

# BANGALORE INSTITUTE OF AVIATION AND LOGISTICS

## Revised Syllabus for Graduate Diploma in Aviation – Add-on Course w.e.f 1<sup>st</sup> Apr 2021

### Main Objective:

To impart professional education and training in different aspects of aviation studies at the undergraduate level and provide the opportunities to develop skills needed to take up responsible position at different sectors in aviation industry.

### Duration:

3years (6 semesters) Approximately 200 hours

SEMESTER	DURATION in Hours
1 <sup>st</sup> Semester	30
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- 1.4 Air Transport Nationalization – Air Corporation Act 1953
- 1.5 Open Sky Policy of Government of India
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- 1.7 Emergence of Low-Cost Carriers (LCC)
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- 1.10 Bilateral Agreements
- 1.11 Present Aviation Scenario in India, Growth, Competition & Future

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- 2.2 IATA Traffic Conference Areas
- 2.3 Airline Phonetics
- 2.4 Oceans & Continents
- 2.5 Minimum Connecting Time
- 2.6 Time Calculations – GMT, UTC, DST
- 2.7 Entry of Private Airlines in India

#### Module 3: Basics of Grooming

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- 3.6 Qualities of a Great Leader
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- 3.8 General Telephone Etiquette



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- 4.2 Areas of Airport – Airside, Landside & Kerbside
- 4.3 Customer Service – Definition & Types
- 4.4 Types of Customers
- 4.5 Introduction to Air Ticketing
- 4.6 International Travel Documents
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- 4.17 Departure, Arrival & Transit Procedures

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  - 5.2.11 Expectant Mother
  - 5.2.12 STCR (Stretcher Case)



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- 6.1 World Tracer System
- 6.2 Short Shipped Baggage
- 6.3 Short Landed Baggage
- 6.4 Over Carried Baggage
- 6.5 Property Irregularity Report (PIR)
- 6.6 Damage Pilferage Report (DPR)
- 6.7 AHL (Advice if Hold)
- 6.8 First Bag & Last Bag

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#### Module 8: Introduction to Ramp Operations

- 8.1 Ramp – Definition, Functional Areas
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- 8.3 PPE
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- 8.5 Ground Service Equipments
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- 8.8 Refuelling
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- 9.1 Introduction – Meaning – Importance
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- 9.4 General Description of Aircraft
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### Air Transportation Safety & Security

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- 10.1 Safety Management System – Meaning & Definition
- 10.2 Scope of SMS
- 10.3 Safety Policy & Objectives
- 10.4 Accountability & Responsibilities
- 10.5 Safety Reporting System
- 10.6 Emergency Response Programme (ERP)

### Module 11: National Civil Aviation Security Programme (NCASP) & Security

#### Screening Procedures

- 11.1 Protecting Public Air Transportation
- 11.2 Screening Personnel's & Baggage
- 11.3 Metal Detectors
- 11.4 X-ray Inspections
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### Module 12: Terrorism

- 12.1 Introduction – Causes of Terrorism
- 12.2 Rival Claim of Palestine – PLO
- 12.3 Nuclear Terrorism
- 12.4 Aircraft as Missiles
- 12.5 9/11 Terrorist Act and its Consequences
- 12.6 Steps to Combat Terrorism

### Module 13: Hijacking

- 13.1 Definition & Scenarios
- 13.2 Steps taken to contend Hijacking
- 13.3 Sky Marshal Programme
- 13.4 Air Transportation Security Act 2001



## 5<sup>th</sup> SEMESTER

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- 14.1 Introduction & Definition
- 14.2 Regulatory Framework
- 14.3 Extract of Rule 8 – Aircraft Rules 1937
- 14.4 The Aircraft (Carriage of Dangerous Goods) Rules, 2003
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- 14.11 Handling of Dangerous Goods
- 14.12 Emergency Responses

