

University of Maryland-AMRITA

MS in Computer Science dual degree at Amrita University, India

In the last several months, University of Maryland, College Park and Amrita University have been actively discussing a world-class master's degree program in computer science targeted at working professionals in India. A preliminary exploration in Bangalore has indicated tremendous interest from both high tech industry and government research labs. A program has been formulated, with UMD offering the Master of Science degree at the Amrita University campus in India. Students will complete the requirements of the degree over a span of about 2 years.

The confidence in such a program stems from a very successful degree offering in IT Enabled Services (ITES) that Amrita has done with University at Buffalo, SUNY, New York, over the last 3 years, with the first cohort of 55 students graduating in February 2009, and the second cohort of 90 students having commenced in July 2009. This program has received high acclaim from Dr. R. Chidambaram, the principal scientific advisor to the Prime Minister of India, as well as heads of key governmental agencies. The IT industry has also received the program extremely well.

Building on this success, we feel that the MS program by UMD at Amrita University will also be very successful, particularly given the heightened interest today in computer science.

The computer science program is planned to be offered as an MS degree. The program will require a total of 30 credit hours from about ten courses, meeting the basic requirements for Master's degree from the University of Maryland. Each course will be taught by a UMD faculty member, adjunct faculty or lecturers, or outside experts drawn from industry and approved by UMD. The Government of India will be providing access to the high speed National Knowledge Network in order to facilitate the conduct of some of the courses over the internet as well. The UMD faculty will visit India during the summer and winter breaks to teach some of the courses, with the duration of each course being 2-4 consecutive weekends. It is likely that majority of the on-site courses will be conducted during the summer as this will be the period when most of the US faculty will be available. Faculty will be given an honorarium, in addition to travel, accommodation, and meals. Participating faculty will also get opportunities to make contacts for research and consulting.

This program has the potential to be the most significant follow up to the original MoU signed between UMD and Amrita University in December 2005 during the Prime Minister of India's visit to the US. It is also in perfect alignment with UMD's major push towards internationalization.

Other Partners

1. Government of India – Dr R. Chidambaram, Principal Scientific Advisor to Government of India: provide access to the National Knowledge Network
2. Department of Information Technology: Dr Ajay Gupta, Special Secretary: provide wide publicity and visibility to the program across India

Background about University of Maryland, College Park

The **University of Maryland, College Park** (also referred to as **UMD**), is a top ranked public research university located in the city of [College Park](#) in [Prince George's County, Maryland](#), just outside [Washington, D.C.](#) Founded in 1856, the University of Maryland is the flagship institution of the [University System of Maryland](#). With a fall 2010 enrollment of more than 37,000 students, Maryland is the largest university in the state and the largest in the [Washington Metropolitan Area](#).

Amrita University (www.amrita.edu), headquartered in Coimbatore, India, is a multi-campus, multi-disciplinary university with over 15,000 students and 1600 faculty members. The University offers over 100 degree programs (including doctoral degrees) in disciplines spanning Engineering, Medicine and Healthcare, Business and Management, Arts and Science, Communication, Education, etc. Amrita also has advanced research centers in areas such as Wireless Sensor Networks, E-Learning, Cybersecurity, Computational Engineering, Telemedicine, Biotechnology, Nanotechnology, and Molecular Medicine, many of which are funded from national and international funding agencies. India's accreditation agency, the National Assessment and Accreditation Council [NAAC], recently awarded its highest grade "A" to Amrita.

In 2005, during the visit of India's Prime Minister to the United States, Amrita took the lead in initiating an Indo-US Inter-University Collaborative Initiative in Higher Education & Research with 20 eminent US universities, including Berkeley, Harvard, Princeton, and Yale (www.amrita.edu/indo-us). Again in 2006, Amrita initiated the University of California [UC]-India broad research agreement for Science & Technology. In these initiatives, Amrita led a consortium of eminent Indian universities that included IIT Kanpur and the Indian Institute of Science.

In a recent evaluation by the Ministry of Human Resource Development, Amrita University was one of the few universities in India to be graded as an "A" grade institution which has met all the required standards set by the government.

Amrita is committed to academic and research excellence with a strong societal focus, under the guidance of its Chancellor, Sri Mata Amritanandamayi Devi (Amma), one of the most inspiring humanitarian leaders of the world today.

Program Description

The Master of Science in Computer Science consists of 30 credits and a scholarly paper. Exams in some of the courses also serve as Master's Comprehensive exam which a student must pass. The courses will be taught by UMD faculty or reputed external researchers/practitioners approved by UMD. Some of the courses will be delivered in person and the remainder of them live via high speed Internet, with the Government of India providing Amrita and UMD access to the high speed National Knowledge Network to enable the multimedia delivery of courses. Each course will have standard University of Maryland format and presentation. Some, in person courses can be taught during the summer as this will be period when the UMD faculty will be available. Amrita University will deliver 6 additional courses, and recognize 6 of UMD courses towards requirements for award of a MS degree from Amrita University.

