

Indira Gandhi National Open University
School of Computer & Information Sciences (SOCIS)

Details about MCA (New) Programme Delivery and Evaluation related matters.

The MCA (New) programme delivery and evaluation related matters are given below:

- 1. Software Requirements**
- 2. Theory and Practical Sessions**
- 3. Compulsory practical attendance**
- 4. Evaluation Scheme**
- 5. Academic Counsellors' Mapping**

1 Software Requirements:

The following are the software requirements for the MCA(New) Programme:

SOFTWARE REQUIREMENTS FOR MCA (NEW) PROGRAMME

Course Code		Proposed Software
Semester I		
MCSL-216	DAA and Web Design Lab	For DAA (1) Compilers of C/C++ for Windows or Linux. For Web Design (2) HTML (latest version), CSS (latest version), Java Script, Notepad++
MCSL-217	Software Engineering Lab	(1) Software Cost Estimation : EZEstimate (2) Project Planning : StarTeam (Borland or Micro Focus) / Microsoft Project (3) Analysis: Gatherspace / IBM Rational Requisite Pro / Caliber RM (4) Design: IBM Rational Software Modeler / Together (Borland or Micro Focus) (5) Testing: IBM Rational Functional Tester / Silk Test (Borland or Micro Focus) (6) Web Software Engineering : Microsoft Office Project Web access or IBM Rational Software Architect Designer (extensible UML, BPMN, sketching tools, and

		<p>other graphical tools and notations for visualization, comprehension, modeling, design, development, and deployment of complex software solutions)</p> <p>Note: Any other software whose functionality is equal or more than the above prescribed software can also be used. Please ensure that terms and conditions governing the software license are strictly adhered to</p>
Semester II		
MCSL-222	OOAD and Web Technologies Lab	<p>For Web Technologies(J2EE Programming) : NetBeans IDE for Java EE Developers/ Eclipse IDE for Java EE Developers</p> <p>For OOAD(UML Diagrams) : AgroUML/StarUML/BOUML/Dia/Visual Paradigm/Edraw-Max/Smart Draw/MS-Visio/Rational UML/ IBM Rational Software Architect Designer</p>
MCSL-223	Computer Networks and Data Mining Lab	<p>For Computer Networks :</p> <p>Compilers of C/C++ for Windows or Linux; NS2 or any other open source network simulator.</p> <p>For Data Mining :</p> <p>RapidMiner/R/Python/IBM SPSS Models/WEKA/ Apache Mahout/Knime/ or any other popular open source tool for R programming/ Excel Miner</p>
Semester III		
MCSL-228	AI and Machine Learning Lab	Anaconda (open source software for Python)/ R Studio/ Jupyter Notebooks/ Google Colabs
MCSL-229	Cloud and Data Science Lab	<p>Cloud Computing : KVM in Linux based systems, Oracle VirtualBox in windows based systems, CloudSigma, Open stack, Cloudsim</p> <p>For Data Science :</p> <p>R-Studio or any other open source tool for R</p>

		Programming
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Note : Any other software whose functionality is equal or more than the above prescribed software can also be used. Please ensure that terms and conditions governing the software license are strictly adhered to.

The LSC should use latest versions of the software as far as possible.

All Study Centres / Programme Study Centres should possess the **licensed software**. *Beta* versions of the software should not be entertained. Enough licenses as per number of machines for a 1:1 ratio. The Regional Directors / Asst Regional Directors should visit and cross-check all the study centres whether they possess the licensed software before they give permission as study centres / PSC's for MCA (New) programme. Most of the recommended software is open source software

2 Theory and Practical Sessions

- (i) For a 2-credit theory course there will be 3 counselling sessions of 2 hours duration each.
- (ii) For a 4-credit theory course there will be 6 counselling sessions of 2 hours duration each.
- (iii) There will be 20 practical sessions for every 2 credit lab course, each session being of 3 hours duration.

COUNSELLING SESSIONS FOR MCA (NEW) PROGRAMME

MCA 1st Semester Schedule

Course	Theory/Practical	Credits	No. of Theory Counselling Sessions	Hrs	No. of Practical Counselling Sessions	Hrs
MCS-211	Theory Sessions	4	6	12	-	-
MCS-212	Theory Sessions	4	6	12	-	-
MCS-213	Theory Sessions	4	6	12	-	-
MCS-214	Theory Sessions	2	3	6	-	-
MCS-215	Theory Sessions	2	3	6	-	-
MCSL-216	Practical Sessions	2	-	-	20	60
MCSL-217	Practical Sessions	2	-	-	20	60

