

## Course Descriptions

<b>01225111</b>	<p><b>Basic Mathematics in Aviation</b></p> <p>Algebra. Functions and graphs. Limit and continuity. Derivatives. Integration. Applications in aviation technology management.</p>	<b>3(3-0-6)</b>
<b>01225121</b>	<p><b>Aviation Organization Management</b></p> <p>Principles of aviation organization management. Organizational culture and the environment. Ethics and social responsibility in aviation organization. Planning and continuous improvement. Strategic planning. Organizational structure and work system. Organizational behavior. Teamwork and leadership. Human resource management. Managerial decision making.</p>	<b>3(3-0-6)</b>
<b>01225141</b>	<p><b>Basic Science in Aviation</b></p> <p>Matter. Forces and motion. Momentum. Energy, work and power. Simple machines. Thermal properties and temperature. Pressure and gas laws. Fluid mechanics. Wave, light, and sound. Basic electricity. Basic theory of flight.</p>	<b>3(3-0-6)</b>
<b>01225142</b>	<p><b>Basic Flight Mechanics and Aerodynamics</b></p> <p>Prerequisite: 01225141</p> <p>Fundamental of aerodynamics. Principle of flight. Aircraft structure and systems. Aircraft engines and instrument. Flight stability and control. Aircraft weight and balance. Operation requirements related aircraft loading. High speed aerodynamics.</p>	<b>3(3-0-6)</b>
<b>01225151</b>	<p><b>Aviation Technical Terminology</b></p> <p>Aviation terminology related to aviation organization, principle of flight, aircraft flight control, aircraft structure and system, aircraft engines and instrument, and aircraft maintenance.</p>	<b>3(3-0-6)</b>
<b>01225152</b>	<p><b>Aviation Industry Terminology</b></p> <p>Aviation terminology related to airport, aviation safety and security, air navigation, air traffic services, air cargo, airline.</p>	<b>3(3-0-6)</b>
<b>01225161</b>	<p><b>Principle of Air Transport</b></p> <p>Aviation industry structure and value chain. Principles of air transport system. Civil aviation regulatory system. Air traffic system. Airport system. Air transport and environment. Air Transport and national competitiveness. National policies and strategies in air transport.</p>	<b>3(3-0-6)</b>
<b>01225162</b>	<p><b>Aviation Law and Regulations</b></p> <p>Certification of operations, international aviation law and regulations, authority, responsibility, and functions of the air transportation organizations, operation manuals.</p>	<b>3(3-0-6)</b>

<b>01225212</b>	<b>Statistical Analysis in Aviation</b> Statistical description of data. Sampling distributions and estimation. Basic probability concept. Discrete and continuous probability distributions. Hypothesis testing.	<b>3(2-3-6)</b>
<b>01225213</b>	<b>Quantitative Analysis in Aviation</b> Prerequisite: 01225212 Linear programming. Simple linear regression. Multiple linear regression. Model formulation and analysis. Time series analysis. Decision making concepts. Application of quantitative analysis for aviation industry.	<b>3(3-0-6)</b>
<b>01225231</b>	<b>Aviation Economics</b> Principles of macro and micro economics in air transportation, economics and market systems, aviation supply and demand, aviation market structure, significant elements in air transportation and its relationship in economic systems.	<b>3(3-0-6)</b>
<b>01225232</b>	<b>Aviation Marketing</b> Principles of marketing and implication on aviation organization, aviation marketing concepts, consumer and passenger behavior, marketing strategy analysis and formulation in aviation industry.	<b>3(3-0-6)</b>
<b>01225243</b>	<b>Aircraft Flight Performance</b> Prerequisite: 01225142 Cruise, climb, turning, take-off and landing performances of fixed wing aircraft. Flight operation and safety. Aerodynamics and flight performance of helicopter.	<b>3(3-0-6)</b>
<b>01225244</b>	<b>Aviation Meteorology</b> Characteristic, pressure, air front and motion of the atmosphere. Formation of cloud. Aviation weather hazard. Visibility. Weather analysis and forecasts. Weather charts. Meteorological services for international air navigation.	<b>2(2-0-4)</b>
<b>01225245</b>	<b>Air Traffic Control Systems)</b> Responsibility of air traffic service. Air space. Flight rules. Navigation system. Separation standards. Aeronautical information services. Air traffic management. Alerting services. Future air traffic services.	<b>3(3-0-6)</b>
<b>01225246</b>	<b>Air Traffic Management</b> Context of Air traffic management. Air space management. Air traffic separation. Air traffic regulation. Air traffic flow management. Alerting service. Flight information service. Air traffic control service. Future of air traffic management.	<b>3(3-0-6)</b>

