INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)
PALLAVARAM - CHENNAI
ACCREDITED BY NAAC WITH 'A' GRADE
Marching Beyond 25 Years Successfully

Diploma in Airport Management

Curriculum and Syllabus

Effective from the Academic year
2022 – 2023
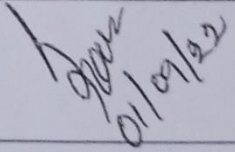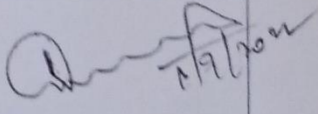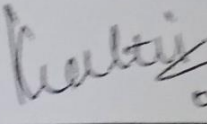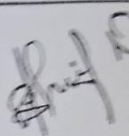
Department of Aviation

Department of Aviation

VISION
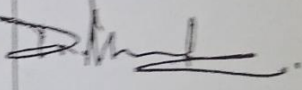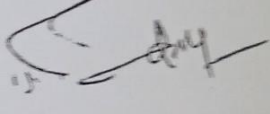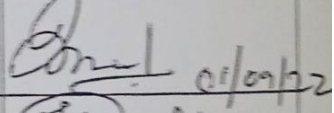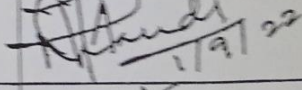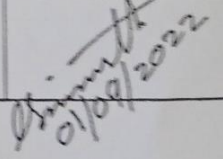
      To be forefront in the aviation field by contributing to the intellectual, social and economic development of the aviation industry and the citizens of our nation. It is served through precept, research fueled by the advanced curriculum to endeavor the highest standardsto excel in their Aviation profession.

MISSION

- To empower and encourage the students with the knowledge and practical skillsrequired in the field of Aviation and Aeronautical Science.
- To impart quality education through the technologically advanced curriculum whichwill be delivered by the industry experts
- To train the students to have in-depth knowledge of the subjects in the field of aviationand groom them in soft skills & survival skills.

LIST OF BOARD OF STUDIES (BOS) MEMBERS

S. No	Name of the Board Member	Designation	Signature
		CHAIRMAN	
1	Dr. S. Ramasubramanian	Associate Professor & HoD i/c, Department of Aviation, Vels Institute of Science, Technology and Advanced Studies	01/09/22
		Internal Member	
2	Dr. M. Chandrasekaran	Professor & Dean, Academic Courses, Vels Institute of Science, Technology and Advanced Studies.	1/9/2022

	Industry Expert Members		
1	Er. Karthikeyen	Flight Engineer Boing 747, Trans Volga Airline, Kazakhstan.	01/09/2
2	Er. Ashif Naseer	Aircraft Maintenance engineer Airbus A-320, Indigo, India	01/09/22
	Academic Expert Members		
1	Dr. Manigandan	HOD, Former BOS Chairman Department of Aerospace, Dhanalakshmi Srinivasan College, Perambalur, India.	
2	Mr. Ahmed Zubair	Chief Executive officer, MH Cockpit, India.	
3	Er. Immanuel Inbaezhilarsan C.	Flight Engineer, Senior Technical Instructor, Mh Cockpit, India.	01/09/22
4	Mr. Mathew Alexander	Assistant training manager, Technical instructor, Mh Cockpit, India.	1/9/22
5.	Capt. Srikanth Chandrasekaran	Chief Flight Instructor, Training Manager, Mh Cockpit, India.	01/09/2022

PROGRAM EDUCATIONAL OUTCOME (PEOs)

PEO 1: To produce candidates with strong knowledge in Aviation

PEO 2: To produce graduates who can meet the diversified needs of the aviation industry.

PEO 3: To produce graduates having the multidisciplinary knowledge to solve real-worldproblems with a high degree of professional ethics and standards.

PROGRAM OUTCOMES (POs)

PO 1: **Disciplinary knowledge**
Students will demonstrate in-depth knowledge and understanding of Airport Management

PO 2: **Communication Skills**
Students can express thoughts and ideas effectively in writing and orally, and also able to present complex information clearly and concisely to different groups.

PO 3: **Critical thinking**
Students can apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following a scientific approach to knowledge development.

PO 4: **Problem-solving**
Students can build the capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real-life situations.

PO 5: **Analytical reasoning**
Students can evaluate the reliability and relevance of evidence; identify

logical flaws and holes in the arguments of others; analyse and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples, and addressing opposing viewpoints.

PO 6: **Research-related skills**

Students can recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyse, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; the ability to plan, execute and report the results of an experiment or investigation.

PO 7: **Cooperation/Team work**

Students can work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 8: **Scientific reasoning**

Students can analyze, interpret and draw conclusions from quantitative/qualitative data; and critically evaluate ideas, evidence and experiences from an open-minded and reasoned perspective.

PO 9: **Reflective thinking**

Students can develop Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 10: **Information/digital literacy**

Students can use ICT in a variety of learning situations, demonstrate the ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 11: **Self-directed learning**

Students can work independently, identify appropriate resources required for a project, and manage a project through to completion.

PO 12:   Multicultural competence

Students can get knowledge of the values and beliefs of multiple cultures and a global perspective, and the capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

PO 13:   Moral and ethical awareness/reasoning

Students can embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting an objective, unbiased and truthful actions in all aspects of work.

PO 14:   Leadership readiness/qualities

Students can develop the ability to mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, smoothly and efficiently.

PO 15:   Lifelong learning

Students can acquire knowledge and skills, including "learning how to learn", that is necessary for participating in learning activities throughout life.

PROGRAM SPECIFIC OUTCOME (PSOS)

At the end of the program, the students will be

PSO 1: Able to understand the various scientific principles and they can able to apply in the field of Aviation.

PSO 2: Able to achieve a full understanding of the topics specified in Airport Management.

PSO 3: Able to apply advanced level skills in academic and research pursuits relevant to aviation and other interdisciplinary streams.

REGULATIONS 2022
DIPLOMA IN AIRPORT MANAGEMENT

1. DURATION OF THE PROGRAM

    1.1.   One year (two semesters)

    1.2.   There shall be not less than 90 working days for each semester.

    1.3.   The odd semesters shall consist of the period from July to December and the even semesters from January to June of each year.

