

MCA Degree in 1 to 5 Years: An Investigation of Private Universities in India

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(Received 10 December 2017; Revised 25 December 2017; Accepted 14 January 2018; Available online 20 January 2018)

Abstract - Computer Application (CA) is a branch of study responsible for the creation of software and applications. It is primarily focused on software technologies and allied areas. Computer Application is available as an academic program and professional area to become industry professionals. The field started during the 1980s and gradually developed in different higher educational institutions in India. Moreover, the branch Computer Application started and still offered in India only. Initially, the branch was started as an alternative field of existing Computer Science. Computer Science is purely concentrated on theoretical areas and mathematical concentration but Computer Application was started with a primary focus on software technologies and development. Initially, Computer Application branch started with Master's program rather Bachelors program. It has started with three years program for Bachelor's degree in any stream rather typical criteria of Bachelor's Degree in concerned/ related/ allied field of study. Computer Application is today offered in different duration with different eligibility criteria. This paper discusses in general, an overview of Computing and Information Technology emphasizes on Computer Application. Paper highlighted the multiple entry options in MCA program with multiple durations in Indian universities with special emphasis to the Private universities.

Keywords: Computer Application, Computing, Information Technology, MCA, Higher Education, Indian Universities, Lateral Entry, PGDCA

I. INTRODUCTION

Computer Application program gained rapid development in recent past mainly after 2000 in the universities and mainly in the Engineering colleges. The MCA program in India is governed by the AICTE (All India Council for Technical Education) and available as 3 (three) years program. The Computer Application program is purely professional in nature and thus it had opened an opportunity from the beginning regarding eligibility as Bachelor's Degree in any stream. However, as per the norms laid down by the AICTE, it is mandatory to study Mathematics as a paper/ course either at 10+2 or Bachelor's Degree level. Computer Application as open for any graduate thus the duration of the program has been increased from normal 2 years to 3 years. Other related programs viz. Computer Science, Information Technology normally requires same or allied branches and in some cases Bachelors in relevant field viz. Mathematics. But, in recent past, the duration of

the program for the related and concerned subjects has been changed to 2 years program with Lateral Entry scheme [1], [5].

Apart from these the MCA program in recent years also started as an Integrated program (i.e. integrated MCA) where combined BCA and MCA is offered with duration of 5 (five) years. Interestingly apart from these programs in recent past MCA program also available with 4 years program as well based on UGC's provision of 20% reduction in integrated program duration compared to its equivalent UG+PG program duration. Significantly 1 (One) year program is also available for MSc Computer science/Information technology background aspirants. This way MCA program is now possible to receive as 1 year, 2 years, 3 years, 4 years and 5 years of study! This paper provided an interesting observation and in-depth research on this aspect with special reference to Indian private universities.

II. OBJECTIVES

The paper is contextual, conceptual and primary in nature i.e. study based and also responsible for various affairs such as:

1. To learn about the branch of Computer Application including its origin, nature, and role in a brief manner.
2. To get the knowledge about Computer Application with reference to the educational programs available in the field.
3. To learn about the MCA program in general with reference to its changing nature of eligibility, duration, and concentration.
4. To dig out the knowledge on MCA in respect of new changing eligibility criteria, duration etc.
5. To learn about the Higher Education System in India in a brief manner with reference to the MCA program in private universities.

III. METHODOLOGY

A method is important for any kind of research and development affairs. As far as this research work is

concerned review methods have been adopted and thus several pieces of literatures have been analyzed and reported. Web review is also handled in a deep manner for this conceptual study to learn about the MCA program in Indian Universities with special reference to the private universities in India. Hence the norms and details of AICTE are studied and analyzed properly. To reach the actual statistics, UGC's (Govt. of India) website is analyzed and reported in this paper. The core URL is used as <https://www.ugc.ac.in/privatuniversity.aspx> to get actual and current statistics. However apart from these, official website of MHRD is also been analyzed and reported. The study conducted between the times of September, 2017 to October, 2017.

