

# Mandatory Disclosure

AICTE File No. : F.No.:PON-01/MCP-CS/97  
Date & Period of last approval : 25<sup>th</sup> June 2021 (for MCA only)

NAAC Accreditation Status	
Accredited	Re-accredited with "A" Grade

- Name of the Institution** : POPE JOHN PAUL II COLLEGE OF EDUCATION

Address of the Institution : REDDIARPALAYAM  
City & Pin Code : PONDICHERRY – 605 010  
State / UT : PUDUCHERRY  
Longitude & Latitude : 11°59'N, 79°50'E  
Phone number with STD code : 0413 – 2292121, 122  
FAX number with STD code : 0413 - 2291063  
Email : popejohnpaulcollege@yahoo.com  
Website : www.popejohnpaulcollege.org  
Nearest Railway Station(dist in Km) : 5kms  
Nearest Airport (dist in Km) : 120 kms Chennai Airport
- Name of the Society** : LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE DE PONDICHERRY

Address of the organization : Archbishop's House,  
: Mission Street,  
: Pondicherry

Registered with : Pondicherry Registrar of Companies  
Registration date : 43 of 1973  
Website of the organization : www.pondyarchdiocese.org.in
- Name of the Director** : Dr.(Mrs.) S.Antoinette Aroul Jayanthi

Exact Designation : Director cum Associate Professor

Phone number with STD code : 0413 - 2273291  
FAX number with STD code : 0413 - 2291063  
Email : jayanthijames11@gmail.com
- Name of the affiliating University** : Pondicherry University

Address : Kalapet,  
: Pondicherry – 605 014

Website : <http://www.pondiuni.edu.in>

5. Governance

:

• **Members of the Board (2020-2021)**

S.NO	NAME	DESIGNATION
1	The Most Rev.Dr.Peter Abir Anthonyamy Apostolic Administrator, Archdiocese of Pondicherry and Cuddalore	Chairperson
2	Very Rev.Fr.A. Arulanandam Delegate of the Apostolic Administrator	Member
3	Rev. Fr. J.M.Gregory Louis Joseph, Procurator	Member
4	Very Rev.Fr.A. Louis Anjali Ashram, Mysore	Member
5	Rev.Fr.R.Joseph Raj Secretary, Archdiocesan Board of Education	Member
6	Rev.Fr.M.Swaminathan Secretary, PJP II College of Education	Member Secretary
7	Dr.R.John Louis Manoharan Principal, PJP II College of Education	Member
8	Dr.A.Subramanyan Raju Professor,Pondicherry University	Member (University Nominee)
9	Dr.G.Vasanthi Professor,Pondicherry University	Member (University Nominee)
10	Rev.Fr.C.Don Bosco, Secretary, BC., MBC Commission	Member
11	Rev.Fr.P.Arockianathan Parish Priest,St.Andrew's Church	Member
12	Rev.Fr. A.I. Philomindoss Director, St.Xavier's Pastoral Centre and Communication Centre	Member
13	Rev.Fr.A.Arputharaj Secretary SC/ST Commission	Member
14	Mr. John Claude Pompei Mariadassou Law Secretary to Government (Retired)	Member
15	Mrs.Ida Xavier Associate Professor PJP II College of Education	Member

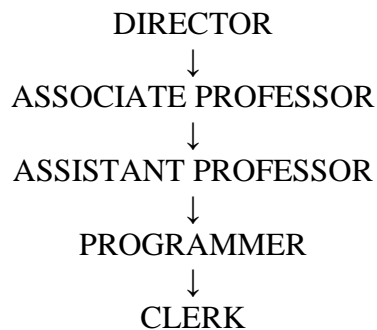
• **Members of Academic Advisory Body** :

S.NO	NAME	DESIGNATION
1	Rev.Fr.M.Swaminathan Secretary, Pope John Paul II College of Education	Chairperson
2	Dr.R.John Louis Manoharan Principal, Pope John Paul II College of Education	Member
3	Dr.(Mrs.) S.Antoinette Aroul Jayanthi Director of MCA, Pope John Paul II College of Education	Member
4	Dr. A.M.James Raj, HOD of Computer Applications, Pope John Paul II College of Education	Member
5	Mr. Maury Marie Emmanuel, Associate Professor, Pope John Paul II College of Education	Member
6	Dr. A.Malathi, Associate Professor, Pope John Paul II College of Education	Member
7	Dr. Siva Sathia, HOD of Computer Science, Pondicherry University	Member

- **Frequency of Board meeting** : Once a year.

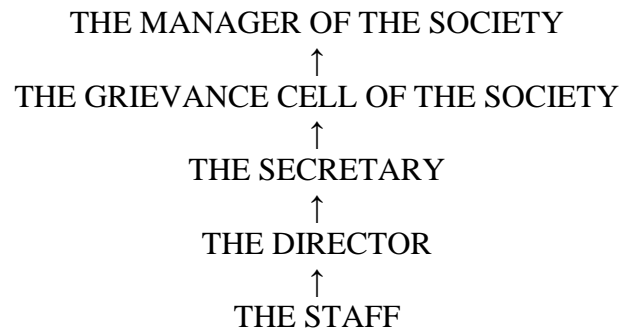
Frequency of Academic Advisory Body : Once a Semester

- **Organisational Chart** :

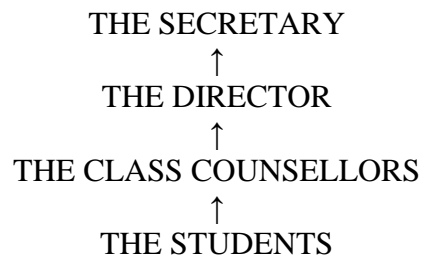


- **Student feedback mechanism on Institutional Governance/faculty Performance** : Feedback is received yearly from the outgoing students
- Grievance redressal mechanism for faculty, staff and students :