2. ELIGIBILITY FOR ADMISSION

    2.1. The details of Eligibility for Admission – Pass in Higher Secondary or equivalent to HSC

3. MEDIUM OF INSTRUCTION

The medium of instruction shall be in English as aviation language is English and it is mandatory for all the aviation professionals to be proficient in English.

4. CREDIT REQUIREMENTS AND ELIGIBILITY FOR AWARD OF DIPLOMA

A Candidate shall be eligible for the award of Diploma only if he/she has undergone the prescribed course of study in VISTAS for not less than three academic years and passed the examinations of all the prescribed courses of Six Semesters earning a minimum of 45 credits as per the distribution given in for Part I, II, III and also fulfilled such other conditions as having been prescribed thereof.

5. COURSE

Each course/subject is to be designed under lectures/tutorials/laboratory or fieldwork/seminar / practical training / Assignments / Term paper or Report writing etc., to meet effective teaching and learning needs.

6. COURSE OF STUDY AND CREDITS

The Course Components and Credit Distribution shall consist of Part I, II & III:

The program consists of some courses. The term 'course' is applied to indicate a of the logical part subject matter of the program and is invariably equivalent to the subject matter of a 'paper' in the conventional sense. The following are the various categories of

courses suggested for the UG programs.

For each course, credit is assigned based on the following:

Contact hour per week		CREDITS
1 Lecture hour	-	1 Credit
1 Tutorial hour	-	1 Credit

7. REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER

7.1. **Eligibility:** Students shall be eligible to go to subsequent semesters only if they earn sufficient attendance as prescribed therefore by the Board of Management from time to time.

7.2. **Attendance:** All Students must earn 75% and above of attendance for appearing for the University Examination. (Theory/Practical)

7.3. **Condonation of shortage of attendance:** If a student fails to earn the minimum attendance (Percentage stipulated), the HODs shall condone the shortage of attendance on medical grounds up to a maximum limit of 10% (i.e. between 65% and above and less than 75%) after paying the prescribed fee towards the condonation of shortage of attendance. The students with attendance of less than 65 and more than 50% shall be condoned by VC on the recommendation of HODs on genuine grounds, will be permittedto appear for the regular examination on payment of the prescribed condonation fee.

7.4. **Detained students for want of attendance:** Students who have earned less than 50% of attendance shall be permitted to proceed to the next semester and to complete the Program of study. Such Students shall have to repeat the semester, which they have missed by rejoining after completion of the final semester of the course, by paying the fee for the break of study as prescribed by the University from time to time.

7.5. **Transfer of Students and Credits:** The strength of the credits system is that it permits inters Institutional transfer of students. By providing mobility, it enables individual students to develop their capabilities fully by permitting them to move from one Institution to another following their aptitude and abilities.

7.5.1. Transfer of Students is permitted from one Institution to another Institution for the

same program with the same nomenclature, provided, there is a vacancy in the respective program of Study in the Institution where the transfer is requested.

7.5.2. The marks obtained in the courses will be converted into appropriate grades as per the University norms.

7.5.3. The transfer students are not eligible for Rankings, Prizes and Medals.

7.5.4. Students who want to go to foreign Universities for up to two semesters or Project Work with the prior approval of the Departmental / University Committee are allowed to transfer their credits. Marks obtained in the courses will be converted into Grades as per the University norms and the students are eligible to get CGPA and Classification.

LEARNING OUTCOME BASED CURRICULUM FRAMEWORK(LOCF)

TABLE OF CONTENTS

Learning Outcomes-Based Curriculum Framework for Diploma in Airport Management

1. Introduction

The Learning Outcomes-based Curriculum Framework (LOCF) for the Diploma Program is intended to make available an extensive structure tocreate an academic base that responds to the requirements of the students to understand the basics Aviation. The learning outcomes-based curriculum framework (LOCF) is intended to prepare a curriculum that enables the graduates to respond to the current needs of the industry and equip them with skills relevant to national and global standards. The framework will assist in maintaining international standards to ensure global competitiveness. The framework intends to allow for greater flexibility and innovation in curriculum design and syllabus development, teaching-learning process, assessment of student learning levels.

Many courses incorporate training and practical experience, in the form of projects, presentations, internships, industrial visits, and interaction with experts from the industry.

2. Learning Outcomes-based approach to Curriculum

2.1 Nature and extent of Diploma

The Diploma program builds on the basics & Fundamentals of Aviation operation in the Airport.

2.2 The aim and objectives of the Diploma Course

The aims and objectives of our Diploma Program are structured to:

1. To produce Aviation professionals who are knowledgeable, competent and innovative which will contribute towards the human capital in aviation industry.
2. To produce aviation professional who has effective leadership and teamwork skills as well as verbal, non-verbal and interpersonal communication skills to support their role in the industry.
3. To produce aviation professionals who are committed to the importance of lifelong learning and continuous improvement.
4. To produce leaders who practice professionalism with ethics and social responsibility.
5. To practice a high level of professionalism necessary to deliver the knowledge, expertise and skill of students through the application of research to business problems and issues.

3. Graduate attributes

Some of the characteristic attributes of a Diploma holder in Airport management are

i. **Disciplinary knowledge and skills:** Capable of Understanding the major concepts and principles in aviation.

ii. **Skilled communicator:** Ability to transmit National and international information relating to all areas in the aviation field clearly and concisely in writing and oral.

iii. **Critical thinker and problem solver:** Ability to employ critical thinking and efficient problem-solving skills in all the fields in business and management to meet the competition and for proper decision making in business.

iv. **Sense of inquiry:** Capability for asking relevant/appropriate questions relating to contemporary issues and problems in the field of aviation.

v. **Team player/worker**: Capable of working effectively in diverse teams in both classroom and field visits like industry and market.

vi. **Digitally Efficient:** Capable of using computers for design, analysis and computation with appropriate software, and employing modern e-library search tools.

vii. **Ethical awareness/reasoning:** The graduate should be capable of demonstrating the ability to think and analyse rationally with a modern and scientific outlook and identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights, and adopting objectives, unbiased and truthful actions in all aspects of work.

viii. **National and international perspective:** The graduates should be able to develop a national as well as international perspective for their career in the chosen field of academic activities. They should prepare themselves during their most formative years for their appropriate role in contributing towards the national development and projecting our national priorities at the international level about their field of interest and future expertise.

ix. **Lifelong learners:** Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and reskilling in all areas of business management.