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- 15.2 Domestic Cargo
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- 15.5 Export Documents
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- 15.7 Certificate of Origin
- 15.8 Cargo Warehouse – Activity & Functions
- 15.9 Customs Formalities
- 15.10 Airway Bill – Contents, Purpose & Validation
- 15.11 Air Cargo Tariff, Rates & Charges
- 15.12 Valuation Charges & Disbursement
- 15.13 Logistics & Air Cargo Management Handling Facilities
- 15.14 Aircraft Cargo Restraints
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- 15.16 Loading Heavy Items on Wide Body Aircraft
- 15.17 Loading/ Unloading of Freighter Aircraft
- 15.18 Handling Wet Cargo
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- 16.1 Power Interview
- 16.2 Do's & Don'ts at an Interview
- 16.3 Scenarios
- 16.4 Relevance of Group Discussions
- 16.5 Group Discussion Factors
- 16.6 Group Discussion Etiquette
- 16.7 Situations Arising Out of a Group Discussion
- 16.8 Phases of a Group Discussion



## 6<sup>th</sup> SEMESTER

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- 17.2 Passenger Terminal Building
- 17.3 ATC
- 17.4 ARFF
- 17.5 Growth of Air Transport
- 17.6 Air Traffic Zones & Approach Areas

### Module 18: Planning & Designing the Terminal Area

- 18.1 Airport Designing & Planning
- 18.2 Space Relationships & Area Requirements
- 18.3 Airport Facilities & Infrastructure
- 18.4 Aircraft Noise Pollution
  - 18.4.1 Human Effects
  - 18.4.2 Operational Procedures to Reduce Noise
- 18.5 Vehicular Parking & Parking at Airports
- 18.6 UDAAN Scheme
- 18.7 Public Private Partnership in Airport Operations
- 18.8 Foreign Direct Investment

### Module 19: Communication Systems in Airport

- 19.1 Air Traffic Control (ATC)
- 19.2 Airport Operations Control Center (AOCC)
- 19.3 Communication Navigation Surveillance
- 19.4 Meteorological Department

### Module 20: Impact of Weather on Airline Industry

- 20.1 Temperature Change
- 20.2 Rain and Snowfall Patterns
- 20.3 Strong Storms
- 20.4 Rising Sea Levels
- 20.5 Actions to Adapt to Climate Change
- 20.6 Why are Flight Delays More Likely in Winter?



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### Duration:

3years ( 6 semesters) Approximately 210 hours - Average of 35hrs / semester.

### Teaching and Evaluation:

Class lectures, participative interaction sessions, site visit to places of aviation interests, airports, cargo warehouses, flight trips, exhibition, air shows and industrial visits.

Exams to be conducted at the end of every semester for each paper. Objective type exam of 100 marks .

Expected minimum attendance - 85%.

## FIRST SEMESTER

### Paper 1 – Aviation Basics

<b>1</b>	<b>History of Aviation</b>
a	Development of civil aviation/air transport in India
b	Global Aviation Industry
c	Growth of civil aviation in India post 2 <sup>nd</sup> world war
d	Air transport nationalization – Air corporation Act 1953
e	Open sky policy of Government of India
f	Emergence of Low Cost Carriers (LOC)
g	Entry of private airlines in India
h	Present aviation scenario in India and growth, competition and future
i	Reasons for recent failures / close down

<b>2</b>	<b>Aviation Organizations and regulations</b>
a	ICAO
	Nationality identification codes
	Bilateral agreements
	Freedoms of air
b	IATA – International schedules , two letter codes
	UFTAA



	FIATA
	DGCA
	BCAS
	CISF
	AAI

Paper 2 – Aviation Geography

<b>1</b>	<b>IATA</b>
a	organization and roles , membership and types
b	IATA - Areas TC 1, 2, 3
c	Basics of geography / Aviation geography
d	Time zone, time calculations, time differences, flying time, flying time calculations Day light savings and saving time
e	IATA – Airport codes
f	IATA – City codes
g	IATA - Alpha Numeric Codes
h	Airline terminology

<b>2</b>	<b>AAI</b>
a	Roles, functions and responsibilities
b	Air Traffic Control – functions and responsibilities