(i) **For staff**



(ii) **For students**



26.06.2018

**POPE JOHN PAUL II COLLEGE OF EDUCATION  
PONDICHERRY  
OFFICE ORDER**

**Sub: Establishment of Anti Ragging Committee and Squad**

In compliance of directions of the AICTE, notified Regulation for Prevention and prohibition of ragging in AICTE approved Technical Institutions vide No. 37-3/Legal/AICTE/2009 dated 01.07.2009, The Secretary, Pope John Paul II College of Education, Pondicherry hereby constitutes a standing committee to be known as Anti-Ragging Committee comprising of the following:

- |  |                  |
|--|------------------|
| 1) Rev. Fr. Dr. M. Swaminathan, Secretary, PJP, Pondicherry  | Chairman         |
| 2) Dr. John Louis Manoharan, Principal, PJP, Pondicherry   | Convenor         |
| 3) Dr.S.Antoinette Aroul Jayanthi, Director (MCA), PJP, Pondicherry  | Member           |
| 4) Civil Administration<br>Mrs. J. Marie Anna Dayavady, Advocate and Notary Public, Pondicherry  | Member           |
| 5) Police Administration<br>Mr. Veerabathiran, Local Station House Officer,<br>Reddiarpalayam Police Station, Pondicherry                      | Member           |
| 6) Local media<br>Mr.Abdul Rahman, Journalist, Puthiythalaimurai TV, Pondicherry.  | Member           |
| 7) Non –Government Organization<br>Mr. Azaghumuthu, Chairperson, Alcoholic Anonymous, Pondicherry  | Member           |
| 8) Representatives of faculty members<br>Mr.Maury Marie Emmanuel<br>Dr. Antony Alexis,<br>Mrs. Ida Xavier<br>Dr. J. A. Ebenezer<br>Dr. J. Alli | Member           |
| 9) Representatives of Parents<br>Mr. F.Charles.<br>Mr. P.Sadasivam.  | Member           |
| 10) Representatives of students<br>Ms.C.Monica,<br>Ms. E. Nivedha  | Member<br>Member |
| 12) Non-teaching staff<br>Mr. V. Sagayaraj, Office Manager, PJP, Pondicherry.  | Member           |

  
PRINCIPAL

Principal  
Pope John Paul II College of Education  
Reddiarpalayam Pondicherry-605 010

Copy To: The Chairman, Convenor and all the members



### Anti-Ragging Squad

The College has formed Anti-Ragging Squad for the academic year 2018-19 with the following members to curb the menace of ragging in the campus. The students are welcome to contact one or more of the following members at any time with regard to lodging of complaints against ragging.

No	Name	Designation	Position	Email & Mobile no.
1.	Mrs.F.Mary Julia Valarmathi	Associate Professor	Member	<a href="mailto:lawmaryjulia@yahoo.co.in">lawmaryjulia@yahoo.co.in</a> 9487521472
2.	Mrs.A.Malathi	Associate Professor	Member	<a href="mailto:malathiprem@hotmail.com">malathiprem@hotmail.com</a> 9486416247
3.	Mrs.Pushparani	Associate Professor	Member	<a href="mailto:jesusammappa@gmail.com">jesusammappa@gmail.com</a> 9443324163
4.	Dr.(Mrs) Auxilia Velankanni Metilda	Assistant Professor	Member	<a href="mailto:avmetilda@gmail.com">avmetilda@gmail.com</a> 9942751199

Copy To: All the members of the squad.



*[Handwritten Signature]*

PRINCIPAL

Principal

Pope John Paul II College of Education  
Reddiarpalaym, Pondicherry-605 010

**POPE JOHN PAUL II COLLEGE OF EDUCATION**  
**PONDICHERRY**  
**OFFICE ORDER**

**Sub: Establishment of Grievance Redressal Committee**

In order to comply with the AICTE Regulations for addressing students' grievances, a "**Grievance Redressal Cell**" has been constituted in Pope John Paul II College of Education with the following objectives:

1. To provide a support system for the students to express their grievances.
2. To initiate proactive measures to redress the grievances of the students.
3. To examine and scrutinize the complaints and representations of aggrieved students and to take up these matters with the appropriate authorities for redressal.

The Grievance Redressal Cell comprising of the following faculty at different positions will enquire the nature and the extent of the grievances and suggest the final action to be initiated at the institutional level for the redressal of the same. Any student may approach the following Committee Members if they have any grievance and the Committee will take up necessary action.

No	Name	Designation	Position	Email & Mobile no.
1.	Mr.Maury Marie Emmanuel	Associate Professor	Convenor	<a href="mailto:mauryemmanuel@gmail.com">mauryemmanuel@gmail.com</a> 9443327672
2.	Mr.A. M. James Raj	Associate Professor	Member	<a href="mailto:jamdiva05@yahoo.co.in">jamdiva05@yahoo.co.in</a> 9585747079
3.	Mrs. Ida Xavier	Associate Professor	Member	<a href="mailto:idaxavier@gmail.com">idaxavier@gmail.com</a> 9443497581
4.	Dr. J.A. Ebenezer	Associate Professor	Member	<a href="mailto:floriselus@gmail.com">floriselus@gmail.com</a> 9894082998
5.	Dr. A.Barnabas	Associate Professor	Member	<a href="mailto:barnabas110671@yahoo.com">barnabas110671@yahoo.com</a> 9443075636
6.	Dr.A.Gracy	Associate Professor	Member	<a href="mailto:a.gracy71@gmail.com">a.gracy71@gmail.com</a> 9952651669
7.	Mrs.Jesintha	Warden	Member	9789199857

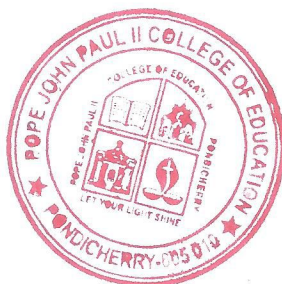
**APPELLATE COMMITTEE FOR GRIEVANCE REDRESSAL CELL**

No	Name	Designation	Position	Email & Mobile no.
1.	Rev. Fr. Dr. M. Swaminathan	Secretary	Chairman	<a href="mailto:swamymfr@gmail.com">swamymfr@gmail.com</a> 9443034742
2.	Dr. R. John Louis Manoharan	Principal	Member	<a href="mailto:mathslouis@yahoo.co.in">mathslouis@yahoo.co.in</a> 9486584783
3.	Dr. S. Antoinette Aroul Jayanthi	Director, MCA	Member	<a href="mailto:jayanthijames11@gmail.com">jayanthijames11@gmail.com</a> 9486085886
4.	Dr. Joseph Clara	Physical Director	Member	<a href="mailto:josephclara70@gmail.com">josephclara70@gmail.com</a> 9442715270

Students with **genuine grievances** should submit the same in written to the Department Grievance Cell Committee member or to the Convenor or enter their grievances through online Grievance Redressal mechanism.