Some of the expected learning outcomes that a student should be able to demonstrate on completion of Diploma program may include the following:

Knowledge & Understanding

i. Demonstrate extensive knowledge of the disciplinary foundation in the various areas of Aeronautics, as well as insight into contemporary research and development.

ii. Demonstrate specialized methodological knowledge in the specialized areas of aeronautics about professional literature, principles of flight and reviewing scientific work.

Skills & Ability

i. Demonstrate ability to apply aeronautics knowledge & experimental skills critically and systematically for assessment and solution of complex problems and issues related to aircraft design, Flight operation and other specialized areas of aviation.

ii. Demonstrate ability to model, simulate and evaluate the phenomenon and systems in the aircraft.

iii. Demonstrate ability to apply one's knowledge, experimental skills, scientific methods & advanced design, simulation and validation tools to identify and analyse complex real-life problems and frame technological solutions for them.

Competence

i. Communicate his or her conclusions, knowledge & arguments effectively and professionally both in writing and utilizing presentation to different audiences in both national and international context.

ii. Ability to work collaboratively with others in a team, contributions to the management, planning and implementations.

iii. Ability to independently propose research/developmental projects, plan their implementation, undertake its development, evaluate its outcomes and report its resultsproperly.

iv. Ability to identify the personal need for further knowledge relating to the current and emerging areas of study by engaging in lifelong learning in practices.

4. Qualification Description:

The details of Eligibility for Admission – Pass in Higher Secondary or equivalent to HSC.

5. PROGRAM LEARNING OUTCOMES

PL01: Able to utilize the knowledge of aviation in an innovative, dynamic and challenging environment for the design and development of new products and to manage airline operations.

PL 02: An ability to function on a multidisciplinary team.

PL03: An ability to design, troubleshoot system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.

PL04: Knowledge of contemporary issues

PL05: Recognition of the need for, and an ability to engage in life-longlearning.

PL06: The broad education necessary to understand the impact of engineeringsolutions in a global, economic, environmental, and societal context.

PL07: An understanding of professional and ethical responsibility.

6.TEACHING-LEARNING PROCESS

Teaching – learning process and assessment of student learning levels.

Instead, theyare intended to allow for flexibility and innovation in

(ⅰ)   program design and syllabidevelopment by higher education institutions (HEIs),

(ii)   teaching-learning process,

(iii)   assessment of student learning levels, and

(iv)   periodic program review within a broad framework of agreed expected graduate attributes, qualification descriptors, program learning outcomes and course learning outcomes. The overall objectives of the learning outcomes-based curriculum framework are to:

  ➢ Enable prospective students, parents, employers and others to understand the nature and level of learning outcomes (knowledge, skills, attitudes and values)or attributes a graduate of a program should be capable of demonstrating on successful completion of the program of study;

  ➢ Maintain national standards and international comparability of learning outcomes and academic standards to ensure global competitiveness, and to facilitate student/graduate mobility; and

  ➢ Provide higher education institutions with an important point of reference for designing teaching-learning strategies, assessing student learning levels, and periodic review of programs and academic standards.

7. ASSESSMENT METHODS - Examination and Evaluation

7.1.1 Examination:

  i)   There shall be examinations at the end of each semester, for odd semesters in November / December, for even semesters in April / May. A candidate who does not

pass theexamination in any course(s) shall be permitted to appear in such failed courses in the subsequent examinations to be held in October / November or April / May.

ii) A candidate should get registered for the first-semester examination. If registration is not possible owing to a shortage of attendance beyond condonation limit/regulations prescribed OR belated joining OR on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after completion of the program.

iii) The results of all the examinations will be published through University Website. In the case of passed out candidates, their arrear results will be published through University Website.

7.1.2 **To register for all subjects**: Students shall be permitted to proceed from the First Semester up to the Final Semester irrespective of their failure in any of the Semester Examination, except for the shortage of attendance programs. For this purpose, Students shall register for all the arrear subjects of earlier semesters along with the current (subsequent) Semester Subjects.

7.1.3 **Marks for Continuous Internal Assessment** (CIA) Examinations and End Semester Examinations (ESE) for PART I, II & III

i. There shall be no passing minimum for Continuous Internal Assessment (CIA) Examinations.

ii. For the End Semester Examination, the passing minimum shall be 40% (Forty Percentage) of the maximum marks prescribed for the Course/Practical/Project and Viva-Voce.

iii. In the aggregate (CIA and ESE) the passing minimum shall be 40%.

iv. He / She shall be declared to have passed the whole examination, if he/she passes in all the courses wherever prescribed in the curriculum by earning **45** CREDITS.

7.1.4 **Question Paper Pattern** for End Semester Examination

SECTION – A 10 questions 10 X 3   = 30 Marks

SECTION – B Any 5 questions from 8 questions 5 X 8   = 40 Marks

SECTION – C Any 2 questions from 4 questions 2 X 15   = 30 Marks

                                                Total 100 Marks

7.1.5 SUPPLEMENTARY EXAMINATION:

Supplementary Examinations are conducted for the students who appeared in the final semester examinations. Eligible criteria for appearing in the Supplementary Examinations are as follows:

i. Eligibility: A Student who is having a maximum of two arrear papers is eligibleto appear for the Supplementary Examination.

ii. Non-eligibility for those who completed the program: Students who have completed their Program duration but having arrears are not eligible to appear for Supplementary Examinations.

7.2 Evaluation

7.2.1 RETOTALLING, REVALUATION AND PHOTOCOPY OF THE ANSWER SCRIPTS:

i. Re-totaling: All UG Students who appeared for their Semester Examinations are eligible for applying for re-totaling of their answer scripts.

ii. Revaluation: All current batch Students who have appeared for their Semester Examinations are eligible for the Revaluation of their answer scripts. Passed out candidates are not eligible for Revaluation.

iii. Photocopy of the answer scripts: Students who have applied for revaluation can download their answer scripts from the University Website after fifteen days from thedate of publication of the results.

