limitations, status, degraded procedures*	*ALL*

Subtopic NAV 2.2 - Stabilised approach

APS NAV 2.2.1	Describe the concept of stabilised approach.	2	ICAO Doc 8168 *Optional content: SKYbrary, Regulation (EC) No 1899/2006*	ADV ADI APP APS
APS NAV 2.2.2	Appreciate the effect of late change of runway-in-use or type of approach for landing aircraft.	3		APP APS

Subtopic NAV 2.2 - Stabilised approach				
APS NAV 2.2.3	Appreciate controller actions that may contribute to unstabilised approach.	3	Inappropriate speed control, vectoring for short final, vectoring for approach with significant tailwind, glide path interception from above, lack or incorrect distance to touchdown information, delayed descent	APS
Subtopic NAV 2.3 - Instrument departures and arrivals				
APS NAV 2.3.1	Characterise SIDs.	2		ADI APP APS
APS NAV 2.3.2	Describe the types and phases of instrument approach procedures.	2		APP APS
APS NAV 2.3.3	Describe the relevant minima applicable for a precision/ non-precision and visual approach.	2		ADI APP APS
Subtopic NAV 2.4 - Navigational assistance				
APS NAV 2.4.1	Evaluate the necessary information to be provided to pilots in need of navigational assistance.	5	*Optional content: nearest most suitable aerodrome, track, heading, distance, aerodrome information, any other navigational assistance relevant at the time*	APP *ACP* APS *ACS*
APS NAV 2.4.2	Assist aircraft in navigation when required.	3	Aircraft observed to be deviating from its known intended route, on request	APS *ACS*
Subtopic NAV 2.5 - Satellite-based systems				
APS NAV 2.5.1	State the different applications of satellite-based systems relevant for approach operations.	1	*Optional content: NPA, APV-baro VNAV, APV, LPV, precision approach, ICAO Doc 8168 Vol.2*	APP APS

Subtopic NAV 2.6 - PBN applications				
APS NAV 2.6.1	State the navigation applications used in approach and terminal environments.	1	Approach-RNP APCH/ RNP AR APCH; Terminal-RNAV-1 (≈P-RNAV) *Optional content: A-RNP, EU PBN Implementing Rule, ICAO Doc 9613*	APP APS
APS NAV 2.6.2	Explain the principles and designation of navigation specifications in use.	2	*Optional content: performance, functionality, sensors, aircrew and controller requirements*	APP *ACP* APS *ACS*
APS NAV 2.6.3	State future PBN developments.	1	A-RNP, APV *Optional content: RNP 3D, RNP 4D*	*ADI* APP *ACP* APS *ACS*

SUBJECT 6: AIRCRAFT

The subject objective is:

Learners shall assess and integrate aircraft performance in the provision of ATS.

TOPIC ACFT 1 - AIRCRAFT INSTRUMENTS

Subtopic ACFT 1.1 - Aircraft instruments

APS ACFT 1.1.1	Integrate information from aircraft instruments provided by the pilot in the provision of ATS.	4		ALL
APS ACFT 1.1.2	Explain the operation of aircraft radio equipment.	2	*Optional content: radios (number of), emergency radios*	ALL
APS ACFT 1.1.3	Explain the operation of on-board surveillance equipment.	2	Transponders: equipment Mode A, Mode C, Mode S, ADS capability	ADI APS ACS

TOPIC ACFT 2 - AIRCRAFT CATEGORIES

Subtopic ACFT 2.1 - Wake turbulence

APS ACFT 2.1.1	Explain the wake turbulence effect and associated hazards to the succeeding aircraft.	2		ALL
APS ACFT 2.1.2	Appreciate the techniques used to prevent hazards associated with wake turbulence on succeeding aircraft.	3		ALL

Subtopic ACFT 2.2 - Application of ICAO approach categories

APS ACFT 2.2.1	Describe the use of ICAO approach categories.	2	ICAO Doc 8168	ADI APP APS
APS ACFT 2.2.2	Appreciate the effect of ICAO approach categories on the traffic organisation.	3		ADI APP APS