The Convenor in consultation with the Principal will compile a report and submit it to the Secretary. The Committee will meet with information to the complainant on their day of convenience. The aggrieved Student may appear in person to present his/her case. Based on the decisions of the committee, necessary steps would be taken for redressal.

In case of any false/frivolous Complaint, the Secretary may order **appropriate action against the Complainant.**



*R. Kanfuran*

**PRINCIPAL**

Principal  
Pope John Paul II College of Education  
Reddiarpalavm, Pondicherry-605 010

To: Notice Board of Pope John Paul II College of Education.

CC: To the Chairman, Convenor and all the members of the Committee.



26.06.2018

**POPE JOHN PAUL II COLLEGE OF EDUCATION  
PONDICHERRY**

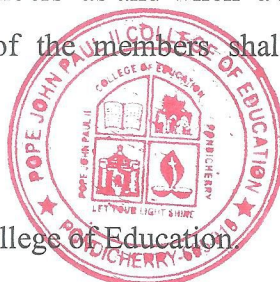
**OFFICE ORDER**

**Sub: Establishment of Internal Complaints Committee**

As per Section 4, All India Council for Technical Education (Gender Sensitization, Prevention and Prohibition of Sexual Harassment of Women Employees and Students and Redressal of Grievances in Technical Educational Institutions) Regulations, 2016, the Internal Complaints Committee is constituted for Pope John Paul II College of Education with the following members.

No	Name	Designation	Position	Email and Mobile No.
1.	Mrs. Ida Xavier	Associate Professor	Chairman	<a href="mailto:ifaxavier@gmail.com">ifaxavier@gmail.com</a> 9443497581
2.	Dr. R.T.Vijaya	Librarian	Member	<a href="mailto:vijayathanigai@yahoo.co.in">vijayathanigai@yahoo.co.in</a> 9994848883
3.	Dr. A.James	Physical Director	Member	<a href="mailto:jamesanto13@gmail.com">jamesanto13@gmail.com</a> 9488813753
4.	Dr. C. Purushothaman	Associate Professor	Member	<a href="mailto:purush.fabulous@gmail.com">purush.fabulous@gmail.com</a> 9159355316
5.	Dr.A. Jenny Frank Rose	Assistant Professor	Member	<a href="mailto:jennyfrankrose@gmail.com">jennyfrankrose@gmail.com</a> 9486851020
6.	Mrs. J. Marie Anna Dayavady	Advocate & Notary Public	Member	9443535759
7.	Meenatchi.S	Student	Member	<a href="mailto:Annamalai.Ever@gmail.com">Annamalai.Ever@gmail.com</a> 9994269761
8.	Sivachandar.R	Student	Member	<a href="mailto:Siva-chandar@rocketmail.com">Siva-chandar@rocketmail.com</a> 9600221107
9.	Agnes Rishiamma .A	Student	Member	<a href="mailto:Aggierrushi.24@gmail.com">Aggierrushi.24@gmail.com</a> 7395854513

The members shall hold office for a period not exceeding three years with effect from 26.06.2018 for effective implementation of the Act. The Presiding Officer may send notice of meeting to the members as and when a meeting of the committee is convened. The functions and duties of the members shall be as specified under the mentioned Act.



*[Handwritten Signature]*

**PRINCIPAL**

**Principal**

Pope John Paul II College of Education  
Reddiarpalaym, Pondicherry-605 010

To: Notice Board of Pope John Paul II College of Education

CC: To the Chairman, Convenor and all the members of the Committee.

26.06.2018

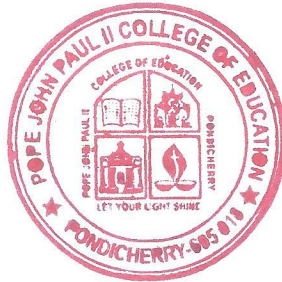
**POPE JOHN PAUL II COLLEGE OF EDUCATION**  
**PONDICHERRY**  
**OFFICE ORDER**

**Sub: Establishment of Committee for SC/ST**

As per the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989, No. 33 OFF 1989 dated 11.09.1989, committee for SC/ST is constituted for Pope John Paul II College of Education to prevent offences of atrocities against the members of Scheduled Caste and Scheduled Tribe communities. The committee comprises of the following members:

No	Name	Designation	Position	Email and Mobile No.
1.	Rev. Fr. Dr. M. Swaminathan	Secretary	Chairman	<a href="mailto:swamymfr@gmail.com">swamymfr@gmail.com</a> 9443034742
2.	Dr. R. John Louis Manoharan	Principal	Convenor	<a href="mailto:mathslouis@yahoo.co.in">mathslouis@yahoo.co.in</a> 9486584783
3.	Mr.A.M. James Raj	Associate Professor	Member	<a href="mailto:jamdiva05@yahoo.co.in">jamdiva05@yahoo.co.in</a> 9585747079
4.	Dr. D. Alexander	Associate Professor	Member	<a href="mailto:alexsep09@gmail.com">alexsep09@gmail.com</a> 9489965709
5.	Mr. S. Rajesh	Assistant professor	Member	<a href="mailto:rajesh.ramajayam@gmail.com">rajesh.ramajayam@gmail.com</a> 9994974146

Scheduled Caste and Scheduled Tribe students and their parents may henceforth approach the Committee for SC/ST for any complaint the falls under the purview of the above act.