MCA 2nd Semester Schedule

Course	Theory/Practical	Credits	No. of Theory Counselling Sessions	Hrs	No. of Practical Counselling Sessions	Hrs
MCS-218	Theory Sessions	4	6	12	-	-
MCS-219	Theory Sessions	4	6	12	-	-

MCS-220	Theory Sessions	4	6	12	-	-
MCS-221	Theory Sessions	4	6	12	-	-
MCSL-222	Practical Sessions	2	-	-	20	60
MCSL-223	Practical Sessions	2	-	-	20	60

MCA 3rd Semester Schedule

Course	Theory/Practical	Credits	No. of Theory Counselling Sessions	Hrs	No. of Practical Counselling Sessions	Hrs
MCS-224	Theory Sessions	4	6	12	-	-
MCS-225	Theory Sessions	4	6	12	-	-
MCS-226	Theory Sessions	4	6	12	-	-
MCS-227	Theory Sessions	4	6	12	-	-
MCSL-228	Practical Sessions	2	-	-	20	60
MCSL-229	Practical Sessions	2	-	-	20	60

MCA 4th Semester Schedule

Course	Theory/Practical	Credits	No. of Theory Counselling Sessions	Hrs	No. of Practical Counselling Sessions	Hrs
MCS-230	Theory Sessions	4	6	12	-	-
MCS-231	Theory Sessions	4	6	12	-	-
MCSP-232	Project	12	4	8	-	-

* Theory counselling sessions is of 2 Hr duration.

* Practical counsessling sessions is of 3 Hr duration.

Semester	No. of Sessions		No. of Hours	
	Theory	Practical	Theory	Practical
I	24	40	48	120
II	24	40	48	120
III	24	40	48	120
IV	12 + 4 sessions for discussions on Project	-	24 + 8	-
TOTAL	84	120	176	360

Total Computer time = Practical time = 120 Sessions = 360 Hours

Note: 75% attendance is compulsory in Practical Lab Sessions.

- (iv) **Counsellor-student ratio:** Theory counseling – 60 students to one counsellor
Practical counseling – 30 students to one counselor

- (v) Student to machine ratio should be 2:1

3 Compulsory Practical Attendance

The following issues regarding the attendance for the practical sessions are to be considered:

- (i) 75% attendance is compulsory in the practical sessions for each lab course. This is a pre-requisite for taking the term-end practical examination in that course.
- (ii) A student who fails to fulfill the 75% attendance requirements for a lab course should be allowed to re-register for the same **course**. The pro-rata fee for a lab course will be changed as per the University norms.
- (iii) Students are required to prepare a separate lab record for each lab course. This lab record will be duly signed by the counselor of practical session after each session.
- (iv) Student's attendance should be recorded course wise at the Learner Support Center (LSCs)

4 Evaluation Scheme

The evaluation for each course covers two aspects:

- (a) Continuous evaluation (b) Term-end examination

The following evaluation scheme for MCA (New) programme is proposed:

Type of Course	Continuous Evaluation (only one assignment)	Term End Examination
Theory	30%	70%
Practical / Lab	30%*	70%**

Each assignment will be worth 100 marks and weightage will be 30%. Theory assignment will consists of 80% marks for assignment questions and 20% marks for viva-voce. A student must appear for viva-voce in order to pass the assignment. The lab course assignment will consist of 40% marks for lab records, 40% marks for assignment questions and 20% marks for viva-voce.

* A student cannot appear for the term-end practical examination of a lab course unless s/he has 75% attendance in the lab / practical course.

Criteria for successfully completing a course:

For the MCA (New) programme, it is proposed that the students should achieve **a minimum of 40% in each component** (both in the assignment as well as in the TEE) and overall 40% in each course to successfully complete the course. This criteria is same as that of present MCA. For project course a

student must obtain 40% marks in Viva and 40% marks in project report evaluation to pass the project course.

Duration of TEE:

The School proposes the term-end examination duration as follows:

Term-end theory examination for 4-credit courses: 3 hrs, 100 marks.

Term-end theory examination for 2-credit courses: 2 hrs, 50 marks.

Term-end practical examination for 2-credit courses: 2 hrs, 50 marks.