<b>01225247</b>	<b>Air Navigation and Communication</b>	<b>2(2-0-4)</b>
	Air navigation maps, International Civil Aviation Organization navigation requirement and procedures, international aeronautical telecommunication services, radio communication theory, radio navigation services, and automated navigation services.	
<b>01225251</b>	<b>Aviation Professional Development 3(3-0-6)</b>	
	Interpersonal skill development. Personal and team work development. Leadership. Aviation managerial professional development.	
<b>01225252</b>	<b>Human Factors in Aviation</b>	<b>3(3-0-6)</b>
	Human performance and limitations. Social psychology. Factors affecting performance. Physical environment. Tasks. Communication. Human error. Threat and error management. Hazards in the workplace. Crew resource management.	
<b>01225253</b>	<b>Aviation Professional Development</b>	<b>1(0-3-2)</b>
	Individual and group activities in interpersonal skill development. Personal and team work development. Leadership. Aviation managerial professional development.	
<b>01225281</b>	<b>Aircraft General Knowledge</b>	<b>3(3-0-6)</b>
	Airframe structure. Flight controls systems. Landing gears systems. Aircraft engine. Hydraulic systems. Air conditioning and pressurization systems. Oxygen systems. Ice and Rain protection systems. Fire protection systems. Fuel systems. Aircraft Instrument systems. Communication systems. Navigation systems. Auto Flight systems.	
<b>01225311</b>	<b>Information Technology for Aviation Management</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225121 Information technologies and impact on aviation industry. Strategic information systems for competitive advantage. E-business and e-commerce. Supply chain management and enterprise resource planning. Information technology planning and business process redesign. Knowledge and database management. Decision support and intelligent systems. Building information systems. Aviation information systems.	
<b>01225321</b>	<b>Aviation Operations Management</b>	<b>3(3-0-6)</b>
	Concepts of operations management in aviation. Product and service design. Process analysis. Forecasting. Production planning. Capacity planning. Aviation enterprise resource planning. Quality management for aviation industry.	
<b>01225322</b>	<b>Aviation Management and Strategy</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225121 Strategy in aviation industry, business environment analysis, strategy formulation, strategy implementation, and strategy evaluation in aviation industry.	

<b>01225323</b>	<b>Aviation Project Management</b>	<b>3(3-0-6)</b>
	Concepts of project management in aviation, project life cycle, project management processes, project management tools, case study in aviation project management.	
<b>01225331</b>	<b>Aviation Business Accounting and Finance</b>	<b>3(3-0-6)</b>
	Financial planning and analysis. Cash management. Accounting concepts and principles. Management accounting for aviation business. Accounting and cash control. Principles of managerial accounting. Behaviour of costs and cost-volume-profit relationship. Full costing. Variable costing. Standard costing and production costs variance analysis. Use of accounting information and financial report for managerial decision making.	
<b>01225341</b>	<b>Flight Operations and Planning</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225142	
	Flight planning charts and tables, calculation of flight time and fuel consumption, route selection, documentation in flight operations, flight monitoring, flight equipment failures, emergency situations, and flight monitoring resources.	
<b>01225351</b>	<b>Aviation Human Resource Management</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225221	
	Importance of human resource management in aviation organizations, careers in aviation industry, law and regulations in aviation works, human resource planning, job analysis, recruitment, reward system, performance evaluation, human resource development in aviation organizations.	
<b>01225353</b>	<b>Aviation Safety</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225162	
	Fundamental of aviation safety. Accident causation and prevention theories. Evolution of aviation safety thinking. Economics impact of aviation safety. Introduction to risk and safety management.	
<b>01225354</b>	<b>Aviation Quality System</b>	<b>3(3-0-6)</b>
	Principle of quality management for aviation industry. Aviation quality standards. Development of aviation quality system. Quality assurance for aviation industry. Aviation accreditation and certification.	
<b>01225361</b>	<b>Aviation Logistics and Supply Chain Management</b>	<b>3(3-0-6)</b>
	Supply chain and logistics management concepts in aviation industry. Materials handling system. Aviation inventory management. Capacities planning. Locating distribution centers of air transportation.	