**EXAM**



## SECOND SEMESTER

### Paper 1 – Aviation Fundamentals

Recap of semester 1

<b>1</b>	<b>Aviation Conventions</b>
a	Warsaw conventions
b	Chicago conventions
c	Bermuda conventions

<b>2</b>	<b>Aircraft</b>
a	Types – wide body and narrow body
b	Airplane manufacturers and configurations

<b>3</b>	<b>Basic Aerodrome Infrastructure</b>
a	Runway, Taxiway, Terminal/Apron, Parking bay, airside
b	Terminal building, City side infrastructure, car parking, shops etc
c	Air traffic control, fire fighting
d	Marshalling towing, Push back Aerobridges
e	Fuel bowzer

### Paper 2 – Passenger Handling – Domestic

<b>1</b>	<b>Introduction to airports and airline ground operations</b>
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<b>2</b>	<b>Computer reservations and departure control system</b>
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<b>3</b>	<b>Airport entry formalities, role for CISF baggage screening etc</b>
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<b>4</b>	<b>Passenger check in formalities</b>
a	Baggage labeling, boarding cards, seating, hand baggage regulations, items not permitted as hand baggage, unaccompanied baggage, free baggage, excessive baggage weight measurements, DGR basics

<b>5</b>	<b>Arrival Formalities</b>
a	Disembarkation transfer, baggage retrieved, mishandled baggage, compensation, property irregularity report



**EXAM**

**THIRD SEMESTER**

Paper 1 – Passenger Handling - International

<b>1</b>	<b>Revision and Recap</b>
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<b>2.</b>	<b>Departure</b>
a	Travel documents – Passport, Visa, Insurance, health requirement, police requirements
b	International check in formalities
	Immigration, Customs – rules & regulations , Red channel, green channel, foreign exchange prohibited items, Security – Prohibited items, duty free

<b>3.</b>	<b>International Arrival formalities</b>
a	Screening baggage, Immigration, Visa on arrival, customs, duty free purchases, baggage allowance, plant quarantine, DGR, FIM

Paper 2 – Cargo – Domestic - Dispatch

<b>1</b>	<b>Basics of Cargo</b>
a	Airway Bills – consignee, consigner, consignment, booking procedure, packing list, declaration shipper's letter of instruction, gross weight, volume weight, valuation charges, security clearance, cooling period, screening, cargo manifest, cargo documents on board ( concertina pouch )

Cargo - Domestic - Arrival

<b>1</b>	Off loading, checklist, delivery book entry, sector wise binning, arrival intimation, CCA, DACC
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<b>2</b>	<b>Types and nature of cargo</b>
a	General cargo, precious cargo, livestock, human organs, human remains, arms and ammunition, DGR, post office mail, diplomatic mail/cargo,

<b>3</b>	<b>Rates and tariffs</b>
a	GCR, SCR, Class rates, valuation charge, add on charges, surcharge



4	Cargo claims and complaints
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EXAM
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## FOURTH SEMESTER

### Paper 1 – International Cargo

1	Recap of Domestic Cargo
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2	<b>Export Cargo</b>
a	International airway bill, neutral airway bill, import/export license, purchase order, invoice, packing list, certificate of origin, shipping bill, custodian, customs, bonded warehouse, carting order EDI, warehousing charges and formalities

3	<b>Import cargo</b>
a	Cargo arrival notice, delivery order, bill of entry, customs valuation, customs duty, duty draw back

4	Customs Formalities
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5	New trends in Export and import procedures and handling ice gate, E- payment, online filing
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6	Inland container depot
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### Paper 2 – Reservation and Ticketing

1	GDS – Galileo , Amadeus , Sabre , Abacus
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2	<b>Benefits in CRS</b>
a	A look back into manual reservations systems / ticketing



<b>3</b>	<b>Ticketing Procedures – PNR</b>
a	OAG , ABC guides , TIM , TIMATIC.
b	Types of Tickets – single, return circle and open jaw
c	Concessions – student, senior citizen, Army, seamen, etc

<b>4</b>	<b>E-Ticketing</b>
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<b>EXAM</b>
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### FIFTH SEMESTER