A. Computing and IT as a Discipline

Computing and Information Technology is one of the broad fields of study in Applied Science domain. It is about the study of Computing and Information affairs ranging from collection, selection, organization, processing, management, and dissemination of information. Initially, only Computer Science was in the field for the dealing of the core of computing ranging from design, development, and evaluation of computer systems and computer hardware [2], [4], [6].

Information Technology is an applied science domain dealing with information processing and management with core support from various technologies viz. Networking Technology, Database Technology, Web Technology, Multimedia Technology etc. Information Science is another branch of study responsible and involved with information affairs and thus uses several technologies (i.e. IT Components). Regarding the field Computer Application, it is worthy to note that it is mainly available in India and deals with the Software Technologies and mainly concentrated on the application of computing and software for the diverse field. Hence Computer Application is closely associated with the field Software Engineering.

B. Computer Application vs. MCA

The Branch Computer Application was started in India in the 1980s and gained much popularity from 1995. Instead of Bachelor degree initially, Master's program was started with the degree of MCA. Gradually other degree programs i.e. BCA (Bachelor of Computer Application) since the 1990s. In between many other universities have started another Post Graduate Diploma program called PGDCA (Post Graduate Diploma in Computer Application). The main attraction of Computer Application branch is that nationally (as per the norms laid down by the AICTE)

students from other than Computing/ Information Technology background can join the program [3], [7], [8].

However, in some universities at-least, a paper/ course on Mathematics is required at 10+2 or Bachelor's degree level for pursuing MCA program. Although, students who have studied mathematics up to 10+2 can directly enter into the program but as far as Bachelor's degree is concerned most of the universities ask 10+2 with Computer Science or allied subject as a paper. Even in some universities, such norms have also been changed and any students (last qualification i.e. 10+2) can join the program. Regarding another program of Computer Application i.e.

PGDCA also the eligibility criteria is Bachelor's Degree in any stream and there is no condition on studying Mathematics at 10+2 or Bachelor's Degree. Hence the norms set regarding most of the Computer Application programs (BCA & PGDCA) are for the students from diverse background but for MCA program mathematics is required in Engineering Colleges as per the norms laid down by the AICTE. In a recent move, many private universities have offered Bachelor's degree in any stream without any condition of Mathematics paper. This move was taken as till now offering MCA is completely depends on universities and apart from degree awarding bodies all educational institutions under AICTE [3], [9], [10].

C. Common MCA Programs

Computer Application program in Masters Level i.e. MCA is under the purview of AICTE and the program is offered in a large number of higher educational institutions in India. Most of these are universities. India holds a large number of higher educational institutions i.e. about 40,000. Importantly among these about 800 degree awarding bodies i.e. universities of different kinds- Central University, State University, Private University, and Deemed to be Universities.

As far as private universities are concerned the number touches 279 (as on October, 2017) and in most of these universities MCA program is offered (A details on private universities is listed in Table: I). It is worthy to mention that as per the study is undertaken it is noticed that a majority of private universities offering MCA program as their own without AICTE approval (as per the status of the university). A common MCA program comes with Three (3) years duration as it is open for any graduate. But condition on mathematics as a paper at 10+2 or Bachelor's degree is mandatory. Importantly in engineering colleges and other educational institutes where the majority of MCA program is offered the intake is about 1 lakh.

TABLE I PRIVATE UNIVERSITIES IN INDIA: AN OVERVIEW

Serial No.	States	No. of Universities
1	Arunachal Pradesh	7
2	Assam	5
3	Bihar	2
4	Chhattisgarh	9
5	Gujarat	30
6	Haryana	20
7	Himachal Pradesh	17
8	Jharkhand	7
9	Karnataka	14
10	Meghalaya	8
11	Mizoram	1
12	Madhya Pradesh	24
13	Maharashtra	9
14	Manipur	1
15	Nagaland	3
16	Odisha	4
17	Punjab	15
18	Rajasthan	46
19	Sikkim	5
20	Tripura	1
21	Uttar Pradesh	29
22	Uttrakhand	13
23	West Bengal	9
Grand Total		279

However, among the in-house MCA program at the universities, a great sharing of intake and programs offered by the MCA is from private universities [3], [6], [7].