TOPIC ACFT 3 - FACTORS AFFECTING AIRCRAFT PERFORMANCE

Subtopic ACFT 3.1 - Climb factors				
APS ACFT 3.1.1	Integrate the influence of factors affecting aircraft during climb.	4	*Optional content: speed, mass, air density, cabin pressurisation, wind and temperature*	APP ACP APS ACS
APS ACFT 3.1.2	Appreciate the influence of factors affecting aircraft on take-off.	3	*Optional content: runway conditions, runway slope, aerodrome elevation, wind, temperature, aircraft configuration, airframe contamination and aircraft mass*	APP APS
Subtopic ACFT 3.2 - Cruise factors				
APS ACFT 3.2.1	Integrate the influence of factors affecting aircraft during cruise.	4	Level, cruising speed, wind, mass, cabin pressurisation	APP ACP APS ACS
Subtopic ACFT 3.3 - Descent and initial approach factors				
APS ACFT 3.3.1	Integrate the influence of factors affecting aircraft during descent.	4	*Optional content: wind, speed, rate of descent, aircraft configuration, cabin pressurisation*	APP APS
Subtopic ACFT 3.4 - Final approach and landing factors				
APS ACFT 3.4.1	Integrate the influence of factors affecting aircraft during final approach and landing.	4	*Optional content: wind, aircraft configuration, mass, meteorological conditions, runway conditions, runway slope, aerodrome elevation*	APP APS
Subtopic ACFT 3.5 - Economic factors				
APS ACFT 3.5.1	Integrate consideration of economic factors affecting aircraft.	4	*Optional content: routing, level, speed, rate of climb and rate of descent, approach profile*	APP APS
APS ACFT 3.5.2	Use continuous climb techniques where applicable.	3		APP *ACP* APS *ACS*
APS ACFT 3.5.3	Use direct routing where applicable.	3		APP *ACP* APS *ACS*

Subtopic ACFT 3.6 - Environmental factors				
APS ACFT 3.6.1	Appreciate the performance restrictions due to environmental constraints.	3	*Optional content: fuel dumping, noise abatement procedures, minimum flight levels, bird hazard, continuous descent operations*	APP APS

TOPIC ACFT 4 - AIRCRAFT DATA

Subtopic ACFT 4.1 - Performance data				
APS ACFT 4.1.1	Integrate the average performance data of a representative sample of aircraft which will be encountered in the operational/working environment into the provision of a control service.	4	Performance data under a representative variety of circumstances	APP ACP APS ACS

SUBJECT 7: HUMAN FACTORS

The subject objective is:

Learners shall recognise the necessity to constantly extend their knowledge and analyse factors which affect personal and team performance.

TOPIC HUM 1 - PSYCHOLOGICAL FACTORS

Subtopic HUM 1.1 - Cognitive				
APS HUM 1.1.1	Describe the human information processing model.	2	Attention, perception, memory, situational awareness, decision making, response	ALL
APS HUM 1.1.2	Describe the factors which influence human information processing.	2	Confidence, stress, learning, knowledge, experience, fatigue, alcohol/drugs, distraction, interpersonal relations	ALL
APS HUM 1.1.3	Monitor the effect of human information processing factors on decision making.	3	*Optional content: workload, stress, interpersonal relations, distraction, confidence*	ALL

TOPIC HUM 2 - MEDICAL AND PHYSIOLOGICAL FACTORS

Subtopic HUM 2.1 - Fatigue				
APS HUM 2.1.1	State factors that cause fatigue.	1	Shift work *Optional content: night shifts and rosters*	ALL
APS HUM 2.1.2	Describe the onset of fatigue.	2	*Optional content: lack of concentration, listlessness, irritability, frustration, ICAO Circular 241 – AN/145 Human factors in Air Traffic Control*	ALL
APS HUM 2.1.3	Recognise the onset of fatigue in self.	1	*Optional content: ICAO Circular 241 – AN/145 Human factors in Air Traffic Control*	ALL
APS HUM 2.1.4	Recognise the onset of fatigue in others.	1		ALL
APS HUM 2.1.5	Describe appropriate action when recognising fatigue.	2		ALL

Subtopic HUM 2.2 - Fitness				
APS HUM 2.2.1	Recognise signs of lack of personal fitness.	1		ALL
APS HUM 2.2.2	Describe actions when aware of a lack of personal fitness.	2		ALL

