

University of Mumbai



No. UG/133 of 2019-20

CIRCULAR:-

Attention of the Principals of the Affiliated Colleges, the Head of the University Departments and Directors of the recognized Institutions in Science & Technology Faculty is invited to this office circular No. UG/138 of 2018-19, dated 3rd January, 2019 relating to the syllabus of Master's Degree/Micro Degree in Data Science.

They are hereby informed that the recommendations made by the Ad-hoc Board of Studies in Computer Science at its meeting held on 28th March, 2019 have been accepted by the Academic Council at its meeting held on 15th April, 2019 vide item No. 4.52 and that in accordance therewith, to M.Sc. Computer Science (Spl. Data Science) students for Sem. II and confirmation of Examination Schedule for the same. (The same is available on the University's website www.mu.ac.in).

(Dr. Ajay Deshmukh)
REGISTRAR

MUMBAI – 400 032
October, 2019

To

The Principals of the affiliated Colleges, the Head of the University Departments and Directors of the recognized Institutions in Science & Technology Faculty. (Circular No. UG/334 of 2017-18 dated 9th January, 2018.)

A.C./4.52/15/04/2019

No. UG/133 -A of 2019

MUMBAI-400 032

30th October, 2019

Copy forwarded with Compliments for information to:-

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

(Dr. Ajay Deshmukh)
REGISTRAR

Department of Computer Science

A.C – 15th April, 2019
Item No. 4.52

ITEMS FOR ACADEMIC COUNCIL

Item 1: Semester II Admission, Examination and Evaluation of MSc CS-DS

Subject	Admission of MSc Computer Science (spl Data Science) students for Semester II and confirmation of Examination schedule for the same.																											
Preamble	<p>In the want of the approvals from various academic bodies to the admission and evaluation process the result of Semester I of the MSc CS-DS students is awaited. The Semester II classes have been started in January 27, 2019; they will get over by May 20, 2019. Examinations of Semester I and II are expected to be scheduled from May 31 to Jun 8, per the schedule given below and are to be conducted the way they were conducted for Semester I</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>May 31</th> <th>Jun 1</th> <th>Jun 2</th> <th>Jun 3</th> <th>Jun 4</th> <th>Jun 5</th> <th>Jun 6</th> <th>Jun 7</th> <th>Jun 8</th> </tr> </thead> <tbody> <tr> <td>Audit</td> <td>101</td> <td>201</td> <td>102</td> <td>202</td> <td>103</td> <td>203</td> <td>104</td> <td>204</td> </tr> <tr> <td>Course</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The evaluation model for the MSc CS-DS examinations is attached herewith. The same may please be approved so that the result could be declared by April 25 and on-line admissions to the Semester II be completed by May 6. The permission may please be granted to complete the admission process of Semester II without following the pre-requisite structure in case the result declaration gets delayed further for any reason.</p>	May 31	Jun 1	Jun 2	Jun 3	Jun 4	Jun 5	Jun 6	Jun 7	Jun 8	Audit	101	201	102	202	103	203	104	204	Course								
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Item for approval	<ol style="list-style-type: none"> 1. The procedure and schedule for the MSc CS-DS examination be approved 2. The evaluation model for the MSc CS-DS examinations be approved and the result of Semester I be processed accordingly. 3. The admissions for Semester II of MSc CS-DS be completed by May 6 generally by following the result; Exemption for the pre-requisites be granted in case the result of Semester I gets delayed beyond April 25. 																											

The evaluation model for MSc CS-DS Programme

Preamble: MSc CS, Specialization in Data Science (MSc CS-DS) Programme was commenced during the academic year 2018-19 under the collaboration with WIA; the programme is aimed at producing high quality data scientists and has been executed in blended MOOC for facilitating working professionals and for allowing scalability. The end semester examination of Semester I was conducted during January 12-18, 2019 by University in on-line, objective-type mode. The nature of the examination being different than the other PG examinations, the details of the question paper model and the evaluation criterion were required to be approved.

The model has been evolved through the rigorous discussions and deliberations happened in the Paper setting and evaluation guidance workshop that was organized on January 6 in coordination with the then Examination authority and was conducted by Professor Prasad, a leading academic in Computational sciences for the last 5 decades. It has further been meticulously seen and refined under the guidance of Professor Pandya, a leading Computer Scientist in formal methods; He is an external expert in the BOS of CS. Inputs of the other BOS members and the Associate Dean of the Science and Technology (as he has been involved in the launching of MSc CS-DS since the conception of the idea) have been incorporated.

Paper pattern: A paper shall consist of the objective type questions of graded difficulties; the students may require to scribble on paper and compute the answer that is to be recorded in the Examination system. The questions of 4 levels are recommended. The first level questions will be of trivial type, a correct answer should be reached if a student is regular in attending classes and consistent in the submission of homework. The second level questions will require a detail study of the subject. The third level questions shall be on advanced concepts in the syllabus and the fourth level questions shall call for practice and research oriented thinking to solve them. They will carry 1, 2, 3 and 4 marks respectively and come in the proportion of 4 : 3 : 2 : 1 in a paper.