Importantly many universities have changed the mandatory paper from Mathematics to Computer related paper. As in recent years a large number of universities have started computing/ IT related papers at Bachelors' degree. It is important to note that the duration of the program is 3 Years in generally due to audience of non-computing graduate. Table: II depict the intake of MCA in AICTE approved institutions and universities. A majority of this intake is 3 Years MCA program (the common and popular MCA program).

A large of private universities as per this study offers the 3 Year MCA Program i.e. total 130 Programs in different states in India.

TABLE II MCA PROGRAM INTAKE UNDER AICTE APPROVED INSTITUTIONS

Year	MCA
2008-09	73995
2009-10	78293
2010-11	87216
2011-12	92216
2012-13	100700
2013-14	119713
2014-15	109925
2015-16	103048
2016-17	94159
2017-18	85104

However a majority of Private Universities now also switched to different duration based MCA program. This is in offer keeping in mind the norms prescribed by the UGC (i.e. at least 5 years of university/ post 10+2 Education) or simply after completion of seventeen years of education for the award of a Master's Degree.

For example a good number of Private Universities now switched to Integrated 5 Years of MCA program which is offered after 10+2 Exams. Significantly the same is also prescribed by the AICTE but condition of Mathematics as a paper at 10+2 is mandatory. Whereas in most of the Private Universities (as it is not mandatory for them under AICTE), the condition of the paper of Mathematics is relaxed and as a substitute Computer Application/ Allied Paper has been added. Even in some of the universities norms of Mathematics/ Computer Application at 10+2 is fully relaxed as in their model of MCA such coursework offered additionally in the beginning of the semester. As per the study 31 Universities now offer Integrated 5 Years MCA Program. Where Rajasthan hold first position with 9 Private Universities offering the program and subsequently 2nd position goes to Gujarat with 6 Five Years Integrated MCA Program. A detailed list on this has been provided in table 3.

However as per the norms laid down by the UGC there is a relaxation (up to 20%) in offering any Integrated program in duration/ program length and thus two universities have started 4 Year Integrated MCA Program (with additional one year industry internship) and this is open to all 10+2 irrespective of their branch of study. Even the program is open to the candidates who don't studied Mathematics/ Computing related papers at 10+2.

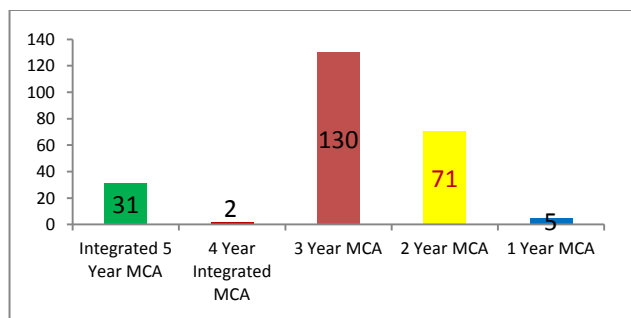


Fig: 1 Distribution of different duration based MCA Program in Private Universities in India

Apart from these MCA Programs, another move by the AICTE is that 2 Years MCA Program for the Graduates of Computing and allied branches (i.e. BCA/ BSc-IT/BSc-

CS/BSc-Related fields). However in Private Universities the norms are relaxed more; for example a large number of private universities allow PGDCA holders as equivalent of Bachelors in Computing and allied field and thus they also become direct entry of 2nd Year (in 3 Years MCA Program) and they can pursue 2 Years MCA as well irrespective of background in regular mode of study. Within private university circle, this trend has been increased and 71 Two Years MCA Program is on offer from the private universities. In this category, Uttar Pradesh ranked first with 13 institutions offering. The state Rajasthan holds the second position with 12 programs on offer; while Punjab holds third position with 7 Two Years MCA program. Table III herewith depicted in details of private universities offering multiple duration MCA programs.