7.2.2 **The examination and evaluation for MOOCs** will be as per the requirements of the regulatory bodies and will be specified at the beginning of the Semester and notified by theuniversity NPTEL-SWAYAM Coordinator (SPOC).

7.2.3 CLASSIFICATION OF SUCCESSFUL STUDENTS

a) CGPA 9.00 to 10.00 shall be declared to have passed the examination in **First class with Outstanding**.

b) CGPA 7.50 to 8.99 shall be declared to have passed the examination in **First class with distinction**.

c) CGPA 6.00 to 7.49 shall be declared to have passed the examination in **First Class**.

d) CGPA 5.00 to 5.99 in the aggregate shall be declared to have passed the examinationin the **Second** Class.

e) CGPA 4.00 to 4.99 shall be declared to have passed the examination in the **Third** Class.

7.2.4   MARKS AND GRADES:

The following table shows the marks, grade points, letter grades and classification to indicate the performance of the student:

Grade Conversion Table - Diploma			
Range of Marks	**Grade Points**	**Letter Grade**	**Description**
90 – 100	10	O	Outstanding
82 – 89	9	A+	Excellent
75 – 81	8	A	Very Good
67 – 74	7	B+	Good
60 – 66	6	B	Above Average
50 – 59	5	C	Average
40 – 49	4	D	Minimum for pass
0 – 39	0	RA	Reappear
		AAA	Absent

Computation of Grade Point Average (GPA) in a Semester, Cumulative Grade Point Average (CGPA) and Classification.

GPA for a Semester: $= \sum i C_i G_i \div \sum i C_i$ That is, GPA is the sum of the multiplication of grade points by the credits of the courses divided by the sum of the credits of the courses in a semester.

Where: C_i = Credits earned for course I in any semester,

Gi = Grade Points obtained for course I in any

semestern = Semester in which such courses were credited.

Letter Grade and Class CGPA

Overall Performance – Diploma		
CGPA	**GRADE**	**CLASS**
4.00 - 4.99	D	Third Class
5.00 - 5.99	C	Second Class
6.00 - 6.69	B	First Class
6.70 - 7.49	B+	First Class
7.50 - 8.19	A	First Class with Distinction*
8.20 - 8.99	A+	First Class with Distinction*
9.00 - 10.00	O	First Class - Outstanding*

7.2.5 Ranking

- The students who have passed in the first appearance and within the prescribed semester of the Diploma program are eligible.
- Students who pass all the examinations prescribed for the Program in the FIRST APPEARANCE ITSELF ALONE are eligible for Ranking / Distinction.
- The case of Students who pass all the examinations prescribed for the Program with a break in the First Appearance is only eligible for Classification.
- Students qualifying during the extended period shall not be eligible for RANKING.

7.2.6 MAXIMUM PERIOD FOR COMPLETION OF THE PROGRAMS TO QUALIFYFOR DIPLOMA

i. A Student who for whatever reason is not able to complete the program within the normal period (N) or the Minimum duration prescribed for the program, maybe allowed two years period beyond the normal period to clear the backlog to be qualified for the Diploma program. (Time Span = 1 year for the completion of program)

ii. In exceptional cases like major accidents and childbirth an extension of one year is considered beyond the maximum period (Time Span= N + 1 year for thecompletion of program).

7.2.7 REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The University may from time-to-time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Board of Management.

Structure of Diploma Course

The program consists of 45 credits based on the Choice BasedCredit System (CBCS) approved by the UGC with 1 hour for each credit for theory/tutorials and 2 hours for each credit for laboratory work. A student must take 45 creditsin total to qualify for the grant of the Diploma Certificate after completing them successfully as per rules and regulations of the HEI.

A detailed list of Core Courses, Discipline Specific Courses (DSE), Discipline Elective Course(DE), Generic Elective Courses (GEC), Skill Enhancement Courses (SEC) and Ability Enhancement Compulsory Courses (AECC) are given in Section 6.2.

Structure of Course

Credits for Diploma in Airport Management

Semester	Compulsory Core Courses (CC)	Discipline Specific Elective (DSE) each with 05 credit	Skill Enhancement Course (SEC) each with 02 credit	Generic Elective (GE) each with 02 credit	Total Credits
Sem I	CC – 1				
	CC – 2				
	CC – 3				
	CC – 4				
	CC – 5				
Sem II	CC – 6				
	CC – 7				
	CC – 8				
	CC – 9				
	CC – 10				

Internship:

Sem II	Internship

Vels Institute of Science and Technology and Advanced studies (VISTAS)

Diploma in Airport Management

Courses of Study and Scheme of Assessment

(Minimum Credits to be earned:45)

Component	I Sem	II Sem	Total Credits
Core Courses	20	20	40
Ability Enhancement Courses (AEC)	-	-	-
Discipline Specific Elective (DSE) & Generic Elective (GEC)	-	-	-
Skill enhancement Course (SEC)	-	-	-
Internship	-	5	5
Total Credits	**20**	**25**	**45**

VELS INSTITUTE OF SCIENCE, TECHNOLOGY AND ADVANCED STUDIES
(VISTAS)
Diploma in Airport Management
COURSES OF STUDY AND SCHEME OF ASSESSMENT
(MINIMUM CREDITS TO BE EARNED: 45)

Code No.	Course	Hours/Week				Maximum Marks		
		Lecture	Tutorial	Practical	Credits	CA	SEE	Total
SEMESTER 1								
CORE	Fundamentals of Aviation	3	1	0	4	40	60	100
CORE	Grooming	3	1	0	4	40	60	100
CORE	Airline Operations	4	0	0	4	40	60	100
CORE	Airport Operations	4	0	0	4	40	60	100
CORE	Aviation Security	4	0	0	4	40	60	100
		18	**2**	**0**	**20**			
SEMESTER 2								
CORE	Dangerous Goods	3	1	0	4	40	60	100
CORE	Load & Trim	3	1	0	4	40	60	100
CORE	Personality Development	4	0	0	4	40	60	100
CORE	Ramp safety	4	0	0	4	40	60	100
CORE	Reservation and Ticketing	4	0	0	4	40	60	100
INTERNSHIP	Internship	0	0	10	5			100
		18	**2**	**10**	**25**			