*R. Manojan*  
 PRINCIPAL.

Principal  
 Pope John Paul II College of Education  
 Reddiarpalayam Pondicherry-605 010

To: Notice Board of Pope John Paul II College of Education.

CC: To the Chairman, Convenor and all the members of the Committee.

# POPE JOHN PAUL II COLLEGE OF EDUCATION

## PONDICHERRY

### OFFICE ORDER

#### **Sub : Establishment of Internal Quality Assurance Cell**

#### **1. Primary Goals of Quality Policy:-**

- i) To develop a quality system for conscious, consistent and Catalytic programmed action to improve the academic and administrative performance of the Institution.
- ii) To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

#### **2. Functions Of IOAC :-**

- i. Development and application of quality benchmarks/parameters for the various academic and administrative activities of the HEI;
- ii. Facilitating the creation of a learner-centric environment conducive for quality education and faculty maturation to adopt the required knowledge and technology for participatory teaching and learning process;
- iii. Arrangement for feedback responses from students, parents and other stakeholder son quality-related institutional processes;
- iv. Dissemination of information on the various quality parameters of higher education.
- v. Organization of inter and intra institutional workshops, seminars on quality related themes and promotion of quality circles;
- vi. Documentation of the various programmes/activities of the HEI, leading to quality improvement.
- vii. Acting as a nodal agency of the HEI for coordinating quality-related activities, including adoption and dissemination of good practices;



### 3. IOAC COMMITTEE(2020-2021):-

The quality policy and program shall be implemented through the following IQAC Committees:

1. Rev. Fr. Dr. M. Swaminathan, Secretary	Chairman
2. Dr. John Louis Manoharan, Principal	Vice-Chairman
3. Dr. S. Antoinette Aroul Jayanthi, Director	Member
4. Mr. Maury Marie Emmanuel, Senior Staff	Member
5. Dr. A. James Raj, Senior Staff	Member
6. Dr. R. T. Vijaya, Librarian	Member
7. Dr. James, Physical Director	Member
8. Dr. J.A. Ebenezer, Senior Staff	Member
9. Mr. V. Sagayaraj, Manager (AO)	Member
10. Rev. Fr. R. Joseph Raj, Secretary Archdiocessan Board of Edn.	Member from the MGT.
11. Mr. V. Nehru, JE, Pondicherry Planning Authority	Member Govt. Org.
12. Mr. C. Ramasamy, Sub Registrar, Local Administration Dept.	Member Local Dept.
13. Dr. S. Ganapathy, Senior Staff	Coordinator
14. Mr. Ezhilan.G	Member Student
15. Ms. Keerthana	Member Student
16. Mr. Bernard, Faculty St. Joseph's College, Cuddalore	Member Alumni

4. The roles/duties of main stake holders such as students, Alumni, Faculty and college management are indicative in nature as given below:

#### I. Role of Students

- Students are required to abide by norms, rules, guidelines related to discipline, punctuality, and regularity.
- They have to meet the benchmarks to maintain good attendance, results and to develop required presentation skills.
- Students to provide their feedback to remove any deficiencies in the course curriculum, teaching-learning process.

#### II. Role of Alumni

- The alumni should maintain good communication with faculty and the institution by providing market feedback, technology trends, and job opportunities.
- They will maintain goodwill of the college.



### III. Role of Faculty

- Faculty should maintain discipline according to the institutions rules and guidelines.
- Faculty should ensure quality teaching and learning processes.

### IV. Role of Management

- Embed quality as an important component of vision/mission of the institution.
- Faculty is encouraged to attend national and international conference and workshops to update their knowledge and skills
- Faculty is supported financially to go for higher studies and research
- Set up necessary empowered committees for maintaining / assuring highest levels of quality of Teaching, Infrastructure etc.
- Provide support in terms of infrastructure, manpower and financial support.

5. **Periodicity of the meeting of IQAC:-** The IQAC committee should meet on Quarterly basis or at least once in a semester.

*R. Ramachandran*



PRINCIPAL  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry - 10

6. **Name of the Department** : COMPUTER SCIENCE  
 Course : MASTER OF COMPUTER APPLICATION  
 Level UG / PG : PG  
 1st Year of approval by the Council : 15<sup>th</sup> July 1999  
 Number of Seats : 30  
 Duration : 2 years  
 Fee : Rs.25000  
 : 2019                      2020                      2021  
 Cut off % of admission : 59%                      61%                      60%  
 Students Placed : 53%                      55%                      54.8%  
 Average Pay package, Rs./Year : 20000                      22000                      20000  
 Accreditation Status of the course : ReAccredited with A by NAAC  
 Foreign Collaborations, if any : No

7. **Faculty - MCA**

Permanent Faculty list : Dr.(Mrs.) S.Antoinette Aroul Jayanthi  
 Mr. Maury Marie Emmanuel  
 Dr. A.M. James Raj  
 Dr.Mrs. A.Malathi

Permanent Faculty : Student Ratio : 1:20

8. **Profile of Director**

Name : **Dr.Mrs. Antoinette Aroul Jayanthi**  
 Designation : Director cum Associate Professor  
 Faculty Unique ID : 1-445198601  
 Date of Birth : 11<sup>th</sup> July 1967  
 Date of Joining the Institution : 12<sup>th</sup> July 1999  
 Qualifications with Class/Grade : B.Com. - 57%  
 M.C.A. - 67.30%  
 M.Phil(CS) - 52%  
 M.A.(Edn) - 76%  
 Ph.D



NET,SET  
 Total Experience in Years : Teaching - 22 years  
 Projects Guided : Five MCA final year students' projects are guided every year  
 No. of papers published : 8  
 Area of Specialization : Data Mining