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| <b>01225362</b> | <b>Air Cargo Operations and Management</b>                                                                                                                                                                                                                                                                | <b>3(3-0-6)</b> |
|                 | Air cargo handling operations and management. Structure of air cargo industry. Air freight rating. Air cargo standards and documentation.                                                                                                                                                                 |                 |
| <b>01225363</b> | <b>Aviation Ground Service Operations</b>                                                                                                                                                                                                                                                                 | <b>3(3-0-6)</b> |
|                 | Aviation ground handling operational concepts, airside and landside operations, passenger and cargo handling, operational control, ground service safety and security.                                                                                                                                    |                 |
| <b>01225371</b> | <b>Airline Operations and Management</b>                                                                                                                                                                                                                                                                  | <b>3(3-0-6)</b> |
|                 | Airline management. Airline business planning. Airline profitability. Airline marketing. Airline fleet and route network planning. Airline scheduling. Airline flight operations. Airline ground handling. Principles of Air cargo business. Air cargo operations. Airline supply chain management.       |                 |
| <b>01225372</b> | <b>Airport Operations and Management</b>                                                                                                                                                                                                                                                                  | <b>3(3-0-6)</b> |
|                 | Airport management. Airport cost and revenue structure. Airport capacity. Airport safety and security. Airport environment management. Airport operation and performance.                                                                                                                                 |                 |
| <b>01225373</b> | <b>Airport Safety and Security</b>                                                                                                                                                                                                                                                                        | <b>3(3-0-6)</b> |
|                 | Procedures of airport safety and security program development, aircraft and airport facilities, airport safety and security committee, airport inspection programs, safety and security training, and protection of civil aviation against acts of unlawful interference.                                 |                 |
| <b>01225381</b> | <b>Aviation Maintenance Management</b>                                                                                                                                                                                                                                                                    | <b>3(3-0-6)</b> |
|                 | Basic of aircraft maintenance management. Aircraft Maintenance program. Aircraft maintenance organization. Technical Documents in aircraft maintenance. Aircraft planning and scheduling. Material support. Quality Management. Reliability. Safety.                                                      |                 |
| <b>01225382</b> | <b>Quality and Reliability Control in Aircraft Maintenance and Production</b>                                                                                                                                                                                                                             | <b>3(3-0-6)</b> |
|                 | Distributions and probability theory. Principle of reliability and quality in aviation. Quality control process in aircraft production and maintenance. Reliability monitoring and controlling in aircraft production and maintenance.                                                                    |                 |
| <b>01225383</b> | <b>Basic Aircraft Maintenance</b>                                                                                                                                                                                                                                                                         | <b>3(3-0-6)</b> |
|                 | Basic electricity. Aircraft drawing. Fluid lines and fitting. Materials and process. Aircraft weight and balance. Aircraft inspection and nondestructive inspection. Tools for aircraft maintenance. Maintenance documents. Maintenance form and records. Aircraft Mechanics license. Maintenance Safety. |                 |