CA   - Continuous Assessment   **SEE   - Semester End Examination**

LIST OF CORE COURSES

(Theory)

S.NO	COURSE CODE	COURSE TITLE
1		Fundamentals of Aviation
2		Grooming
3		Airline Operations
4		Airport Operations
5		Aviation Security
6		Dangerous Goods
7		Load and Trim
8		Personality Development
9		Ramp Safety
10		Reservation and Ticketing

(INTERNSHIP)

S.no	Course code	Course Title
1		Internship

FUNDAMENTALS OF AVIATION						
Subject Code			IA Marks			40
Number of Lecture Hours/Week		4	Exam Marks			60
Total Number of Lecture Hours		30	L	T	P	C
Credits		4	3	1	0	4

COURSE OBJECTIVES:

The objective of this module is to make the student familiar about the fundamentals of aviation.

UNIT I	HISTORY	5 Hours

Airline – Airport – Aerodrome – History of Aviation – Evolution of military to Civil Aviation – Modern Aviation – History of Indian Civil Aviation – Development of Air Transportation in India – Birth of Modern Airlines

UNIT II	AUTHORITIES	6 Hours

Ministry of Civil Aviation (MoCA) – Directorate General of Civil Aviation (DGCA) – Airport Authority of India (AAI), Bureau of Civil Aviation Security (BCAS) – Airports Economic Regulatory Authority (AERA) - Aircrafts Accident investigation Bureau (AAIB) – International Air Transportation Association (IATA) – International Civil Aviation Organization (ICAO) – ICAO Annexes - Airports Council International (ACI).

UNIT III	CONVENTIONS	6 Hours

Chicago Convention – Importance of Chicago Convention – Open Skies Treaty – LPG of Aviation in Indian Markets

UNIT IV	BASIC AIRCRAFT KNOWLEDGE	10 Hours

Structure of Aircraft, Basic axis of movement of aircraft – Flight Control surfaces – primary, secondary – Aircraft Power plant – Piston engine – Jet Engine – Basic Classification of Aircraft – Based on weight, landing gear (surface it can land)

UNIT V	DEPARTMENTS	3 Hours

Departments in Airport – Operations & Corporate – Hierarchy

COURSE OUTCOMES:

After the course the students are expected to be able to

CO1: Apply appropriate set theoretic concepts to various conceptual in aviation.

CO2: Identify various departments and operational functions in aviation.

CO3: Gain knowledge on fundamentals of aviation

CO4: Obtain knowledge on history, growth and current scenario of aviation

CO5: Identify basic technical aspects of aircraft.

REFERENCE BOOKS:

1. Study about Aviation by Rishiraj Singh Rathore
2. Fundamentals of aircraft management by Haguma Timothee

WEB LINKS:

1. https://www.civilaviation.gov.in/
2. https://www.dgca.gov.in/

GROOMING

Subject Code		IA Marks			40
Number of Lecture Hours/Week	4	Exam Marks			60
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	3	1	0	4

COURSE OBJECTIVES:

Grooming is a very essential in aviation. Students will gain knowledge on how to groom well and be presentable as per the industrial standards.

UNIT I	BODY & PERSONAL HYGIENE	8 Hours

Balanced Diet – Exercise – BMI – Personal Hygiene – Skin – Products

UNIT II	FACE	8 Hours

Face Make Up for Women – Face Make Up for Men– Do's & Don'ts in Make up – Products required – Products – Practical sessions

UNIT III	HAIR & NAILS	8 Hours

Hair Color and length (for Men and Women) – Hair Ornaments – Hairstyles not permitted (for Men and Women) – Nails (for Men and Women)

UNIT IV	UNIFORM	8 Hours

Maintenance of Uniform – Carrying Blazer / Jackets – Uniform Tie - Name Badge – I Card – Socks /Stockings – Shoes – Disposal of Uniform

UNIT V	ACCESSORIES	8 Hours

Earrings –Watch – Spectacles / Sunglasses – Handbags /Trolley bag

COURSE OUTCOMES:

At the end of this course the students will be able to,
CO1: Understand the importance of Grooming
CO2: Identify and understand the techniques to use multiple make up products
CO3: Wear make up as per standards.
CO4: Practice and follow Hair and Nail standards.
CO5: Respectfully handle uniform and accessories provided by the organization.
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REFERENCE BOOKS:

1. Aviation Wings – Arun Sharma and Gagandeep – 3Dec2019

2. Making Faces – Kevyin Aucoin – Sep1999

WEB LINKS:

1. https://www.colorescience.com/blogs/learn/how-to-apply-makeup

2. https://www.lifehack.org/523152/7-beginners-techniques-perfect-mens-makeup-application

3. https://www.slideshare.net/10041976/personal-hygiene-13156885

AIRLINE OPERATIONS

Subject Code		IA Marks			40
Number of Lecture Hours/Week	4	Exam Marks			60
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	4	0	0	4

COURSE OBJECTIVES:

This course allows students to understand the airline operations at the airport and its terminologies used in day to day affairs. Also, student will understand the techniques to handle various kinds of passengers as per their needs and requirement.

UNIT I	**INTRODUCTION TO AIRLINE GROUND OPERATIONS**	**8 Hours**

Introduction – Terminologies – Ground Handling Services – Domestic operations – International Operations

UNIT II	**BAGGAGE AND SPECIAL ASSISTANCE**	**8 Hours**

Categories of Bags – Procedure for Check In baggage –Baggage Acceptance (List of questions to pax on luggage) – Weight and Piece concept – Special Assistance /Wheel Chair – Guest Relations – VIP/VVIP/CIP Handling

UNIT III	**ALLOCATIONS**	**8 Hours**

Reservations – Check In –BMA – BBA – SHA (Dom & Intl) – Immigrations – Customs – Boarding Gate – Arrivals – Lost and Found /MHB

UNIT IV	**CUSTOMER SERVICE**	**8 Hours**

Customer Service - Customer Needs and Expectations – CUSS – CUTE – Effective Communication – Handling difficult passengers and complaints

UNIT V	**HANDLING EXIGENCIES**	**8 Hours**

Incidents – Accidents – Bomb Threat – Medical Emergency – Fire Fighting – First Aid -

COURSE OUTCOMES:

After the course the students are expected to be able to

CO1: Student will understand the airline operations at the airport..