## Profile of Faculty

Name : **Mr. Maury Marie Emmanuel**

Designation : Associate Professor

Faculty Unique ID : 1-445063916

Date of Birth : 21<sup>st</sup> December 1967

Date of Joining the Institution : 17<sup>th</sup> August 1993

Qualifications with Class/Grade : B.Com . - 63.91%  
M.Com. - 59%  
P.G.D.C.A. - 69%  
M.Sc.(IT) - 64.50%  
M.A.(Edn) - 75.67%  
M.Phil.(Com) - 55%

Total Experience in Years : Teaching 26 years

Projects Guided : Five MCA final year students' projects are guided every year

Area of Specialization : E-Commerce



Name : **Dr. A.M. James Raj**

Designation : Associate Professor

Faculty Unique ID : 1-445198007

Date of Birth : 29<sup>th</sup> April 1971

Date of Joining the Institution : 17<sup>th</sup> August 1993

Qualifications with Class/Grade : B.Sc.(CS) - 62.63%  
M.Sc.(CS) - 63%  
M.Tech.(IT) - 81.80%  
M.Phil(CS) - 61%  
Ph.D.  
NET

Total Experience in Years : Teaching - 26 years

Projects Guided : Five MCA final year students' projects are guided every year

Papers published : 8

Area of Specialization : Data Mining







13. Composition of selection team for  
Admission under Management quota :

<b>S.NO</b>	<b>NAME</b>	<b>DESIGNATION</b>
1	Rev.Fr.M.Swaminathan Secretary, Pope John Paul II College of Education	Chairperson
2	Dr.R.John Louis Manoharan Principal, Pope John Paul II College of Education	Member
3	Dr.(Mrs.) S.Antoinette Aroul Jayanthi Director of MCA, Pope John Paul II College of Education	Member
4	Dr. A.M.James Raj, HOD of Computer Applications, Pope John Paul II College of Education	Member
5	Mr. Maury Marie Emmanuel, Associate Professor, Pope John Paul II College of Education	Member

**POPEJOHN PAUL II COLLEGE OF EDUCATION  
LIST OF STUDENTS APPLIED FOR MCA**

S.N	NAME	D.O.B	Qualifying Examinations	Year of passing	% of Marks in Part-III	University or Government other authority issuing certificate	Community
1	SUNITHA S	1/29/2001	BCA	SEP,2021	77.40%	PONDICHERRY UNIVERSITY	EBC
2	TINA SHALINI M	6/21/2001	BCA	APR,2021	74.88%	PONDICHERRY UNIVERSITY	BC
3	ALBERT J	3/26/2001	BSC-CHEM	JUNE,2021	73.90%	PONDICHERRY UNIVERSITY	BC
4	SHARMILA S	4/7/2001	BCA	SEP,2021	73.90%	PONDICHERRY UNIVERSITY	OBC
5	SANTHINI A	7/3/1999	B.SC.(CS)	SEP,2020	73.36%	PONDICHERRY UNIVERSITY	SC
6	RIDHI M	9/30/2000	BCA	APR, 2021	72.35%	PONDICHERRY UNIVERSITY	MBC
7	RAMKUMAR G	4/19/2000	BCA	SEP, 2021	65.60%	PONDICHERRY UNIVERSITY	OBC
8	REINA JOSE J	2/11/2001	BSC-MATHS	APR, 2021	65%	PONDICHERRY UNIVERSITY	BC
9	GNANAPRAKASH E	11/5/1999	BCA	SEP,2021	64.70%	PONDICHERRY UNIVERSITY	SC
10	MUTHULAKSHMI N	4/26/2001	BCA	SEP, 2021	63.70%	PONDICHERRY UNIVERSITY	MBC
11	CHANDRASEKARAN K	10/6/2000	BCA	SEP, 2021	63.30%	PONDICHERRY UNIVERSITY	MBC
12	SASIBALAJI B	5/19/2001	BCA	SEP,2021	63.20%	PONDICHERRY UNIVERSITY	MBC
13	AARTHI M	4/13/2001	BCA	SEP, 2021	61.00%	PONDICHERRY UNIVERSITY	BC
14	MALKIYA R	7/22/2000	BCA	SEP, 2021	59.80%	PONDICHERRY UNIVERSITY	OBC
15	KANIMOZHI D	5/15/2001	BCA	SEP,2021	59.50%	PONDICHERRY UNIVERSITY	SC
16	AJITH KUMAR	18/07/2001	B.SC.(IT)	SEP, 2021	52%	PONDICHERRY UNIVERSITY	OBC
17	HEMAVARSHINI	25/05/2001	B.SC.(CS)	SEP, 2021	51.50%	PONDICHERRY UNIVERSITY	OBC

**POPEJOHN PAUL II COLLEGE OF EDUCATION  
LIST OF STUDENTS ADMITTED 2021 FOR MCA**

S.N	NAME	D.O.B	Qualifying Examinations	Year of passing	% of Marks in Part-III	University or Government other authority issuing certificate	Community
1	SUNITHA S	1/29/2001	BCA	SEP,2021	77.40%	PONDICHERRY UNIVERSITY	EBC
2	TINA SHALINI M	6/21/2001	BCA	APR,2021	74.88%	PONDICHERRY UNIVERSITY	BC
3	ALBERT J	3/26/2001	BSC-CHEM	JUNE,2021	73.90%	PONDICHERRY UNIVERSITY	BC
4	SHARMILA S	4/7/2001	BCA	SEP,2021	73.90%	PONDICHERRY UNIVERSITY	OBC
5	SANTHINI A	7/3/1999	B.SC.(CS)	SEP,2020	73.36%	PONDICHERRY UNIVERSITY	SC
6	RIDHI M	9/30/2000	BCA	APR, 2021	72.35%	PONDICHERRY UNIVERSITY	MBC
7	RAMKUMAR G	4/19/2000	BCA	SEP, 2021	65.60%	PONDICHERRY UNIVERSITY	OBC
8	REINA JOSE J	2/11/2001	BSC-MATHS	APR, 2021	65%	PONDICHERRY UNIVERSITY	BC
9	GNANAPRAKASH E	11/5/1999	BCA	SEP,2021	64.70%	PONDICHERRY UNIVERSITY	SC
10	MUTHULAKSHMI N	4/26/2001	BCA	SEP, 2021	63.70%	PONDICHERRY UNIVERSITY	MBC
11	CHANDRASEKARAN K	10/6/2000	BCA	SEP, 2021	63.30%	PONDICHERRY UNIVERSITY	MBC
12	SASIBALAJI B	5/19/2001	BCA	SEP,2021	63.20%	PONDICHERRY UNIVERSITY	MBC
13	AARTHI M	4/13/2001	BCA	SEP, 2021	61.00%	PONDICHERRY UNIVERSITY	BC
14	MALKIYA R	7/22/2000	BCA	SEP, 2021	59.80%	PONDICHERRY UNIVERSITY	OBC
15	KANIMOZHI D	5/15/2001	BCA	SEP,2021	59.50%	PONDICHERRY UNIVERSITY	SC

