

UNIVERSITY OF MUMBAI

No.UG/ 166 of 2019
Mumbai - 400 032
27th March, 2019

To,
The Principal,
The Bombay Flying Club's
College of Aviation,
Juhu Airport,
S. V. Road,
Vile Parle (West),
Mumbai – 400 056.

Sir,

I am to invite your attention to the Ordinances, Regulations and Syllabus relating to the Diploma Course in Airport Operation and to inform you that the recommendations made by the Ad-hoc Board of Studies in Aviation at its meeting held on 6th February, 2018 have been accepted by the Academic Council at its meeting held on 5th May, 2018 **vide** item No. 4.23 and subsequently approved by the Management Council at its meeting held on 23rd May, 2018 **vide** item No. 7 and that in accordance therewith, in exercise of the powers conferred upon the Management Council under Section 74(4) of the Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017) the Ordinance 6452 & 6453 Regulations 9183 to 9186 and the syllabus as per (CBCS) for the Diploma Course in Airport Operation has been introduced and the same have been brought into force with effect from the academic year **2018-19**, accordingly. (The same is available on the University's website www.mu.ac.in).

ajms
(Dr. Ajay Deshmukh)
REGISTRAR

A.C/4.23/05.05.2018
M.C/07/23.05.2018

No. UG/166 -A of 2019

MUMBAI-400 032

27th March, 2019

Copy forwarded with Compliments for information to:-

- 1) The I/c Dean, Faculty of Science & Technology,
- 2) The Chairman, Ad-hoc Board of Studies in Aviation
- 3) The Director, Board of Examinations and Evaluation,
- 4) The Director, Board of Students Development,
- 5) The Co-ordinator, University Computerization Centre,

ajms
(Dr. Ajay Deshmukh)
REGISTRAR

UNIVERSITY OF MUMBAI



Ordinances, Regulations and Syllabus

Program – Post Graduate Diploma in Airport Operations

**To be introduced from Academic year 2018-2019
as per Credit Based Semester and Grading System**

O. XXXX Title of the Program

PG-Diploma in Airport Operations

R. XXXX Duration

- One year part time divided into two semesters

R. XXXX Intake capacity

- 60 learners

O. XXX Eligibility

Any Graduate from UGC recognized university

or

XII pass and superannuated from Armed Forces in an NCO (Non Commissioned Officer) or higher position

or

Diploma in Engineering (three years duration after 10th standard awarded by Institute, Polytechnic recognized by AICTE or equivalent).

R. XXXX Fee

- Rs./- per semester

Faculty requirement (Visiting)

- Aviation professionals (with a graduate degree) as instructors to teach aviation related courses who have successfully completed five years in supervisory position in related fields
- One MBBS Doctor to conduct First aid classes
- One Instructor to teach safety & emergency procedures and dangerous goods rules

Industry Visits

- Visit to all areas of International Airport, Domestic Airport, VFR (Visual Flight Rules) Airfield and Heliport.
- Visit to a Air Traffic Control Centre

INFRASTRUCTURE

Front / Reception Area	1
Class Rooms (A/C)	1
Computers with Internet Facility, Printer, Scanner & LCD projector	

RXXXX Scheme of Examination

SEM	COURSE CODE	TITLE	
I	USDAO 1.1	INTRODUCTION TO AVIATION INDUSTRY & AIRPORTS	
	USDAO1.2	AERODROME LAYOUT AND AERODROME GROUND AIDS	
	USDAO 1.3	AERODROME TRAFFIC MANAGEMNET	
	USDAO 1.4	AIRSIDE MANAGEMENT	
II	USDAO 2.1	TERMINAL LAYOUT AND RELATED AGENCIES	
	USDAO 2.2	TERMINAL AND CITY SIDE MANAGEMNET	
	USDAO 2.3	AIRPORT CHARGES AND REVENUE	
	USDAO 2.4	AIRPORT REGULATIONS	

Semester	Course	Theory Marks		Practical Internal Marks	Total	Credits
		Internal	Sem End (2 Hours Duration)			
I	USDAO 1.1	40	60		100	2
	USDAO 1.2	40	60		100	2
	USDAO 1.3	40	60		100	2
	USDAO 1.4	40	60		100	2
II	USDAO2.1	40	60		100	2
	USDAO2.2	40	60		100	2
	USDAO2.3	40	60		100	2
	USDAO2.4	40	60		100	2
	USDAOPI	--	--	50	50	2
	USDAOP2	--	--	50	50	2
Total					900	20

Internal Evaluation	Marks
Active Participation	05
Overall Conduct	05
Test/ Seminar/ MCQ	10
One Project / One Case Study/ Assignment	20
Total	40

Semester End Question Paper Pattern for each course:

Question	Unit	Marks	Maximum Marks with option
Q1	I	15	25
Q2	II	15	25
Q3	III	15	25
Q4	I, II, III	15	25

R. 8623 passing standard

- a) Learner shall be awarded Diploma if he/she obtains any one of the grade 'O', 'A+', 'A', 'B+', 'B', 'C', 'D' in each of the course of Semester I and II**
- b) Learner shall be admitted to second semester of the program irrespective of the grades secured in any of the course of the first semester**
- c) Learner shall be allowed to appear for additional examination in theory in the courses where he/she has secured grade 'F'**