CO2: Student will have a clear idea on the baggage handling and procedures

CO3: Student gets to understand various allocations of duty for airline operations at the airport

CO4: Student will be able to handle passengers and enquiries

CO5: Have clear understanding of types of exigencies and handle those adhering to the protocol.

REFERENCE BOOKS:

1. Practical Airport Operations, Safety and Emergency Management: Protocols for Today and Future by Jeffry C Price

WEB LINKS:

1. https://www.revfine.com/airline-industry/

2. https://www.youtube.com/watch?v=SGp2tbwdmQw

3. https://www.slideshare.net/Padrino80/airport-emergency

AIRPORT OPERATIONS

Subject Code		IA Marks			40	
Number of Lecture Hours/Week	4	Exam Marks			60	
Total Number of Lecture Hours	46	L	T	P		C
Credits	4	4	0	0		4

COURSE OBJECTIVES:

To impart knowledge on the processes and procedures of airport operations. Understanding the operations inside the airport.

UNIT I	INTRODUCTION TO AIRPORT	8 Hours

Introduction to Airport – Function- Customers and Partners – Airport Business and Economic Impact – Airport Layout and planning

UNIT II	LANDSIDE OPERATIONAL AREAS	10 Hours

Departures – Arrivals - BMA – BBA – Public Announcements – Lost and Found – SHA and equipments at SHA – Information Desks – Coordinating with various Stake Holders – Govt. Officials at the airport

UNIT III	AIRSIDE OPERATIONAL AREAS	12 Hours

Airside Meaning – Equipments, Machines and Vehicles at the Ramp – Ramp Operations - Follow me – Runway – Taxiway – Markings – Runway Maintenance – FOD – ARFF – AOCC – OCC – ATC

UNIT IV	CONCESSIONAIRES	8 Hours

Commercial places in and out of Terminals –Stock Entry into the Terminal – Duty Free

UNIT V	TRAINING & MOCK DRILLS	8 Hours

Mock Drill meaning – Trainings – Refreshers – Emergencies – Media Handling

COURSE OUTCOMES:

At the end of the course the student will be able to,

CO1: Student will learn the layout of airport and its economic importance

CO2: Student will be able to analyse the operations happening inside a terminal

CO3: Critical operations of Airport – AOCC, Ramp and ATC

CO4: Student will be able to explain the various concessionaries at the airport and their operation

CO5: Student will be understanding the importance of various trainings and refresher courses required for the operations

REFERENCE BOOKS:

1. Managing Airports: An International Perspective by Annie Graham

2. Airport Planning and Management by Alexander T Wells & Seth B Young

WEB LINK:

1. https://www.nap.edu/read/14599/chapter/4#:~:text=Typical%20activities%20involved%20with%20the,Health%20and%20Safety%20Executive%202000).

2. https://aviationlearnings.com/ground-handling-ramp-operations-aircraft-ground-support-equipment-gse-machines-that-supplement-the-airplane/

AVIATION SECURITY				
Subject Code		IA Marks		40
Number of Lecture Hours/Week	4	Exam Marks		60
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	4	0	0	4

COURSE OBJECTIVES:

To create awareness and importance of Security in Aviation as aviation being the easy target of destruction that can have a massive impact on the countries economy.

UNIT I	**AVIATION SECURITY**	**8 Hours**

Introduction – Meaning – BCAS – Training Pattern - types of Threats and Methodologies – Past Incidents

UNIT II	**ROLES OF ICAO, IATA AND ACI IN AVSEC**	**8 Hours**

AvSec – Global Structure – Role of ICAO, IATA and ACI in AvSec – Civil Aviation is an Attractive Target

UNIT III	**REGULATING AVSEC – ANNEX 17 , DGCA & BCAS**	**8 Hours**

International Conventions – ICAO Annex 17, Document 8973 – IATA Security Manual

UNIT IV	**MANAGING ACCESS CONTROL – AIRSIDE AND LANSIDE**	**8 Hours**

Demarcation of an Airport – Access Control Measures - Systems – Airport ID system – Airport entry – Pre Boarding Screening of Pax and their Cabin Baggage – Sterile Areas – Control of Hold Baggage

UNIT V	**SECURITY AWARENESS IN AIRPORT ENVIRONMENT**	**8 Hours**

Asset protection – Behavioral Issues leading to Crime – Managing Threats – Inflight Threats – Nature of Bomb Threats

COURSE OUTCOMES:

At the end of this course students will be able to,

CO 1: Students will know the importance of Aviation Security

CO 2: Will understand the Training pattern for different officials of various cadre

CO 3: Will know the regulations and compliances of Regulatory

CO 4: Gain knowledge in Access Control of Security at Landside and Airside

CO 5: Will acquire knowledge in methods to understand the nature of threats and act accordingly

Text / Reference books:

1. Aviation Security in India by RS Yadav

2. The Management of Aviation Security by D Phipps

WEBLINKS:

1. https://www.icao.int/security/sfp/pages/securitymanual.aspx
2. https://www.icao.int/security/sfp/pages/annex17.aspx#:~:text=SARPs%20for%20internatio nal%20aviation%20security,%2C%20French%2C%20Russian%20and%20Spanish.

DANGEROUS GOODS

Subject Code		IA Marks		40	
Number of Lecture Hours/Week	4	Exam Marks		60	
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	3	1	0	4

COURSE OBJECTIVES:

To understand the basic knowledge on hazard identification, basic terms and definition, basic classification, relevant principle methods of basic classifications.