Impact on Existing Programs

The UMD/AMRITA program is likely to have a positive impact on existing programs: (a) faculty will be enriched through interaction with the fast growing ICT Industry in India; (b) some of the students in the MS program may decide to come to UMD for a PhD; and (c) the MS will be a source of extra revenue to UMD. Computer Science faculty will teach during the summer and winter breaks, since each course can be completed in 4 weekends. Hence, there is no adverse impact on their academic year teaching schedule.

Advising and Administration

AMRITA University will handle the day-to-day administration of the MS program. UMD and AMRITA together will be responsible for all academic matters, such as evaluation of student credentials and admission to the program; selection and approval of faculty; provision of curricula; student advising; grading and transcripts; and conferral of degrees. Some level of administrative support is needed at UMD in order to maintain student records and track progress.

Program Support

The UMD program will follow a traditional format, with each course consisting of lectures, labs, assignments, and exams as needed. Students will be provided with books and study materials required for each course, and will have access to UMD's digital library. Each course will be accompanied by a course website where additional materials will be maintained. These courses will be delivered by UMD faculty, or reputed external researchers/practitioners approved by UMD as adjunct faculty. It is expected that most of the courses will be delivered using the Internet. Some of the courses will be delivered at the campus of AMRITA University on site. For them the UMD faculty will travel to India and stay for a 2-4 weeks period and teach their courses for the courses to be taught in person.

Student Information

Students enrolled in the MS program are required to have a bachelor's degree from an accredited undergraduate institution and meet the English language proficiency requirements of UMD. The program is targeted at working professionals from the ICT industry, and it is customary for their employers to provide tuition support – typically, the student pays 50% of the tuition and the employer the remaining 50%. No financial aid or tuition support need be provided by UMD.

Facilities

As noted earlier, several of the courses will require students to carry out software as well as hardware projects. AMRITA University will set up a special Systems Laboratory, with capacity for 100 students, at their campus.

Academic Quality Assurance

The graduate program will be reviewed at regular intervals. The proposed Dual Degree MS program will meet all academic standards, internal as well as external.

Program Start Date

The program has an urgent market necessity and huge potential for immediate impact on the industry as well as computer science education and research in India; and hence best effort will be made to start them by July 2012 for a 2012-2013 academic year.

Working Committee

The Working Committee will set the goals and broad directions of this collaborative agreement and will look in to the execution of the various activities.

Suggested members of the Working Committee (subject to modification/expansion with mutual consultation):

University of Maryland

Dr. Ashok Agrawala, Professor, Computer Science

Dr. Larry Davis – Chair, Computer Science.

Amrita University

Dr. P. Venkat Rangan – Vice Chancellor, Amrita University

Dr. Ramachandra Kaimal – Chairman, Computer Science Department

Dr. Maneesha V. Ramesh, Chairperson, Amrita Center for International Programs & Head, WNA Centre

Dr. Krishnashree Achuthan, Co-Chair, Amrita Center for International Programs & Head, Amrita TBI

Prof. P Manoj – Co-Chair, Amrita Center for International Programs

Terms of Partnership

This agreement shall take effect for a period of five years from the date of signing, extendable by mutual consent.

ADDENDUM 1: Suggested Business Model for MS – Computer Science							
BUDGET FOR 2012 Amrita UMD Dual Degree MS- BATCH							
Number of Students						50	
Tution Fee per Students						\$15,000	
GROSS REVENUE						\$750,000	
COSTS					TOTAL		
ITEM	UMD+AMRITA	UMD	AMRITA	RATE	UMD	AMRITA	COMMENTS
UMD Faculty Compensation		12		\$8,000	\$96,000		12 Courses @ \$8000/Course
UMD Faculty Travel		12		\$3,500	\$42,000		12 Faculty @ \$3500/Faculty
Amrita Faculty Compensation		6		\$4,000		\$24,000	6 courses @ \$4000/Course
All Faculty Lodging & Board		12		\$2,000		\$24,000	\$2000 per month for 12 months
Car Rental	24			\$1,500		\$36,000	\$1500 per month for 24 months
Launch						\$15,000	
Marketing						\$15,000	
Administrative Support (UMD)		24		\$2,000	\$48,000		UMD Administrative Support
Amrita Administrative Support			24	\$1000		\$24,000	Program Coordinator at \$750 per month & Secretary at \$250 per month for 24 months
Multimedia Content Capture, Creation & Distribution			24	\$1000		\$24,000	2 Content Developers at USD 500 per month for 24 months
One full Teaching Assistant at Amrita			24	\$1000		\$24,000	\$1000 per month for 24 months
Office Supplies, Incidentals & Expenses			24	\$500		\$12,000	\$500 per month for 24 months
Computer Systems Administration			24	\$2000		\$ 48,000	\$ 2000 per month
Facilities (Including Laboratories)			24	\$5,000		\$120,000	Infrastructure (\$5000 per month)
TOTAL					\$186,000	\$366,000	
ALL TOTAL						\$552,000	
SURPLUS			\$198,000	To be shared			

Note: Electronic delivery of some of the courses will reduce the faculty compensation to \$4000 per course.