TABLE III MCA PROGRAMS AND DIFFERENT DURATION IN PRIVATE UNIVERSITIES

Universities with MCA programs in different duration						
Sl. No.	States	5 Year MCA Programs	4 Year MCA Programs	3 Year MCA Programs	2 Year MCA Programs	1 Year MCA Programs
1	Arunachal Pradesh	1	Nil	5	2	2
2	Assam	3	Nil	2	1	Nil
3	Bihar	Nil	Nil	1	Nil	Nil
4	Chhattisgarh	1	Nil	5	2	1
5	Gujarat	6	Nil	9	8	Nil
6	Haryana	2	Nil	8	4	Nil
7	Himachal Pradesh	Nil	Nil	8	4	Nil
8	Jharkhand	Nil	Nil	5	3	Nil
9	Karnataka	Nil	1 (Srinivas University)	4	2	Nil
10	Meghalaya	1	Nil	3	2	1
11	Mizoram	Nil	Nil	Nil	Nil	Nil
12	Madhya Pradesh	2	Nil	9	5	Nil
13	Maharashtra	Nil	Nil	3	Nil	Nil
14	Manipur	Nil	Nil	1	Nil	Nil
15	Nagaland	Nil	Nil	1	Nil	Nil
16	Odisha	Nil	Nil	Nil	Nil	Nil
17	Punjab	2	1 (CT University)	11	7	Nil
18	Rajasthan	9	Nil	21	12	1
19	Sikkim	Nil	Nil	3	1	Nil
20	Tripura	1	Nil	Nil	Nil	Nil
21	Uttar Pradesh	1	Nil	18	13	Nil
22	Uttarakhand	Nil	Nil	7	4	Nil
23	West Bengal	2	Nil	6	1	Nil
Total		31	2	130	71	5

In a significant move few universities started another 1 Year MCA program with Lateral Entry Scheme. Under this scheme a regular degree on MCA is offered in just one year.

This is offered only to the holders of MSc in relevant field of study (i.e. Computer Science/ Information Technology/ Computer Application/ Other related and allied subjects).

Means it is offered as 5 (five) Years of existing University education with 1 (one) Year of MCA program. Hence exiting MSc in relevant fields is treated as already gained credit in this scheme. Thus in this scheme, MCA is offered after 6 Years of university education. Till this it is only offered in Private Universities in India and not a single universities (including Central, State, and Deemed to be) offer this type of 1 Year MCA Program with the scheme of Lateral Entry in regular mode of study. Details of such universities are offered in Table IV.

However, some of the universities offer one (1) year MCA program in distance mode of study for the MSc degree holders in related fields. It is important to note that such one year MCA program not yet offered in any universities located in Sothern part of India. As already discussed about 5 Years Integrated MCA Program the details on this including university name (state wise) is listed in Table V.

TABLE IV ONE YEAR MCA PROGRAM IN PRIVATE UNIVERSITIES IN INDIA

1 Year MCA	
Sl. No.	Universities
Arunachal Pradesh	
1	Himalayan University
2	Arunachal University of Studies
Chhattishgarh	
3	Kalinga University, Raipur
Meghalaya	
4	Martin Luther Christian University
Rajasthan	
5	OPJS University, Churu

TABLE V FIVE YEAR INTEGRATED MCA PROGRAM IN PRIVATE UNIVERSITIES IN INDIA

Integrated 5 Year MCA	
Sl. No.	Universities
Arunachal Pradesh	
1	Arunachal University of Studies
Assam	
2	Assam Don Bosco University
3	Assam Down Town University
4	The Assam Kaziranga University
Chhattishgarh	
5	Amity University Raipur
Gujarat	
6	Ahmadabad University
7	Ganpat University
8	Indus University
9	Parul University

10	Sankalchand Patel University
11	UKA Tarsadia University
Haryana	
12	Amity University, Gurgaon
13	Maharashi Markandeshwar University
Meghalaya	
14	ICFAI University
Madhyapradesh	
15	Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
16	Techno Global University, Vidisha
Punjab	
17	Chitkara University, Patiala
18	Lovely Professional University
Rajasthan	
19	Career Point University, Kota
20	Jagannath University
21	Jayoti Vidyapeeth Women's University
22	Jodhpur National University
23	Mewar University
24	NIMS University
25	Pratap University
26	Singhania University
27	University of Engineering & Management
Tripura	
28	ICFAI University
Uttar Pradesh	
29	Galgotias University
West Bengal	
30	Seacom Skills University
31	Techno India University

In this mode and duration of MCA program is offered in Pan India basis, even in the state of West Bengal and North Eastern Part of India and is available in the State of West Bengal, Assam, Meghalaya, Tripura, Arunachal Pradesh etc.