15.

- **Information of Infrastructure and other Resources Available**

Number of Class rooms (size)	: 2 (66.25 and 66.06 respectively)
Number of Tutorial room( size)	: 1 (40.23)
Number of Laboratory (size)	: 1 (66.99)
Number of Drawing Hall with capacity	: 1 (250)
Number of Computer center	: 1 (45 nodes)
Central Examination facility	
Number of rooms	: 2 (40/room)
Online Examination facility	: 45 nodes 100 mbps
Barrier Free Environment	: Ramps constructed for each building and toilet. Lift facility is also available.
Hostel facility	: Girls hostel ( 50 rooms)

- **Library**

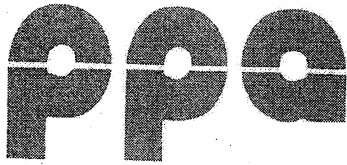
Number of Book Titles & Volumes	: 1250 titles(5644 Volumes)
Number of Journals	: 15 (National) and 8 (International)
E-books	: 850 titles (5000 volumes)
NDL	: membership ID : popejohnpaul2

- **Computing Facilities**

Internet Bandwidth	: 100 mbps
Number and Configuration of system	: 30 Intel I3 4GB Ram 500GB harddisk
Legal System S/W	: 5
Application S/W	: 20

- Games and sports facilities : 2 vollyball court  
2 shuttle court  
1 Table tennis board  
Yoga centre

- Extra- Curricular Activities :
  - Cultural activities : Yearly cultural programme
  - Sports activities : Participation at the national levels
  - Literary activities : Nil
  - Technical activities / TechFest : Tech Fête – Inter-Collegiate meet
  - Industrial Visits / Tours : Yes
  - Alumni activities : Yes



# PUDUCHERRY PLANNING AUTHORITY

(A Statutory Body in the Govt. of Puducherry)

Jawahar Nagar, Boomianpet,  
Puducherry - 605 005.

No. PPA/738/PPA/ZB-R/2018/6319

Date: 19 SEP 2018

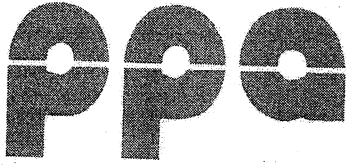
## BUILDING COMPLETION CERTIFICATE

I hereby certify that, I have inspected the land and building mentioned in the statement below and the same is based on the registered documents, date measurements and specifications found in the site:

1.	Date of inspection by the Engineer	14-09-2018
2.	Owner of the land & Building with address	Le Conseil D'Administration De L' Archdiocess De Pondicherry, Post Box No.193, No.206, Cathedral Street, Pondicherry 605 001.
3.	Type of ownership of land	Own
4.	Location with survey No. Street No. Ward No. Name of the Place, Corporation/Municipality/Panchayat h	R.S.No.79pt., Vilupuram Main Road, Reddiarpalayam, Reddiarpalayam Revenue Village, Oulgarete Municipality, Puducherry.
5.	Date of Registration of Land	1.R.V.No.93 N.R.72, 29 <sup>th</sup> May 1915. 2. Lease Deed dated; 2.12.1997
6.	Registered In the Office of Sub-Registrar with address	Sub-Registrar Office, Oulgaret, Puducherry
7.	Building plan approved by (address of Corporation/Municipality/Panchayat h)	Puducherry Planning Authority, Jawahar Nagar, Boomianpet, Puducherry- 605 005.
8.	Year of construction	1987 to 2018
9.	Purpose for which the building is being used/proposed to be used.	For Teacher Education Programme

GREGORY LOUIS JOSEPH  
Digitally signed by GREGORY LOUIS JOSEPH  
Date: 2021.04.01 07:54:27 +05'30'

*Myjay N. S.*



# PUDUCHERRY PLANNING AUTHORITY

(A Statutory Body in the Govt. of Puducherry)

Jawahar Nagar, Boomianpet,  
Puducherry - 605 005.

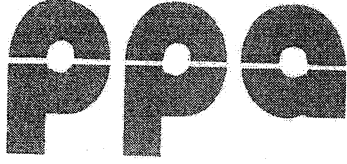
No.

Date : .....