Additional examination will be conducted within one month after declaration of the result of semester II

SEMESTER I

COURSE – I INTRODUCTION TO AVIATION INDUSTRY	LECTURE Hours	PRACTICAL Hours
<p>UNIT 1 – INTRODUCTION TO AVIATION INDUSTRY</p> <ol style="list-style-type: none"> 1. Civil aviation in India 2. Infrastructure and related facilities 3. About Ministry of Civil Aviation and DGCA 4. Air Navigation Services 5. Airport Companies in India 6. Airlines in India 7. Corporate jets and charters 8. International Civil Aviation Organisation 	15	
<p><u>Unit II</u> – (A) AIRPORTS</p> <ol style="list-style-type: none"> 1. Introduction to Airports 2. Classification of Airports 3. Basic Airport Layouts 4. Various components of Airports 5. Various organization and their functions at Airports 6. Various modes of Airport Ownerships in India 	15	

COURSE – II AERODROME LAYOUT AND AERODROME GROUND AIDS	LECTURE Duration	PRACTICAL Hours
<p><u>UNIT - I –</u></p> <p><i>Aerodrome Design Manual (Doc 9157)</i></p> <p>Part 1 — <i>Runways</i></p> <p>Part 2 — <i>Taxiways, Aprons and Holding Bays</i></p> <p>Part 3 — <i>Pavements</i></p> <p>Part 4 — <i>Visual Aids</i></p> <p>Part 5 — <i>Electrical Systems</i></p> <p>Part 6 — <i>Frangibility</i></p> <p><i>Aerodrome Reference Code</i></p> <p>Aerodrome data</p> <p>Aeronautical data</p> <p>Aerodrome reference point</p> <p>Aerodrome and runway elevations</p> <p>Aerodrome reference temperature</p> <p>Aerodrome dimensions and related information</p> <p>Strength of pavements</p> <p>Pre-flight altimeter check location</p> <p>Declared distances</p> <p>Condition of the movement area and related facilities</p> <p>Visual approach slope indicator systems</p> <p>Coordination between aeronautical information services and aerodrome authorities</p> <p>Physical characteristics</p> <p>Runways</p> <p>Runway shoulders</p> <p>Runway turn pads</p> <p>Runway strips</p> <p>Runway end safety areas</p> <p>Clearways</p> <p>Stopways</p> <p>Radio altimeter operating area</p> <p>Taxiways</p> <p>Taxiway shoulders .</p> <p>Taxiway strips</p> <p>Holding bays, runway-holding positions, intermediate holding positions and road-holding positions.</p> <p>Aprons</p> <p>Isolated aircraft parking position</p> <p>De-icing/anti-icing facilities</p>	<p>15</p> <p>15</p>	<p>20</p>

<u>Visual aids for navigation</u>	5	5
Indicators and signalling devices		
Wind direction indicator		
Landing direction indicator		
Signalling lamp		
Signal panels and signal area		
<u>5.2 Markings</u>	5	5
General		
Runway designation marking		
Runway centre line marking		
Threshold marking		
5.2.5 Aiming point marking		
Touchdown zone marking		
Runway side stripe marking		
Taxiway centre line marking		
Runway turn pad marking		
Runway-holding position marking		
Intermediate holding position marking		
VOR aerodrome checkpoint marking		
Aircraft stand marking		
Apron safety lines		
Road-holding position marking		
Mandatory instruction marking		
Information marking		
<u>Lights</u>		
General	10	10
Emergency lighting		
Aeronautical beacons		
Approach lighting systems		
Visual approach slope indicator systems		
Circling guidance lights		
Runway lead-in lighting systems		
Runway threshold identification lights		
Runway edge lights		
Runway threshold and wing bar lights		
Runway end lights		
Runway centre line lights		
Runway touchdown zone lights		
Rapid exit taxiway indicator lights		
Stopway lights		
Taxiway centre line lights		
Taxiway edge lights		
Runway turn pad lights		
Stop bars		
Intermediate holding position lights		
De-icing/anti-icing facility exit lights		
Runway guard lights		
Apron floodlighting		
Visual docking guidance system		