#### Paper 1 – Theory of flights

<b>1</b>	<b>How an aircraft flies</b>
a	Forces acting on an aircraft aerodynamic
b	Aircraft Structures
	Structure limitations
	Operational limitations
	Payload, MZFW, MTOW, MLW , RTOW

<b>2</b>	<b>Load and trim – weight and balance</b>
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<b>3</b>	<b>Practical for Trim sheets</b>
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<b>4</b>	<b>Airport Ground Handling</b>
a	Basics of Ground Handling
b	Equipments required for ground handling, step ladder, chocks, GPU, BFL, fire extinguisher, water cart , toilet cart , cooling unit, air starter, high lift, MDL, LDL, fork lift, pallet, containers, dollies and trollies.

#### Paper 2 – Airline Customer Services

<b>1</b>	<b>In flight Services</b>
a	Cabin catering, cabin dressing, safety equipments on board, galley equipments, duties of cabin crew, in flight arrangements



<b>2</b>	<b>Onboard handling of passengers</b>
a	Special passengers, unaccompanied minor, VIP/VVIP, wheel chair, stretcher cases deportee, frequent flyer program, passenger needing special attention.

**EXAM**

**SIXTH SEMESTER**

Paper 1 - Aviation as a carrer

<b>1</b>	<b>Recap for all 5 semester</b>
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<b>2</b>	<b>Customer service orientation</b>
a	Handling difficult passengers and complaints, communication guidelines and asking passengers about security guidelines, aviation security protocols, bomb threats and responses

<b>3</b>	<b>Soft skills required for aviation operations</b>
a	Attitude and challenges, importance of interpersonal skills, team building skills

<b>4</b>	<b>Aviation as a career</b>
a	Interview skills, presentations, making proper CVs, looking for job opportunities

**FINAL EXAM**



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- 14.12 Emergency Responses

### Module 15: Air Cargo Management

- 15.1 Cargo – Definition & Types
- 15.2 Domestic Cargo
- 15.3 International Cargo
- 15.4 Carriers Limitation of Liability
- 15.5 Export Documents
- 15.6 Invoice
- 15.7 Certificate of Origin
- 15.8 Cargo Warehouse – Activity & Functions
- 15.9 Customs Formalities
- 15.10 Airway Bill – Contents, Purpose & Validation
- 15.11 Air Cargo Tariff, Rates & Charges
- 15.12 Valuation Charges & Disbursement
- 15.13 Logistics & Air Cargo Management Handling Facilities
- 15.14 Aircraft Cargo Restraints
- 15.15 Cargo Compartment Condition
- 15.16 Loading Heavy Items on Wide Body Aircraft
- 15.17 Loading/ Unloading of Freighter Aircraft
- 15.18 Handling Wet Cargo
- 15.19 Cool Port

### Module 16: Interview Handling, Mock Interviews & Group Discussions

- 16.1 Power Interview
- 16.2 Do's & Don'ts at an Interview
- 16.3 Scenarios
- 16.4 Relevance of Group Discussions
- 16.5 Group Discussion Factors
- 16.6 Group Discussion Etiquette
- 16.7 Situations Arising Out of a Group Discussion
- 16.8 Phases of a Group Discussion



## 6<sup>th</sup> SEMESTER

# Airport Infrastructure & Strategic Planning

### Module 17: Introduction

- 17.2 Passenger Terminal Building
- 17.3 ATC
- 17.4 ARFF
- 17.5 Growth of Air Transport
- 17.6 Air Traffic Zones & Approach Areas

### Module 18: Planning & Designing the Terminal Area

- 18.1 Airport Designing & Planning
- 18.2 Space Relationships & Area Requirements
- 18.3 Airport Facilities & Infrastructure
- 18.4 Aircraft Noise Pollution
  - 18.4.1 Human Effects
  - 18.4.2 Operational Procedures to Reduce Noise
- 18.5 Vehicular Parking & Parking at Airports
- 18.6 UDAAN Scheme
- 18.7 Public Private Partnership in Airport Operations
- 18.8 Foreign Direct Investment

### Module 19: Communication Systems in Airport

- 19.1 Air Traffic Control (ATC)
- 19.2 Airport Operations Control Center (AOCC)
- 19.3 Communication Navigation Surveillance
- 19.4 Meteorological Department

### Module 20: Impact of Weather on Airline Industry

- 20.1 Temperature Change
- 20.2 Rain and Snowfall Patterns
- 20.3 Strong Storms
- 20.4 Rising Sea Levels
- 20.5 Actions to Adapt to Climate Change
- 20.6 Why are Flight Delays More Likely in Winter?