10.	Details of construction of building (Roofing-Please mention RCC/Tiles/any other, Please specify)  A. Building Plan Approved – Construction completed		Area	Roofing
		i) Ground Floor 1) R.C.C 2) Light roof	1813.38 Sq.mts. 484.49 Sq.mts.	R.C.C Light roof
ii) First Floor	1562.66 Sq.mts.	R.C.C		
iii) Second Floor	1562.66 Sq.mts.	R.C.C		
iv) Third Floor	109.0 Sq.mts. 317.66 Sq.mts	R.C.C Light roofing with false ceiling		
B. Building Plan Approved – Construction yet to be started	i) Ground Floor	195.86 Sq.mts.	R.C.C	
	ii) First Floor	195.86 Sq.mts.	R.C.C	
C. Building Plan Approval under Scrutiny	i) Ground Floor	216.01 Sq.mts.	R.C.C	
	ii) First Floor	216.01 Sq.mts.	R.C.C	
	Total	<b>6673.73 sq.mts</b>		
11.	Area of Multipurpose Hall	<b>249.17 Sq.mts.</b>		
12.	Land usage certificate for Educational purposes from the concerned Govt. authorities obtained details.	Date of issue of Certificate: <b>22/10/2010</b>  Issued by: <b>Puducherry Planning Authority</b>		

GREGORY  
LOUIS  
JOSEPH

Digitally signed by  
GREGORY LOUIS  
JOSEPH  
Date: 2021.04.01  
07:49:45 +05'30'



# PUDUCHERRY PLANNING AUTHORITY

(A Statutory Body in the Govt. of Puducherry)

Jawahar Nagar, Boomiyampet,  
Puducherry - 605 005.

No. \_\_\_\_\_

Date : .....

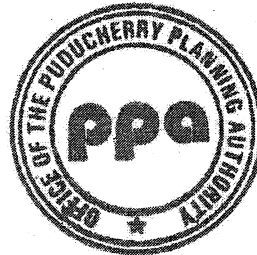
On verification of the above on site, I hereby certify that construction of the building under serial No.10A are completed in all respects and the building is structurally sound to be used for Educational purposes and having the load bearing capacity as per the latest Indian Standards.

*V. Vidjea Nehru*  
19/4/18  
Signature with seal

**V. VIDJEA NEHRU**  
MEMBER SECRETARY  
PUDUCHERRY PLANNING AUTHORITY  
PUDUCHERRY.

Name of the Engineer	V.VIDJEA NEHRU
Designation	MEMBER SECRETARY
Telephone	0413-2205851
Office Address	PUDUCHERRY PLANNING AUTHORITY JAWAHAR NAGAR, BOOMIYANPET, PUDUCHERRY

GREGOR Digitally signed  
Y LOUIS by GREGORY  
JOSEPH LOUIS JOSEPH  
Date: 2021.04.01  
07:51:07 +05'30'



C. No. 277/FSD/FPW/NOC/2021/ 731  
GOVERNMENT OF PUDUCHERRY  
FIRE SERVICE DEPARTMENT

\*\*\*

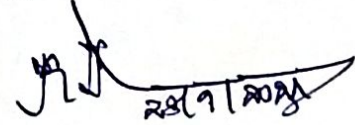
Puducherry, dt. 28 .09.2021.

NO OBJECTION CERTIFICATE

This is to certify that the four storeyed college buildings (Main Block, Southern Block, Mother Teresa Block and Girls Hostel Block) of M/s. **Pope John Paul II College of Education** at R.S.No. 79pt, Villianur Main Road, Reddiarpalayam Revenue Village, Oulgaret Municipality, Puducherry was inspected by the official of this Department and found that the fire fighting arrangements made in the buildings are in order. Hence, there is **"No Objection"** from the Fire Service angle for running the institution for the academic year 2021-22.

This certificate valid for one year from the date of issue.





(K. ILANGO)  
DIVISIONAL FIRE OFFICER  
PUDUCHERRY

To

The Secretary,  
M/s. Pope John Paul II College of Education,  
R.S.No. 79pt, Villianur Main Road,  
Reddiarpalayam Revenue Village,  
Oulgaret Municipality,  
Puducherry.



**PONDICHERY UNIVERSITY  
(A CENTRAL UNIVERSITY)**

**SCHOOL OF ENGINEERING AND TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE**

**REGULATIONS, CURRICULUM & SYLLABUS  
FOR**

**MASTER OF COMPUTER APPLICATIONS  
(M.C.A.)**

**(For CBCS System in Affiliated Colleges)**  
(Effective from the Academic Year 2020 - 2021)



**PONDICHERRY UNIVERSITY (A CENTRAL UNIVERSITY), PUDUCHERRY  
REGULATIONS AND SYLLABUS  
FOR  
MASTER OF COMPUTER APPLICATIONS (M.C.A.)**

**(For CBCS System in Pondicherry University)**

(Effective from the Academic Year (2020 - 2021))

**Eligibility for Admission:**

Candidates who have secured 55% of marks or above in any one of the following or equivalent, are eligible to apply:

- (i) Bachelor's Degree in Computer Science / Information Technology / Computer Applications / Commerce / Corporate Secretaryship / Economics / Business Administration (with Mathematics / Business Mathematics / Statistics / Computer Applications as one of the subjects)

**OR**

- (ii) Bachelor's Degree in Science with Mathematics / Statistics as one of the subjects.

**Duration of the Course:**

The course shall be of two years duration spread over four semesters. The Maximum duration to complete the course shall be 4 years.

**Medium**

The medium of instruction shall be English.

**Passing & Classification**

The minimum marks for passing and classification for the award of the MCA Degree shall be as per the existing norms of other PG degree courses of Pondicherry University offered in affiliated colleges.

**PONDICHERRY UNIVERSITY (A CENTRAL UNIVERSITY), PUDUCHERRY MASTER  
OF COMPUTER APPLICATIONS (MCA)  
(For CBCS System in Pondicherry University)**

(Effective from the Academic Year 2020 - 21)

**COURSE STRUCTURE**

<b>Course Category</b>	<b>Number of Credits</b>
Core Courses	<b>55 Credits</b> [49 Compulsory + 6 Supportive]
Elective Courses	<b>12Credits</b> [9 Domain Specific + 3 Open Elective]
Skill Enhancement Courses	<b>04Credits</b> [2 x 2 Credits]
Out Reach Programme: (Conferences/Symposiums/Technical Meets/Workshops/Etc.,)	<b>01 Credit</b>
Total	<b>72 Credits</b>

# M.C.A. CURRICULUM

## BRIDGE COURSES

S. No.	Course Code	Course Title	Hours*
1.	MCAP 001	Fundamentals of Computers	30
2.	MCAP 002	Introduction to Problem Solving	30
3.	MCAP003	Introduction to Computer Programming	30