<p>Advanced visual docking guidance system Aircraft stand maneuvering guidance lights Road-holding position light.</p> <p><u>Signs</u> General Mandatory instruction signs Information signs VOR aerodrome checkpoint sign Aerodrome identification sign Aircraft stand identification signs Road-holding position sign</p> <p><u>Markers</u> General. Unpaved runway edge markers Stopway edge markers Edge markers for snow-covered runways Taxiway edge markers Taxiway centre line markers Unpaved taxiway edge markers Boundary markers</p> <p><u>Visual aids for denoting obstacles</u> Closed runways and taxiways, or parts thereof Non-load-bearing surfaces Pre-threshold area Unserviceable areas</p> <p><u>Visual aids for denoting restricted use areas</u> Closed runways and taxiways, or parts thereof Non-load-bearing surfaces Pre-threshold area Unserviceable areas</p> <p><u>Electrical systems</u> Electrical power supply systems for air navigation facilities System design Monitoring APPENDIX 1. Colours for aeronautical ground lights, markings, signs and panels General Colours for aeronautical ground lights Colours for markings, signs and panels Aeronautical ground light characteristics APPENDIX 3. Mandatory instruction markings and information markings APPENDIX 4. Requirements concerning design of taxiing guidance signs Aeronautical data quality requirements Location of lights on obstacles . Framework for safety management systems</p> <p>Guidance material supplementary to Annex 14, Volume I 1. Number, siting and orientation of runways A-1 2. Clearways and stopways</p>	<p>5</p> <p>5</p> <p>2</p> <p>3</p> <p>10</p>	<p>10</p>
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<ul style="list-style-type: none"> 3. Calculation of declared distances 4. Slopes on a runway 5. Runway surface evenness 6. Determining and expressing the friction characteristics of snow- and ice-covered paved surfaces 7. Determination of friction characteristics of wet paved runways 8. Strips 9. Runway end safety areas 10. Location of threshold 11. Approach lighting systems 12. Priority of installation of visual approach slope indicator systems 13. Lighting of unserviceable areas 14. Rapid exit taxiway indicator lights 15. Intensity control of approach and runway lights 16. Signal area 17. Rescue and fire fighting services 18. Operators of vehicles 19. The ACN-PCN method of reporting pavement strength 	10	5
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COURSE – III USDAV103 – AERODROME TRAFFIC MANAGEMNET	LECTURE Hours	PRACTICAL Hours
Rules of the Air in Aerodrome Circuit Rules for surface movement Air Traffic services in Apron areas Air Traffic Services in Maneuvering areas Allotment of Parking Bays ACDM ATFM AERODROME METEOROLOGICAL SYSTEMS and Aerodrome Minimas NON VISUAL AERODROME NAVIGATION AIDS (VOR, NDB, ILS, DME	20	10

COURSE – IV AIRSIDE MANAGEMENT	LECTURE Hours	PRACTICAL Hours
UNIT I [Reference: <i>(Airport Services Manual (Doc 9137))</i>]		
Rescue and Fire Fighting Removal of Disabled Aircraft Control of Obstacles Airport Emergency Planning	10	10
Aerodrome emergency planning Rescue and fire fighting Disabled aircraft removal Wildlife strike hazard reduction Apron management service Ground servicing of aircraft Aerodrome vehicle operations Surface movement guidance and control systems Siting of equipment and installations on operational areas Fencing Security lighting Pavement Surface Conditions Airport Operational Services Airport Maintenance Practices	25	20
Bird Control and Reduction		
<u>Aerodrome maintenance</u> General Pavements Runway pavement overlays Visual aids	10	5
TOTAL SEM I	195	100

SEMESTER II

TERMINAL LAYOUT AND VARIOUS AGENCIES WORKING IN A TERMINAL	LECTURE Hours	PRACTICAL Hours
<u>UNIT- I</u> Typical Terminal Building Layouts, including Check-in Areas, Security Hold areas. Agencies in Terminal Building and City Side of Airport: Immigration Security Airlines Baggage Handling Agency Concessionaires Lounges House Keeping Vehicular Traffic Flows at Departure and Arrival Areas Vehicular Parking	30	10

AIRPORT CHARGES AND AERONAUTICAL AND NON AERONAUTICAL REVENUE	LECTURE Hours	PRACTICAL Hours
<p><u>UNIT – II</u></p> <p>ROUTE NAVIGATION FACILITY CHARGES</p> <p>TERMINAL NAVGATION Landing Charges</p> <p>Landing and Parking Charges</p> <p>Non Traffic Revenue Sources and Models Concessionaires, Rentals.</p> <p>Advertisements</p>	20	10

TERMINAL MANAGEMENT	HOURS	HOURS
<p><u>UNIT – III</u></p> <p>Terminal Management Principles</p> <p>Terminal Management Procedures and Processes</p> <p>Passenger Facilitation (Arrivals, Departures, Transit)</p> <p>Airport Upkeep and Cleanliness</p> <p>Beautification of Airports</p> <p>City Side Landscaping</p>	20	10

AIRPORT REGULATIONS, AIRPORT SAFETY AND AIRPORT SECURITY	LECTURE Hours	PRACTICAL Hours
<u>UNIT- IV</u> DGCA CAR, CIRCULARS and ADVISORIES AERORODROME LICENSING SAFETY MANAGEMENT SYTEMS AIRCRAFT ACT AVIATION SECURITY DANGEROUS GOODS HANDLING CONTINGENCY PLANS FOR TERMINAL BUILDINGS AND CITY SIDE AREAS	60	10
GENERAL MANAGEMENT <u>UNIT- V</u> TEAM BUILDING INTERNATIONAL SKILLS COMMUNICATIONAL SKILLS ENHANCING CREATIVITY SAFETY MANAGEMENT SYSTEMS PERSONAL MANAGEMENT MEDICAL EMERGENCIES AND FIRST AID	40 15	10 10
TOTAL SEM II	185	60