## BANGALORE INSTITUTE OF AVIATION AND LOGISTICS

### Syllabus for Graduate Diploma in Aviation – Add-on Course

#### Main Objective:

To impart professional education and training in different aspects of aviation studies at the undergraduate level and provide the opportunities to develop skills needed to take up responsible position at different sectors in aviation industry.

#### Duration:

3years ( 6 semesters) Approximately 210 hours - Average of 35hrs / semester.

#### Teaching and Evaluation:

Class lectures, participative interaction sessions, site visit to places of aviation interests, airports, cargo warehouses, flight trips, exhibition, air shows and industrial visits.

Exams to be conducted at the end of every semester for each paper. Objective type exam of 100 marks .

Expected minimum attendance - 85%.

### FIRST SEMESTER

#### Paper 1 – Aviation Basics

1	<b>History of Aviation</b>
a	Development of civil aviation/air transport in India
b	Global Aviation Industry
c	Growth of civil aviation in India post 2 <sup>nd</sup> world war
d	Air transport nationalization – Air corporation Act 1953
e	Open sky policy of Government of India
f	Emergence of Low Cost Carriers (LOC)
g	Entry of private airlines in India
h	Present aviation scenario in India and growth, competition and future
i	Reasons for recent failures / close down

2	<b>Aviation Organizations and regulations</b>
a	ICAO
	Nationality identification codes
	Bilateral agreements
	Freedoms of air
b	IATA – International schedules , two letter codes
	UFTAA



	FIATA
	DGCA
	BCAS
	CISF
	AAI

Paper 2 – Aviation Geography

1	IATA
a	organization and roles , membership and types
b	IATA - Areas TC 1, 2, 3
c	Basics of geography / Aviation geography
d	Time zone, time calculations, time differences, flying time, flying time calculations Day light savings and saving time
e	IATA – Airport codes
f	IATA – City codes
g	IATA - Alpha Numeric Codes
h	Airline terminology

2	AAI
a	Roles, functions and responsibilities
b	Air Traffic Control – functions and responsibilities

**EXAM**





## SECOND SEMESTER

### Paper 1 – Aviation Fundamentals

Recap of semester 1

<b>1</b>	<b>Aviation Conventions</b>
a	Warsaw conventions
b	Chicago conventions
c	Bermuda conventions

<b>2</b>	<b>Aircraft</b>
a	Types – wide body and narrow body
b	Airplane manufacturers and configurations

<b>3</b>	<b>Basic Aerodrome Infrastructure</b>
a	Runway, Taxiway, Terminal/Apron, Parking bay, airside
b	Terminal building, City side infrastructure, car parking, shops etc
c	Air traffic control, fire fighting
d	Marshalling towing, Push back Aerobridges
e	Fuel bowzer

### Paper 2 – Passenger Handling – Domestic

<b>1</b>	<b>Introduction to airports and airline ground operations</b>
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<b>2</b>	<b>Computer reservations and departure control system</b>
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<b>3</b>	<b>Airport entry formalities, role for CISF baggage screening etc</b>
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<b>4</b>	<b>Passenger check in formalities</b>
a	Baggage labeling, boarding cards, seating, hand baggage regulations, items not permitted as hand baggage, unaccompanied baggage, free baggage, excessive baggage weight measurements, DGR basics

<b>5</b>	<b>Arrival Formalities</b>
a	Disembarkation transfer, baggage retrieved, mishandled baggage, compensation, property irregularity report