Regarding another pattern of MCA Program i.e. 4 Years Integrated MCA Program with one year additional industry internship (may be paid), it is offered only in two Private Universities in India. And among these two, one is from Northern India and another is from Southern India. These two universities are from Punjab and Karnataka. Table VI is depicted in details about the 4 (four) year integrated MCA program. Importantly these two universities allow students (at 10+2) from diverse background even without the requirement of Mathematics or even Computer Application/ Related Paper at 10+2.

TABLE VI FOUR YEAR INTEGRATED MCA PROGRAM IN PRIVATE UNIVERSITIES IN INDIA

Integrated 4 Year MCA	
Sl. No.	Universities
1	Srinivas University, Mangalore
2	CT University, Ludhiana

It is worthy to mention that apart from a significant move on offering 4 Years MCA Program and opportunities to 10+2 without related subjects, Srinivas University, Mangalore has taken another interest of offering MCA with new age concentration and specialization. Here MCA program is offered with the Concentration on Cloud Computing and Big Data! And significantly both the areas these days are valuable and providing ample opportunities. Hence it is deal of less duration and new age job opportunities as well! In this way universities are offering One Year MCA, Two Years MCA, Three Years MCA, Four Years MCA and Five Years MCA under the traditional scheme, Lateral Entry Scheme and Integrated Scheme of study.

IV. SUGGESTIONS AND FUTURE WORK

The educational programs internationally changing rapidly in terms of duration of the program, model of content delivery, evaluation, specializations, and double majors etc. As far as MCA degree is concerned in Private Universities the following may be possible to care of:

1. It is essential to enhance the 4 Years Integrated MCA Programs in other private universities including State and other types of universities.
2. PGDCA in many private universities considered as the equivalent of BCA program and thus direct second-year Lateral Entry is permitted in MCA programs. It is thus necessary to introduce 2 Years MCA (Lateral Entry) opportunities in other universities and the core stakeholders of MCA colleges under AICTE.
3. It is important and urgent that MCA program should be much more industry centric and specialization may be offered in diverse areas of IT and Computing.
4. It is important that universities should start MCA program in different duration with a good number of credit transfer opportunities or Lateral Entry schemes.
5. MCA program in one year may also be offered in other universities and AICTE approved institutions for the MSc in Computing related degree holders; as they already hold a good amount of Coursework.

V. CONCLUSION

Computing branch is most interdisciplinary in today's age. There are many subjects available in the field which includes Computer Science, Information Technology, Information Systems, Information Science etc. worldwide. In India, first two subjects are common and available and apart from these most popular domains in Science field is Computer Application. Though Computer Application was

started in India and still available in India as Science platform only. More clearly Computer Application field is available BCA, MCA and BSc-CA, MSc-CA degree. It is still not available as B.Tech. or M.Tech. level/ program. Credit System is very much popular internationally for more educational transparencies. The Credit Transfer System is also a hot topic in International Education. As far as India is concerned credit transfer system is gaining popularity in recent past. Though apart from the Credit Transfer Systems another scheme alternatively popularized in India i.e. Lateral Entry, the 2 Years MCA and 1 Year MCA are the significant examples of Lateral Entry Opportunity. Importantly, integrated program is also gaining in recent past. But all these whether Integrated Degree or Lateral Entry based Degree are mainly offered in the Private universities probably due to their autonomy to innovate and are very limited in private engineering colleges due to their constraints to follow regulations of affiliating universities and AICTE. But for solid development of educational systems in India, we need to design the programs as per the need of students, industry etc. To reach a status of knowledge economy we need to develop the educational programs at par international level. Hence at this stage, all type of universities and institutions are essential to enter multiple entry and exit based programs!

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