UNIT I	**DANGEROUS GOODS**	**8 Hours**

Introduction – HazMat – Freight Forwarder – Freight Operator - Class Division – Primary Risks – Secondary Risks – Packaging Group,. UN Number – Proper Shipping Names – Route of Exposure –

UNIT II	**INTERNATIONAL CLASSIFICATION OF DG**	**8 Hours**

List of Dangerous Goods – UNTDG – International Classification – System Linkage – Classes of Dangerous Goods

UNIT III	**UN MARKING AND PACKAGING**	**8 Hours**

Labels – Display of Labels – Packaging of DG – Packaging Codes – Classification Systems

UNIT IV	**IATA DGR**	**8 Hours**

Background – Development and Principles of IATA DGR – Sections in IATA DGR – IATA Hazard Labels – Understanding the Blue Pages / States and Operators Variations / Training requirement

UNIT V	**EMERGENCY PROCEDURES**	**8 Hours**

Damaged / Leaking Package – report Incidents / Accidents / Occurrences and Miss Declarations of DG

COURSE OUTCOMES:

At the end of this course students will be able to,

CO 1: Students will be able to understand the basic principles of hazard classification and hazard communication of Dangerous Good

CO 2: Students able to clearly understand 9 Classes of Dangerous Goods under UN Model regulations and understand marking and labeling requirements

CO 3: Students will be able to understand the relevant elements concerning dangerous goods

packaging

CO 4: Students will be able to apply the relevant Dangerous Goods regulations - IATA DGR

CO 5: Students will be able to understand the Emergency procedures.

REFERENCE BOOKS:

1. Dangerous Goods Regulations (DGR) – IATA

WEB LINKS:

1. https://www.iata.org/en/publications/dgr/

2. https://www.faa.gov/hazmat/resources/regulations

LOAD AND TRIM

Subject Code		IA Marks		40	
Number of Lecture Hours/Week	4	Exam Marks		60	
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	3	1	0	4

COURSE OBJECTIVES:

This course provides students with the detailed knowledge and skills required to plan, calculate and finalizeweight and balance documentation. And also covers the basic theories of flight and balance, an overview of standard Load Planning & Load Control process and the required documentation.

UNIT I	INTRODUCTION TO LOAD AND TRIM	8 Hours

Description-Importance of Load & Trim Sheets -Regulatory Requirements

UNIT II	BASIC THEORY OF FLIGHT	8 Hours

General Description of Aircraft-DCS (Departure Control system)

UNIT III	THEORY OF FLIGHT	8 Hours

Weight & Balancing-Center of Gravity-Center of pressure-Preparation & Approval of weight schedule-standard weight of flight crew and passengers

UNIT IV	LOAD AND TRIM SHEETS	8 Hours

Procedure for preparing load & Trim sheets -Imp features of L& T sheets-Adjustment of the Last Minute Changes (LMC)-Qualifications – Duties & Responsibilities of L&T officer

UNIT V	LOADING AND UNLOADING IN AIRCRAFT	8 Hours

Instructions for safe loading – Procedure of Loading & Unloading of Passengers / Baggage and Cargo

COURSE OUTCOMES:

At the end of this course the students will be able to,

CO1: Students will understand the concept and purpose of load and trim, Requirements, Roles and Responsibilities of trained personnel, Types of training.

CO2: Students will understand the calculations that go into L&T, System data synchronizing

CO3: Students will understand the weight and balance of an aircraft, Centre of Gravity & Centre of pressure areas, Imply knowledge about Weight schedule

CO4: Students will understand the preparing procedures of Load and trim sheet, Adjustments made at Last minute, Responsibilities of L&T/LO officer

CO5: Students will understand the practice of safe loading sequence and procedures, Aircraft on

   ground balance and safety precautions.

WEB LINKS:

1. https://skybrary.aero/articles/aircraft-load-and-trim
2. https://pdfmanuals.info/downloads/4674917-aircraft-load-sheet-and-trim-sheet

1. **TEXT BOOKS:**

1. Nordian, "Mass & Balance: Flight Performance & Planning", streling book house, 2017.

2. Jeppesen, "EASA ATPL Training Mass & Balance", Jeppesen Gmbh (1 January 2014).

PERSONALITY DEVELOPMENT

Subject Code		IA Marks			40
Number of Lecture Hours/Week	4	Exam Marks			60
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	4	0	0	4

COURSE OBJECTIVES:

The course lets the students to improve on Attitude and Interpersonal skills which are much needed to serve in the aviation industry. Student will learn professionalism in terms of conduct, email and telephone etiquette and face the professional world more confidently.

UNIT I	INTRODUCTION TO PERSONALITY DEVELOPMENT	8 Hours

The concept of personality - Dimensions of personality – Theories of Freud & Erickson-Significance of personality development. The concept of success and failure: What is success? - Hurdles in achieving success - Overcoming hurdles - Factors responsible for success – What is failure - Causes of failure. SWOT analysis.

UNIT II	ATTITUDE AND MOTIVATION	8 Hours

Attitude - Concept - Significance - Factors affecting attitudes - Positive attitude – Advantages –Negative attitude- Disadvantages - Ways to develop positive attitude - Differences between personalities having positive and negative attitude. Concept of motivation - Significance – Internal and external motives - Importance of self- motivation- Factors leading to de-motivation

UNIT III	SELF ESTEEM	8 Hours

Term self-esteem - Symptoms - Advantages - Do's and Don'ts to develop positive self-esteem – Low self-esteem - Symptoms - Personality having low self esteem - Positive and negative self esteem. Interpersonal Relationships – Defining the difference between aggressive, submissive and assertive behaviors - Lateral thinking.

UNIT IV	ASPECTS OF PERSONALITY DEVELOPMENT	8 Hours

Body language - Problem-solving - Conflict and Stress Management - Decision-making skills - Leadership and qualities of a successful leader – Character building -Team-work – Time management - Work ethics – Good manners and etiquette – Email and Telephone Etiquette

UNIT V	EMPLOYABILITY QUOTIENT	8 Hours

Resume building- The art of participating in Group Discussion – Facing the Personal (HR & Technical) Interview -Frequently Asked Questions - Psychometric Analysis - Mock Interview Sessions.

COURSE OUTCOMES:

After the course the students are expected to be able to

CO 1: Student will be able to understand self and accept other personalities.

CO 2: Student will be able to self motivate as well as support others.

CO 3: Student will be able to build a Good Resume of self.

CO 4: Student will develop Positive self esteem, problem solving and decision making skills.