TOPIC HUM 3 - SOCIAL AND ORGANISATIONAL FACTORS

Subtopic HUM 3.1 - Team resource management (TRM)				
APS HUM 3.1.1	State the relevance of TRM.	1	*Optional content: TRM course, EUROCONTROL Guidelines for the development of TRM training*	ALL
APS HUM 3.1.2	State the content of the TRM concept.	1	*Optional content: team work, human error, team roles, stress, decision making, communication, situational awareness*	ALL
Subtopic HUM 3.2 - Teamwork and team roles				
APS HUM 3.2.1	Identify reasons for conflict.	3		ALL
APS HUM 3.2.2	Describe actions to prevent human conflicts.	2	*Optional content: TRM team roles*	ALL
APS HUM 3.2.3	Describe strategies to cope with human conflicts.	2	*Optional content: in your team, in the simulator*	ALL
Subtopic HUM 3.3 - Responsible behaviour				
APS HUM 3.3.1	Consider the factors which influence responsible behaviour.	2	*Optional content: situation, team, personal situation and judgement, instance of justification, moral motivation, personality*	ALL
APS HUM 3.3.2	Apply responsible judgement.	3	Case study and discussion about a dilemma situation	ALL

TOPIC HUM 4 - STRESS

Subtopic HUM 4.1 - Stress				
APS HUM 4.1.1	Recognise the effects of stress on performance.	1	Stress and its symptoms in self and in others	ALL
Subtopic HUM 4.2 - Stress management				
APS HUM 4.2.1	Act to reduce stress.	3	The effect of personality in coping with stress, the benefits of active stress management	ALL
APS HUM 4.2.2	Respond to stressful situation by offering, asking or accepting assistance.	3	*Optional content: the benefits of offering, accepting and asking for help in stressful situations*	ALL
APS HUM 4.2.3	Recognise the effect of shocking and stressful events.	1	Self and others, abnormal situations, CISM	ALL
APS HUM 4.2.4	Consider the benefits of Critical Incident Stress Management (CISM).	2		ALL
APS HUM 4.2.5	Explain procedures used following an incident/accident.	2	*Optional content: CISM, counselling, human element*	ALL

TOPIC HUM 5 - HUMAN ERROR

Subtopic HUM 5.1 - Human error				
APS HUM 5.1.1	Explain the relationship between error and safety.	2	Number and combination of errors, proactive versus reactive approach to discovery of error *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
APS HUM 5.1.2	Differentiate between the types of error.	2	Slips, lapses, mistakes *Optional content: Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL

Subtopic HUM 5.1 - Human error				
APS HUM 5.1.3	Describe error-prone conditions.	2	*Optional content: increase in traffic, changes in procedures, complexities of systems or traffic, weather, unusual occurrences*	ALL
APS HUM 5.1.4	Collect examples of different error types, their causes and consequences in ATC.	3	*Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
APS HUM 5.1.5	Explain how to detect errors to compensate for them.	2	STCA, MSAW, individual and collective strategy *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
APS HUM 5.1.6	Execute corrective actions.	3	Error compensation *Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL
APS HUM 5.1.7	Explain the importance of error management.	2	*Optional content: prevention of incidents, safety improvement, revision of procedures and/or working practises*	ALL
APS HUM 5.1.8	Describe the impact on an ATCO following an occurrence/incident.	2	*Optional content: reporting, SMS, investigation, CISM*	ALL
Subtopic HUM 5.2 - Violation of rules				
APS HUM 5.2.1	Explain the causes and dangers of violation of rules becoming accepted as a practice.	2	*Optional content: ICAO Circular 314 – AN/178 Threat and Error Management (TEM) in Air Traffic Control*	ALL

TOPIC HUM 6 - COLLABORATIVE WORK

Subtopic HUM 6.1 - Communication				
APS HUM 6.1.1	Use communication effectively in ATC.	3		ALL
APS HUM 6.1.2	Analyse examples of pilot and controller communication for effectiveness.	4		ALL

Subtopic HUM 6.2 - Collaborative work within the same area of responsibility				
APS HUM 6.2.1	List communication means between controllers in charge of the same area of responsibility (sector or tower).	1	*Optional content: electronic, written, verbal and non-verbal communication*	ALL
APS HUM 6.2.2	Explain consequences of the use of communication means on effectiveness.	2	*Optional content: strips legibility and encoding, labels designation, feedback*	ALL
APS HUM 6.2.3	List possible actions to provide a safe position handover.	1	*Optional content: rigour, preparation, overlap time*	ALL
APS HUM 6.2.4	Explain consequences of a missed position handover process.	2		ALL
Subtopic HUM 6.3 - Collaborative work between different areas of responsibility				
APS HUM 6.3.1	List factors and means for an effective coordination between sectors and/or tower positions.	1	*Optional content: other sectors constraints, electronic coordination tools*	ALL
Subtopic HUM 6.4 - Controller/pilot cooperation				
APS HUM 6.4.1	Describe parameters affecting controller/pilot cooperation.	2	*Optional content: workload, mutual knowledge, controller vs pilot mental picture*	ALL