**EXAM**

**THIRD SEMESTER**

Paper 1 – Passenger Handling - International

1	Revision and Recap
2.	Departure
a	Travel documents – Passport, Visa, Insurance, health requirement, police requirements
b	International check in formalities
	Immigration, Customs – rules & regulations , Red channel, green channel, foreign exchange prohibited items, Security – Prohibited items, duty free
3.	International Arrival formalities
a	Screening baggage, Immigration, Visa on arrival, customs, duty free purchases, baggage allowance, plant quarantine, DGR, FIM

Paper 2 – Cargo – Domestic - Dispatch

1	Basics of Cargo
a	Airway Bills – consignee, consigner, consignment, booking procedure, packing list, declaration shipper’s letter of instruction, gross weight, volume weight, valuation charges, security clearance, cooling period, screening, cargo manifest, cargo documents on board ( concertina pouch )

Cargo - Domestic - Arrival

1	Off loading, checklist, delivery book entry, sector wise binning, arrival intimation, CCA, DACC
2	Types and nature of cargo
a	General cargo, precious cargo, livestock, human organs, human remains, arms and ammunition, DGR, post office mail, diplomatic mail/cargo,
3	Rates and tariffs
a	GCR, SCR, Class rates, valuation charge, add on charges, surcharge



4 Cargo claims and complaints

EXAM

#### FOURTH SEMESTER

##### Paper 1 – International Cargo

1 Recap of Domestic Cargo

2 Export Cargo

a International airway bill, neutral airway bill, import/export license, purchase order, invoice, packing list, certificate of origin, shipping bill, custodian, customs, bonded warehouse, carting order EDI, warehousing charges and formalities

3 Import cargo

a Cargo arrival notice, delivery order, bill of entry, customs valuation, customs duty, duty draw back

4 Customs Formalities

5 New trends in Export and import procedures and handling ice gate, E- payment, online filing

6 Inland container depot

##### Paper 2 – Reservation and Ticketing

1 GDS – Galileo , Amadeus , Sabre , Abacus

2 Benefits in CRS

a A look back into manual reservations systems / ticketing



3	<b>Ticketing Procedures – PNR</b>
a	OAG , ABC guides , TIM , TIMATIC.
b	Types of Tickets – single, return circle and open jaw
c	Concessions – student, senior citizen, Army, seamen, etc

4	<b>E-Ticketing</b>
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<b>EXAM</b>	
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### FIFTH SEMESTER

#### Paper 1 – Theory of flights

1	<b>How an aircraft flies</b>
a	Forces acting on an aircraft aerodynamic
b	Aircraft Structures
	Structure limitations
	Operational limitations
	Payload, MZFW, MTOW, MLW , RTOW

2	<b>Load and trim – weight and balance</b>
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3	<b>Practical for Trim sheets</b>
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4	<b>Airport Ground Handling</b>
a	Basics of Ground Handling
b	Equipments required for ground handling, step ladder, chocks, GPU, BFL, fire extinguisher, water cart , toilet cart , cooling unit, air starter, high lift, MDL, LDL, fork lift, pallet, containers, dollies and trollies.

#### Paper 2 – Airline Customer Services

1	<b>In flight Services</b>
a	Cabin catering, cabin dressing, safety equipments on board, galley equipments, duties of cabin crew, in flight arrangements



2	<b>Onboard handling of passengers</b>
a	Special passengers, unaccompanied minor, VIP/VVIP, wheel chair, stretcher cases deportee, frequent flyer program, passenger needing special attention.

**EXAM**

**SIXTH SEMESTER**

Paper 1 - Aviation as a carrer

1	<b>Recap for all 5 semester</b>
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2	<b>Customer service orientation</b>
a	Handling difficult passengers and complaints, communication guidelines and asking passengers about security guidelines, aviation security protocols, bomb threats and responses

3	<b>Soft skills required for aviation operations</b>
a	Attitude and challenges, importance of interpersonal skills, team building skills

4	<b>Aviation as a career</b>
a	Interview skills, presentations, making proper CVs, looking for job opportunities

**FINAL EXAM**