<b>01225391</b>	<b>Basic Research Methods in Aviation Technology Management</b>	<b>1(0-2-1)</b>
	Principles and research methods in aviation technology management, identification of research problems, formulation of research objectives and hypotheses, collection of data, construction of questionnaire, data analysis and interpretation, application of statistics for research, report writing and presentation.	
<b>01215399</b>	<b>Internship</b>	<b>1</b>
	Internship for aviation technology management in private enterprises, government agencies, government enterprises or academic places at least 240 hours and at least 30 workdays.	
<b>01225461</b>	<b>Aviation Inventory and Warehouse Management</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225361	
	Introduction to inventory, warehousing and distribution in the aviation industry, aviation inventory planning and design, aviation logistics and network planning, aviation warehouse design and management, air freight transport and international distribution.	
<b>01225463</b>	<b>Business Intelligence for Aviation Management</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225311	
	Business Intelligence concepts. Data analysis and knowledge discovery. Application in aviation business and industry.	
<b>01225471</b>	<b>Airline Fleet Planning</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225231	
	Principles of fleet planning: fleet selection process, fleet planning method and modeling on single sector and network. Investment appraisal.	
<b>01225472</b>	<b>Airline Revenue Management</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225232 and 01225331	
	Principles of airline revenue management. Seat inventory control. Airline revenue maximization. Pricing and revenue management. Application of forecasting concepts to airline revenue management. Airline revenue management information system.	
<b>01225473</b>	<b>Airport Planning and Development</b>	<b>3(3-0-6)</b>
	Prerequisite: 01225372	
	Airport planning system, planning types and levels, planning processes, types and processes of planning study, financial planning, airport master plan, local airport planning.	

<b>01225474</b>	<b>Airport Systems and Design</b>	<b>3(3-0-6)</b>
	Introduction to airport design. Airport Systems. Airport systems planning and airport design. Design standards of the airside, passenger terminals, airport access, and airport facilities. Capacity analysis of existing and future airport design.	
<b>01225481</b>	<b>Aircraft Structures 3(3-0-6)</b>	
	Aircraft structures. Metallic and composite materials. Helicopter structures. Flight control systems. Aircraft assembly and rigging. Aircraft structure inspection. Aircraft structure repair. Aircraft cleaning and corrosion control.	
<b>01225482</b>	<b>Aircraft Propulsive Systems 3(3-0-6)</b>	
	Reciprocating engines. Gas turbine engines. Engine fuel systems. Induction and exhaust systems, Engine ignition systems. Engine lubrication systems. Engine starting systems. Propeller systems. Auxiliary power unit. Aircraft engine inspection and maintenance.	
<b>01225483</b>	<b>Aircraft Instrument and Avionics Systems 3(3-0-6)</b>	
	Basic of flight instrument. Engine power and control instrument. Measure of attitude. Measurement of speed. Gyroscopic instrument. Compass systems. Communication and air navigation. Modern computer navigation system. Automatic flight control systems. Flight information systems.	
<b>01225484</b>	<b>Aircraft Systems)</b>	<b>3(3-0-6)</b>
	Aircraft fuel systems. Hydraulic and Pneumatic systems. Landing gear systems. Aircraft electrical systems. Cabin environmental systems. Ice and Rain protection systems. Fire protection systems. Aircraft emergency systems.	
<b>01225485</b>	<b>Basic Practices in Aircraft Technology and Maintenance</b>	<b>1(0-2-1)</b>
	Basic practices in aircraft maintenance technology for Aviation technician or engineer.	
<b>01225486</b>	<b>Practices in Aircraft Systems and Avionics</b>	<b>1(0-3-2)</b>
	Prerequisite: 01225485 Practices in technology and maintenance of aircraft systems and avionics.	
<b>01225490</b>	<b>Co-operative Education</b>	<b>6</b>
	On the job training as a temporary employee in order to get experiences from the assignment for aviation technology management.	
<b>01225496</b>	<b>Selected Topics in Aviation Technology Management</b>	<b>1-3</b>
	Selected topics in aviation Technology Management at the bachelor's degree level. Topics are subjected to change each semester.	

<b>01225497</b>	<b>Seminar</b>	<b>1</b>
	Presentation and discussion on current interesting topics in aviation technology management at the bachelor's degree level.	
<b>01225498</b>	<b>Special Problems</b>	<b>1-3</b>
	Selected topics in aviation technology management at the bachelor's degree level and compiled into a written report.	
<b>01225499</b>	<b>Aviation Technology Management Project</b>	<b>3(0-9-5)</b>
	Project of practical interest in various fields of aviation technology management.	