SUBJECT 8: EQUIPMENT AND SYSTEMS

The subject objective is:

Learners shall integrate knowledge and understanding of the basic working principles of equipment and systems and comply with the equipment and system degradation procedures in the provision of ATS.

TOPIC EQPS 1 - VOICE COMMUNICATIONS

Subtopic EQPS 1.1 - Radio communications

APS EQPS 1.1.1	Operate two-way communication equipment.	3	Transmit/receive switches, procedures *Optional content: frequency selection, standby equipment*	ALL
APS EQPS 1.1.2	Identify indications of operational status of radio equipment.	3	*Optional content: indicator lights, serviceability displays, selector/frequency displays*	ALL
APS EQPS 1.1.3	Consider radio range.	2	*Optional content: transfer to another frequency, apparent radio failure, failure to establish radio contact, frequency protection range*	APP ACP APS ACS

Subtopic EQPS 1.2 - Other voice communications

APS EQPS 1.2.1	Operate landline communications.	3	*Optional content: telephone, interphone and intercom equipment*	ALL

TOPIC EQPS 2 - AUTOMATION IN ATS

Subtopic EQPS 2.1 - Aeronautical fixed telecommunication network (AFTN)

APS EQPS 2.1.1	Decode AFTN messages.	3	*Optional content: movement and control messages, NOTAM, SNOWTAM, BIRDTAM, etc.*	ALL

Subtopic EQPS 2.2 - Automatic data interchange

APS EQPS 2.2.1	Use automatic data transfer equipment where available.	3	*Optional content: sequencing systems, automated information and coordination, OLDI*	ADV ADI APS ACS

TOPIC EQPS 3 - CONTROLLER WORKING POSITION

Subtopic EQPS 3.1 - Operation and monitoring of equipment				
APS EQPS 3.1.1	Monitor the technical integrity of the controller working position.	3	Notification procedures, responsibilities	ALL
APS EQPS 3.1.2	Operate the equipment of the controller working position.	3	*Optional content: situation displays, flight progress board, flight data display, radio, telephone, maps and charts, strip-printer, clock, information systems, UDF/VDF*	ALL
APS EQPS 3.1.3	Operate available equipment in abnormal and emergency situations.	3		ALL
Subtopic EQPS 3.2 - Situation displays and information systems				
APS EQPS 3.2.1	Use situation displays.	3		ALL
APS EQPS 3.2.2	Check availability of information material.	3		ALL
APS EQPS 3.2.3	Obtain information from equipment.	3		APP ACP APS ACS
Subtopic EQPS 3.3 - Flight data systems				
APS EQPS 3.3.1	Use the flight data information at controller working position.	3		ALL
Subtopic EQPS 3.4 - Use of ATS surveillance system				
APS EQPS 3.4.1	Use the ATS surveillance system functions.	3		APS ACS
APS EQPS 3.4.2	Analyse the information provided by the ATS surveillance system.	4		APS ACS
APS EQPS 3.4.3	Assign codes.	4		APS ACS
APS EQPS 3.4.4	Appreciate the use of advanced surveillance technology.	3	*Optional content: Mode S, ADS-B, MLAT*	APS ACS