The paper of 100 marks is recommended; a student shall attempt it in two and half hours. However the answer-sheets shall be provided to the students for scribbling and solving problems, there is no compulsion of writing the complete solution for each of the questions and hence the duration is half an hour less than our normal 3 hours for a 100 marks paper.

To avoid a chance score, deduction of $1/k$ of the total marks assigned to the question is recommended for a wrong answer to the question that comes with k distractors.

Evaluation pattern: It's a two part procedure to evaluate a pass candidate on a 7 point scale that involves two types of computations: Score to Grade conversion and Grade to Marks conversion. Details are as follows:

Score to Grade conversion:

- i. The lowest 16% scorers in the endsem examination shall be declared F (for Fail) provided their absolute scores in the endsem are no greater than 39%. The students who score 40 or higher percentages in the endsem examination are pass.
- ii. The grades of the pass students are allotted based upon their total score (endsem + internal).
- iii. The grade O shall be granted to the top 2% of the scorers iff their absolute total score (endsem + Internal) is 60 or above.
- iv. Generally the distribution of grades O : A+ : A : B+ : B : C : D : F has been imagined as 2 : 9 : 9 : 16 : 16 : 16 : 16 : 16. The less than expected students falling in the grades F and O will uniformly increase the proportion of students falling in the grades A+ to D.

- v. Started with the allotment of grade O continuing with A+, A and so on, each time the boundary cases are to be taken care such that the students with identical score should be assigned the same grade. A slight variation in the grade distribution due to this adjustment is permissible.

Grade to Marks conversion: $\text{Mark} = \text{LL} + (\text{Score} - \text{MinMarks}) * (\text{UL} - \text{LL} + 1) / (\text{UL} - \text{MinMarks})$ where Score is the actual total score (endsem + internal) of a student; LL and UL are respectively lower and upper bounds of the range which the Grade is valid for. The typical values recommended for this

Programme are given below that is in line with the current grading pattern at PG in Science faculty and generally acceptable to UGC and alike.

GRADE	LL	UL
O	80	100
A+	70	79
A	60	69
B+	55	59
B	50	54
C	45	49
D	40	44
F	0	39

MinMarks are the minimum marks that are required to assign the given Grade (60 for O and 0 for other in our case). The precision up to 2 decimal points is sufficient to differentiate between the ranks of the students with the consecutive Scores.

Following we provide an example to illustrate these conversions.

Seat#	Internal	Endsem	Score	Grade	Mark	Rounded
17	47	22	69	O	84.5	84.5
12	38	16	54	A+	76.83544	76.84
26	23	25	48	A+	76.07595	76.08
48	28	18	46	A+	75.82278	75.82
44	27	16	43	A+	75.44304	75.44
1	36	7	43	A+	75.44304	75.44
8	35	7	42	A	66.08696	66.09
36	27	12	39	A	65.65217	65.65
9	31	8	39	A	65.65217	65.65
41	27	6	33	A	64.78261	64.78
37	27	5	32	A	64.63768	64.64
47	28	4	32	A	64.63768	64.64
10	30	2	32	A	64.63768	64.64
35	13	17	30	B+	57.54237	57.54
45	16	14	30	B+	57.54237	57.54
13	20	10	30	B+	57.54237	57.54
18	23	7	30	B+	57.54237	57.54
27	20	9	29	B+	57.45763	57.46
21	17	11	28	B+	57.37288	57.37
2	19	9	28	B+	57.37288	57.37
3	25	3	28	B+	57.37288	57.37
50	10	16	26	B	52.40741	52.41

29	17	8	25 B	52.31481	52.31
42	12	10	22 B	52.03704	52.04
28	15	7	22 B	52.03704	52.04
46	9	12	21 B	51.94444	51.94
49	9	12	21 B	51.94444	51.94
23	13	4	17 B	51.57407	51.57
30	0	15	15 B	51.38889	51.39
14	3	10	13 C	46.32653	46.33
22	4	9	13 C	46.32653	46.33
4	5	4	9 C	45.91837	45.92
32	0	8	8 C	45.81633	45.82
6	8	0	8 C	45.81633	45.82
24	5	2	7 C	45.71429	45.71
33	3	2	5 C	45.5102	45.51
5	-3	7	4 C	45.40816	45.41
39	-1	5	4 D	40.45455	40.45
25	3	1	4 D	40.45455	40.45
38	-5	7	2 D	40.22727	40.23
43	-1	3	2 D	40.22727	40.23
31	-4	5	1 D	40.11364	40.11
11	23		22 F	22	22
15	0		-1 F	-1	-1
34	0		-1 F	-1	-1
7	-4		-7 F	-7	-7
16	3		0 F	0	0
19	6		3 F	3	3
20	-6		-9 F	-9	-9
40	18		15 F	15	15

Red highlighted are Fall; Green highlighted are boundary records added and hence slightly changing the distribution.