The Evaluation scheme is given below:

EVALUATION SCHEME FOR MCA (NEW) PROGRAMME

Seme-ster	Course Code	Course Title	Credits	Continuous Evaluation		Term End Examination		
				Assignment (Weightage – 30%)		Theory OR Practicals* (for Lab courses only) (Weightage – 70%)		
				Max Marks	Min. Marks	Duration	Max. Marks	Min. Marks
I	MCS-211	Design and Analysis of Algorithms	4	100	40	3	100	40
	MCS-212	Discrete Mathematics	4	100	40	3	100	40
	MCS-213	Software Engineering	4	100	40	3	100	40
	MCS-214	Professional Skills and Ethics	2	100	40	2	50	20
	MCS-215	Security and Cyber Laws	2	100	40	2	50	20
	MCSL-216	DAA and Web Design Lab	2	100	40	2	50	20
	MCSL-217	Software Engineering Lab	2	100	40	2	50	20
II	MCS-218	Data Communication and Computer Networks	4	100	40	3	100	40
	MCS-219	Object Oriented Analysis and Design	4	100	40	3	100	40
	MCS-220	Web Technologies	4	100	40	3	100	40
	MCS-221	Data Warehousing and Data Mining	4	100	40	3	100	40
	MCSL-222	OOAD and Web Technologies Lab	2	100	40	2	50	20
	MCSL-223	Computer Networks and Data Mining Lab	2	100	40	3	50	20
	MCS-224	Design and Analysis of Algorithms	4	100	40	3	100	40
III	MCS-225	Accountancy and Financial Management	4	100	40	3	100	40
	MCS-226	Data Science and Big Data	4	100	40	3	100	40
	MCS-227	Cloud Computing and IoT	4	100	40	3	100	40
	MCSL-228	AI and Machine Learning Lab	2	100	40	2	50	20
	MCSL-229	Cloud and Data Science Lab	2	100	40	2	50	20
	MCS-230	Digital Image Processing and Computer Vision	4	100	40	3	100	40
	MCS-231	Mobile Computing	4	100	40	3	100	40
	MCS-232	Project **	12	Report – 150 (Min. 60) and Viva 50 (Min. 20) (Total = 200 marks)				

- * Practical examination will be conducted for the lab courses only. The letter 'L' in the course code represents the lab course. Pass in each and every part in the practical course of Term End Practical Examination is compulsory in order to get it declared successful in the respective course.
- ** The Project consist of 2 components namely project report evaluation and viva. Viva-voce is compulsory and forms part of evaluation. A student in order to be declared successful in the project must secure 40% marks in each component of project evaluation i.e. (i) Project Evaluation and (ii) Viva-voce.

Details of term-end practical examination for lab courses are given below:

Evaluation of Term-end Practical exam for Lab Courses

(Practical questions –80 % and Viva-voce – 20 %)

Course Code	Duration of term-end practical examination (Each section gets equal time)	Term-end practical examination and viva-voce	
		Marks of Section-1	Marks of Section-2
MCSL-216 (2 credits)	2 hours	20 (P) +5(V) = 25 marks	20(P) + 5(V) = 25 marks
MCSL-217 (2 credits)	2 hours	40(P) + 10 (V) = 50 marks	#
MCSL-222 (2 credits)	2 hours	20(P) + 5(V) = 25 marks	20(P) + 5(V) = 25 marks
MCSL-223 (2 credits)	2 hours	20(P) + 5(V) = 25 marks	20(P) + 5(V) = 25 marks
MCSL-228 (2 credits)	2 hours	40(P) + 10 (V) = 50 marks	#
MCSL-229 (2 credits)	2 hours	20(P) + 5(V) = 25 marks	20(P) + 5(V) = 25 marks

P- Problems given in the exam paper, V –viva-voce for that section.

5 Academic Counselors' Mapping:

The counsellor should have relevant teaching experience in the related course. The mapping of some of the present courses to new courses is shown in the following table. For all other course new counsellors may be appointed through the due process of appointment of counsellors.

Academic Counsellor's Mapping				
Counsellor of MCA		Approved For	MCA(New)	
Course Code	Title of the Oourse		Course Code	Title of the Course
MCS-031	Design and Analysis of Algorithms		MCS-211	Design and Analysis of Algorithms
MCS-013 or MCS-033	Discrete Mathematics or Advanced Discrete Mathematics		MCS-212	Discrete mathematics
MCS-034	Software Engineering		MCS-213	Software Engineering
MCS-042	Data Communication and Computer Networks		MCS-218	Data Communication and Computer Networks
MCS-032	Object Oriented Analysis and Design		MCS-219	Object Oriented Analysis and Design
MCS-051	Advanced Internet Technologies		MCS-220	Web Technologies
MCS-035 & MCSL-036	Accountancy and Financial Management & Lab course (Part 3)		MCS-225	Accountancy and Financial Management

* Subject to fulfilment of the minimum eligibility criteria as per the IGNOU Academic Counsellor Norms / UGC ODL regulations 2020. For all the remaning courses of MCA-New , new counsellor's having qualifications as per the UGC regualtions 2020 with relavant experience of teaching the related courses , may be appointed through the due process of appointment of counsellors.