Subtopic EQPS 3.5 - Advanced systems				
APS EQPS 3.5.1	Appreciate the use of controller pilot datalink communications when available.	3		APS ACS
APS EQPS 3.5.2	Appreciate the use of information provided by advanced systems.	3	*Optional content: trajectory-based information, MTCD, MONA, etc.*	APS ACS
TOPIC EQPS 4 - FUTURE EQUIPMENT				
Subtopic EQPS 4.1 - New developments				
APS EQPS 4.1.1	Recognise future developments.	1	New advanced systems	ALL
TOPIC EQPS 5 - EQUIPMENT AND SYSTEMS LIMITATIONS AND DEGRADATION				
Subtopic EQPS 5.1 - Reaction to limitations				
APS EQPS 5.1.1	Take account of the limitations of equipment and systems.	2		ALL
APS EQPS 5.1.2	Respond to technical deficiencies of the operational position.	3	Notification procedures, responsibilities	ALL
Subtopic EQPS 5.2 - Communication equipment degradation				
APS EQPS 5.2.1	Identify that communication equipment has degraded.	3	*Optional content: ground-air and landline communications*	APP ACP APS ACS
APS EQPS 5.2.2	Apply contingency procedures in the event of communication equipment degradation.	3	Procedures for total or partial degradation of ground-air and landline communications, alternative methods of transferring data	APP ACP APS ACS
Subtopic EQPS 5.3 - Navigational equipment degradation				
APS EQPS 5.3.1	Identify when a navigational equipment failure will affect operational ability.	3	*Optional content: VOR, navigational aids*	ALL
APS EQPS 5.3.2	Apply contingency procedures in the event of a navigational equipment degradation.	3	*Optional content: vertical separation, information to aircraft, navigational assistance, seeking assistance from adjacent units*	ADI APP ACP APS ACS

Subtopic EQPS 5.4 - Surveillance equipment degradation				
APS EQPS 5.4.1	Identify that surveillance equipment has degraded.	3	Partial power failure, loss of certain facilities, total failure	APS ACS
APS EQPS 5.4.2	Apply contingency procedures in the event of surveillance equipment degradation.	3	*Optional content: inform adjacent sectors, inform aircraft, apply vertical separation (emergency), increased horizontal separation, reduce the number of aircraft entering area of responsibility, transfer aircraft to another unit*	APS ACS
Subtopic EQPS 5.5 - ATC processing system degradation				
APS EQPS 5.5.1	Identify a processing system degradation.	3	*Optional content: FDPS, SDPS, software processing of situation display*	APS ACS
APS EQPS 5.5.2	Apply contingency procedures in the event of a processing system degradation.	3		APS ACS

SUBJECT 9: PROFESSIONAL ENVIRONMENT

The subject objective is:

Learners shall identify the need for close cooperation with other parties concerning ATM operations and appreciate aspects of environmental protection.

TOPIC PEN 1 - FAMILIARISATION

Subtopic PEN 1.1 - Study visit to approach control unit

APS PEN 1.1.1	Appreciate the functions and provision of an operational approach control service.	3	Study visit to an approach control unit	APP APS

TOPIC PEN 2 - AIRSPACE USERS

Subtopic PEN 2.1 - Contributors to civil ATS operations

APS PEN 2.1.1	Characterise civil ATS activities in approach control unit.	2	Study visit to an approach control unit *Optional content: familiarisation visits to TWR, ACC, AIS, RCC*	APP APS
APS PEN 2.1.2	Characterise other parties interfacing with ATS operations.	2	*Optional content: familiarisation visits to engineering services, fire and emergency services, airline operations offices*	ALL

Subtopic PEN 2.2 - Contributors to military ATS operations

APS PEN 2.2.1	Characterise military ATS activities.	2	*Optional content: familiarisation visits to TWR, APP, ACC, AIS, RCC, Air Defence Units*	ALL

TOPIC PEN 3 - CUSTOMER RELATIONS

Subtopic PEN 3.1 - Provision of services and user requirements

APS PEN 3.1.1	Identify the role of ATC as a service provider.	3		ALL
APS PEN 3.1.2	Appreciate ATS users requirements.	3		ALL

TOPIC PEN 4 - ENVIRONMENTAL PROTECTION

Subtopic PEN 4.1 - Environmental protection

APS PEN 4.1.1	Describe the environmental constraints on aerodrome operations.	2	*Optional content: ICAO Circular 303 - Operational opportunities to minimise fuel use and reduce emissions*	ADV ADI APP APS
APS PEN 4.1.2	Explain the use of Collaborative Environmental Management (CEM) process at airports.	2		ADV ADI APP APS
APS PEN 4.1.3	Appreciate the mitigation techniques used to minimise aviation's impact on the environment.	3	*Optional content: continuous descent operations (CDO), noise abatement procedures, noise preferential routes, flight efficiency*	APP APS

SUBJECT 10: ABNORMAL AND EMERGENCY SITUATIONS

The subject objective is:

Learners shall develop professional attitudes to manage traffic in abnormal and emergency situations.