CO 5: Student will be able to face interviews confidently.

REFERENCE BOOKS:

1. Hurlock, E.B (2006). Personality Development, 28th Reprint. New Delhi: Tata McGraw Hill.

2. Stephen P. Robbins and Timothy A. Judge(2014), Organizational Behavior 16th Edition: Prentice Hall.

RAMP SAFETY				
Subject Code		IA Marks		40
Number of Lecture Hours/Week	4	Exam Marks		60
Total Number of Lecture Hours	40	L	T	P	C
Credits	4	4	0	0	4

COURSE OBJECTIVES:

Ramp Safety course helps the student\ study the Ramp side Operations, aircraft parking techniques, and the importance of training all staffs while operating at the ramp side.

UNIT I	**INTRODUCTION**	**8 Hours**

Ramp – Ramp Safety – Markings – Aircraft Familiarization – Aircraft Fueling – Parking Systems – Isolation Bay – Perimeter Wall – Flight Dispatch

UNIT II	**RAMP OPERATIONS AND SAFETY**	**8 Hours**

Ramp Operations – Supervision – Marshaling – Moving and Towing Aircraft - Safety Measures – Repair of Faults – Wheel and Tire check – Passenger Loading – Ground Water Supply – De-icing, Cooling and heating – Toilet servicing, potable water,

UNIT III	**CURRENT PRACTICES IN RAMP SAFETY**	**8 Hours**

Training Requirements – Safety Training – Ground Handler Training – Drivers Licenses (ADP) – ISAGO Implementation

UNIT IV	**DUTIES, RESPONSIBILITIES AND OVERSIGHT**	**8 Hours**

Formal Methodology of Information to Staffs – Hazard Reporting – Safety Committee – Data Management and Reporting – Operational Improvements - Standards, Policies, Controls and Audits

UNIT V	**FUTURE TRENDS**	**8 Hours**

Surface radars – Ramp Towers - automation in aviation

COURSE OUTCOMES:

After the course the students are expected to be able to

CO 1: Student will be able to explain the ramp side operations

CO 2: Student will understand the importance of safety and training

CO 3: Student will be able to understand the loading and unloading processes of Passengers and Cargo

CO 4: Student will have a clear understanding of the duties, responsibilities at the Ramp

CO 5: Student will be able to explain the future trends at the ramp as per the modern airport concepts

REFERENCE BOOKS:

1. Operations Research in the Airline Industry by Gang Yu.
2. Aircraft Ground Handling by Subash S Narayanan

WEBLINKS

1. https://nap.nationalacademies.org/nap-cgi/skimchap.cgi?recid=14599&chap=i%E2%80%93vii
2. https://www.scribd.com/book/440093219/Aircraft-Ground-Handling

RESERVATIONS AND TICKETING

Subject Code		IA Marks			40
Number of Lecture Hours/Week	4	Exam Marks			60
Total Number of Lecture Hours	40	L	T	40	C
Credits	4	4	0	4	4

COURSE OBJECTIVES:

Reservations and Ticketing helps the student to understand the reservation systems in airlines. They will understand various classes in an aircraft and about overbooking. Additionally, they get to study a reservation software and process of ticketing

UNIT I	**INTRODUCTION**	**8 Hours**

Introduction – Ticketing – Reservation systems – Passenger Tariff rules – IATA Geography and Global Indicator – IATA Station / City Codes and Airline Codes

UNIT II	**FARE SELECTION AND CURRENCY RULES**	**8 Hours**

Fare Type – Carrier fare selection - Currency – Conversion & its procedures – Service Codes

UNIT III	**SPECIALISED ROUTINGS**	**8 Hours**

Concept of Specified Routing – Single Trip – Round Trip – Add ons

UNIT IV	**Ticketing Process**	**8 Hours**

Tickets and Travel Documents – Passenger tickets and Baggage Checks

UNIT V	**FARES FEES AND CHARGES**	**8 Hours**

Types of Taxes, fees and charges – Children and Infant Fares – Billing and Settlement Plan (BSP) – Commission and Service Fees – Advantages of BSP To Travel Agents

COURSE OUTCOMES:

After the course the students are expected to be able to

CO1: Student will be able to understand the ticketing and reservation procedures.

CO2: Student will be to understand and formulate the fare and pricing of air tickets

CO3: Student can explain the Fares and Charges of Different passenger category and understand the Billing techniques of IATA

CO4: Student will have a hands on experience on the reservation software

CO5: Student will have thorough knowledge on various currencies and its conversion techniques.

REFERENCE BOOKS:

1. IATA (2002).Ticketing handbook, Montreal Canada Pender. S. (2001) Travel, Trade and Transport continuum

2. Sharply, R. (2002) The Tourism Business: An introduction to Business

WEB LINKS:

1. http://www.world tourism.org/WTO

2. https://www.iata.org/en/training/subject-areas/fares-ticketing-courses/

INTERNSHIP			
Credits	05	Duration	30 **Hours**

COURSE OBJECTIVES:

Provide practical exposure for the student in live environment in, Reservations and Ticketing, fare type, routing, travel document privilege and examination, Demarcation of airports, ramp operations.

Tasks to be performed:

1. Introduction – Ticketing – Reservation systems – Passenger Tariff rules – IATA Geography and Global Indicator – IATA Station / City Codes and Airline Codes
2. Fare Type – Carrier fare selection - Currency – Conversion & its procedures – Service Codes
3. Concept of Specified Routing – Single Trip – Round Trip – Add ons
4. Tickets and Travel Documents – Passenger tickets and Baggage Checks
5. Types of Taxes, fees and charges – Children and Infant Fares – Billing and Settlement Plan (BSP) – Commission and Service Fees – Advantages of BSP To Travel Agents.
6. Demarcation of an Airport – Access Control Measures - Systems – Airport ID system – Airport entry – Pre-Boarding Screening of Pax and their Cabin Baggage – Sterile Areas – Control of Hold Baggage.
7. Ramp Operations – Supervision – Marshaling – Moving and Towing Aircraft - Safety Measures – Repair of Faults – Wheel and Tire check – Passenger Loading – Ground Water Supply – De-icing, Cooling and heating – Toilet servicing, potable water,