TOPIC ABES 1 - ABNORMAL AND EMERGENCY SITUATIONS (ABES)

Subtopic ABES 1.1 - Overview of ABES				
APS ABES 1.1.1	List common abnormal and emergency situations.	1	*Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground based safety nets alerts, airframe failure, unreliable instruments, runway incursion*	ALL
APS ABES 1.1.2	Identify potential or actual abnormal and emergency situations.	3		ALL
APS ABES 1.1.3	Take into account the procedures for given abnormal and emergency situations.	2	*Optional content: ICAO Doc 4444*	APP ACP APS ACS
APS ABES 1.1.4	Take into account that procedures do not exist for all abnormal and emergency situations.	2	*Optional content: real life examples*	ALL
APS ABES 1.1.5	Consider how the evolution of a situation may have an impact on safety.	2	*Optional content: separation, information, coordination*	ALL

TOPIC ABES 2 - SKILLS IMPROVEMENT

Subtopic ABES 2.1 - Communication effectiveness				
APS ABES 2.1.1	Ensure effective communication in all circumstances including the case where standard phraseology is not applicable.	4	Phraseology, vocabulary, readback, silence instruction	ALL
APS ABES 2.1.2	Apply change of radiotelephony call sign.	3	ICAO Doc 4444	ALL

Subtopic ABES 2.2 - Avoidance of mental overload				
APS ABES 2.2.1	Describe actions to keep control of the situation.	2	*Optional content: sector splitting, holding, flow management, task delegation*	ALL
APS ABES 2.2.2	Organise priority of actions.	4		ALL
APS ABES 2.2.3	Ensure effective circulation of information.	4	*Optional content: between executive and planner/coordinator, with the supervisor, between sectors, between ACC, APP and TWR, with ground staff, etc.*	ALL
APS ABES 2.2.4	Consider asking for help.	2		ALL
Subtopic ABES 2.3 - Air / ground cooperation				
APS ABES 2.3.1	Collect appropriate information relevant to the situation.	3		ALL
APS ABES 2.3.2	Assist the pilot.	3	Pilot workload *Optional content: instructions, information, support, human factors, etc.*	ALL

TOPIC ABES 3 - PROCEDURES FOR ABNORMAL AND EMERGENCY SITUATIONS

Subtopic ABES 3.1 - Application of procedures for ABES				
APS ABES 3.1.1	Apply the procedures for given abnormal and emergency situations.	3	*Optional content: EATM Guidelines for Controller Training in the Handling of Unusual/Emergency Situations, ambulance flights, ground based safety nets alerts, airframe failure*	ALL
Subtopic ABES 3.2 - Radio failure				
APS ABES 3.2.1	Describe the procedures followed by a pilot when he/she experiences complete or partial radio failure.	2	ICAO Doc 7030 *Optional content: military procedures*	ALL
APS ABES 3.2.2	Apply the procedures to be followed when a pilot experiences complete or partial radio failure.	3	*Optional content: prolonged loss of communication*	ALL

Subtopic ABES 3.3 - Unlawful interference and aircraft bomb threat				
APS ABES 3.3.1	Apply ATC procedures associated with unlawful interference and aircraft bomb threat.	3	ICAO Doc 4444	ALL
Subtopic ABES 3.4 - Strayed or unidentified aircraft				
APS ABES 3.4.1	Apply the procedures in the case of strayed aircraft.	3	ICAO Doc 4444 *Optional content: inside controlled airspace, outside controlled airspace*	ALL
APS ABES 3.4.2	Apply the procedures in the case of unidentified aircraft.	3	ICAO Doc 4444	ALL
Subtopic ABES 3.5 - Diversions				
APS ABES 3.5.1	Provide navigational assistance to diverting emergency aircraft.	4	Track/heading, distance, other navigational assistance *Optional content: nearest most suitable aerodrome*	APP ACP APS ACS
Subtopic ABES 3.6 - Transponder failure				
APS ABES 3.6.1	Apply procedures in the event of an SSR transponder failure.	3	ICAO Doc 4444, ICAO Doc 7030 *Optional content: total/partial failure, impact on ADS-B/Mode S capability*	APS ACS

SUBJECT 11: AERODROMES

The subject objective is:

Learners shall recognise and understand the design and layout of aerodromes.

TOPIC AGA 1 - AERODROME DATA, LAYOUT AND COORDINATION

Subtopic AGA 1.1 - Definitions

APS AGA 1.1.1	Define aerodrome data.	1	Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM ICAO Annex 14 *Optional content: aerodrome elevation, reference point, apron, movement area, manoeuvring area, hot spot*	ADV ADI APP APS

Subtopic AGA 1.2 - Coordination

APS AGA 1.2.1	Identify the information that has to be passed between Air Traffic Services (ATS) and the airport authority.	3	Airport conditions, fire/rescue category, condition of ground equipment and NAVAIDs, AIRAC, Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM Airport conditions, Fire/rescue category, Condition of ground equipment and NAVAIDs, AIRAC, ICAO Annex 14	APP APS ADV ADI

TOPIC AGA 2 - MOVEMENT AREA

Subtopic AGA 2.1 - Movement area

APS AGA 2.1.1	Describe movement area.	2	Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM ICAO Annex 14	ADV ADI APP APS

Subtopic AGA 2.1 - Movement area				
APS AGA 2.1.2	Describe the marking of obstacles and unusable or unserviceable areas.	2	Flags, signs on pavement, lights	ADV ADI APP APS
APS AGA 2.1.3	Identify the information on conditions of the movement area that have to be passed to aircraft.	3	Essential information on aerodrome conditions	ADV ADI APP APS
Subtopic AGA 2.2 - Manoeuvring area				
APS AGA 2.2.1	Describe manoeuvring area.	2	Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM ICAO Annex 14	ADV ADI APP APS
APS AGA 2.2.2	Describe taxiway.	2		ADV ADI APP APS
APS AGA 2.2.3	Describe the daylight marking on taxiways.	2		ADV ADI APP APS
APS AGA 2.2.4	Describe taxiway lighting.	2		ADV ADI APP APS
Subtopic AGA 2.3 - Runways				
APS AGA 2.3.1	Describe runway.	2	Runway, runway surface, runway strip, shoulder, runway end safety areas, clearways, stopways	ADV ADI APP APS
APS AGA 2.3.2	Describe instrument runway.	2	Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM ICAO Annex 14	ADI APP APS
APS AGA 2.3.3	Describe non-instrument runway.	2	Regulation (EU) No 139/2014 - EASA ED Decision 2014/013/R for CS-ADR-DSN - Initial issue and EASA ED Decision 2014/012/R for ADR AMC/GM ICAO Annex 14	*ADV* ADI APP APS

Subtopic AGA 2.3 - Runways				
APS AGA 2.3.4	Explain declared distances.	2	TORA, TODA, ASDA, LDA	*ADV* ADI APP APS
APS AGA 2.3.5	Explain the differences between ACN and PCN.	2	Strength of pavements	*ADV* ADI APP APS
APS AGA 2.3.6	Describe the daylight markings on runways.	2	*Optional content: runway designator, centre line, threshold, aiming point, fixed distance, touchdown zone, side strip, colour*	*ADV* ADI APP APS
APS AGA 2.3.7	Describe runway lights.	2	*Optional content: colour, centre line, intensity, edge, touchdown zone, threshold, barettes*	*ADV* ADI APP APS
APS AGA 2.3.8	Explain the functions of visual landing aids.	2	*Optional content: AVASI, VASI, PAPI*	*ADV* ADI APP APS
APS AGA 2.3.9	Describe the approach lighting systems.	2	Centre line, cross bars, stroboscopic lights, colours, intensity and brightness	*ADV* ADI APP APS
APS AGA 2.3.10	Characterise the effect of water/ice on runways.	2		*ADV* ADI APP APS
APS AGA 2.3.11	Explain braking action.	2	Braking action coefficient	*ADV* ADI APP APS
APS AGA 2.3.12	Explain the effect of runway visual range on aerodrome operation.	2		*ADV* ADI APP APS

TOPIC AGA 3 - OBSTACLES

Subtopic AGA 3.1 - Obstacle-free airspace around aerodromes

APS AGA 3.1.1	Explain the necessity for establishing and maintaining an obstacle-free airspace around aerodromes.	2		ADV ADI APP APS

TOPIC AGA 4 - MISCELLANEOUS EQUIPMENT

Subtopic AGA 4.1 - Location

APS AGA 4.1.1	Explain the location of different aerodrome ground equipment.	2	*Optional content: LLZ, GP, VDF, radio communication or ATS surveillance systems sensors, stopbars, AVASI, VASI, PAPI*	ADV ADI APP APS

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