\* 15 Days x 6 Hours = 90 Hours

## **FIRST SEMESTER**

S. No.	Course Code	Course Title	H/S	L	T	P	Credits
1.	MCAP 411	Data Structures and Algorithms	H	3	0	0	3
2.	MCAP 412	Object Oriented Programming	H	3	0	0	3
3.	MCAP413	Database Management Systems	H	3	0	0	3
4.		Supportive Core#1	H	3	0	0	3
5.	MCAP 414	Data Structures and Algorithms Lab	H	0	0	3	2
6.	MCAP 415	Object Oriented Programming Lab	H	0	0	3	2
7.	MCAP 416	Database Management Systems Lab	H	0	0	3	2
Total Credits							18

## **SECOND SEMESTER**

S. No.	Course Code	Course Title	H/S	L	T	P	Credits
1.	MCAP 421	Computer Networks	H	3	0	0	3
2.	MCAP 422	Operating Systems	H	3	0	0	3
3.		Domain Specific Elective # 1	S	3	0	0	3
4.		Domain Specific Elective # 2	S	3	0	0	3
5.		Open Elective #1	S	3	0	0	3
6.	MCAP 423	Communication Skills	H	1	0	2	2
7.	MCAP 424	Computer Networks Lab	H	0	0	3	2
8.	MCAP 425	Operating Systems Lab	H	0	0	3	2
Total Credits							21

### THIRD SEMESTER

S. No.	Course Code	Course Title	H/S	L	T	P	Credits
1.	MCAP 511	Software Engineering	H	3	0	0	3
2.	MCAP 512	Internet and Web Technologies	H	3	0	0	3
3.		Supportive Core #2	H	3	0	0	3
4.		Domain Specific Elective # 3	S	3	0	0	3
5.		Skill Enhancement Programme #1	S	0	1	2	2
6.		Skill Enhancement Programme #2	S	0	1	2	2
7.		Academic Out-Reach Programme	H	-	-	-	1
8.	MCAP 513	Mini Project*	H	0	0	3	2
9.	MCAP 514	Internet and Web Technologies Lab	H	0	0	3	2
Total Credits							21

\* Mini project shall be in alignment with the Domain Specific Electives

### FOURTH SEMESTER

S. No.	Course Code	Course Title	H/S	Credits
1.	MCAP 521	Project Work	H	4
2.	MCAP 522	Project Seminar	H	4
3.	MCAP 523	Project Report And Viva-voce	H	4
Total Credits				12

### **SUPPORTIVE CORE COURSE (3 Credits)**

S. No.	Course Code	Course Title	H/S	L	T	P	Credits
1	MCAP 431	Mathematics for Computer Science	H	3	0	0	3
2	MCAP 432	Management Concepts and Strategies	H	3	0	0	3

### **SKILL ENHANCEMENT COURSES (4 Credits)**

S. No.	Course Code	Domain & Course Title	H/S	L	T	P	Credits
1		Online / Certification Courses	S	-	-	-	2
2	MCAP531	Simulation and Modeling Tools (SCI Lab)	S	0	1	2	2
3	MCAP532	Mobile Application Development	S	0	1	2	2
4	MCAP533	Software Testing Tools	S	0	1	2	2
5	MCAP534	Multimedia Tools	S	0	1	2	2
6	MCAP535	Python Programming	S	0	1	2	2

Any Two of the Skill Enhancement Courses should be credited to constitute the Four Credits.

**OP**  
**EN**  
**EL**

### **ECTIVE COURSES (3 Credits)**

One Course from any other Department (Non Computer Science)

(or)

Domain Specific Electives of any Specialisation related to Computer Science

## DOMAIN SPECIFIC ELECTIVES COURSES (9 Credits)

S. No.	COURSE CODE	COURSE TITLE	H/S	L	T	P	Credits
<b>STREAM 1: INFORMATION SECURITY</b>							
1	MCAP 441	Fundamentals of Cryptography (Level 1)	S	3	0	0	3
2	MCAP 442	Database and Application Security (Level 2)	S	3	0	0	3
3	MCAP 443	Mobile and Digital Forensics (Level 2)	S	3	0	0	3
4	MCAP 444	Malware Analysis (Level 2)	S	3	0	0	3
5	MCAP 445	Information System Audit (Level 3)	S	3	0	0	3
6	MCAP 446	Information Security Management (Level 3)	S	3	0	0	3
7	MCAP 447	Cloud Security (Level 3)	S	3	0	0	3
8	MCAP 448	Ethical Hacking (Level 3)	S	3	0	0	3
<b>STREAM 2: SOFTWARE ENGINEERING</b>							
9	MCAP 451	Object Oriented System Design (Level 1)	S	3	0	0	3
10	MCAP 452	Software Architecture (Level 1)	S	3	0	0	3
11	MCAP 453	Software Project Management (Level 2)	S	3	0	0	3
12	MCAP 454	Software Testing (Level 2)	S	3	0	0	3
13	MCAP 455	Software Quality Assurance (Level 3)	S	3	0	0	3
14	MCAP 456	Software Risk Management & Maintenance (Level 3)	S	3	0	0	3
15	MCAP 457	AGILE Software Process (Level 3)	S	3	0	0	3
<b>STREAM 3: HUMAN COMPUTER INTERACTION</b>							
16	MCAP 461	Foundations of Human Computer Interaction (Level 1)	S	3	0	0	3
17	MCAP 462	Introduction to Web Accessibility (Level 1)	S	3	0	0	3
18	MCAP 463	Introduction to Mobile Accessibility (Level 1)	S	3	0	0	3
19	MCAP 464	Fundamentals of Context Aware Computing (Level 2)	S	3	0	0	3
20	MCAP 465	Digital Accessibility Audit (Level 2)	S	3	0	0	3
21	MCAP 466	User Interface Engineering (Level 3)	S	3	0	0	3
22	MCAP 467	Computer Vision and Applications (Level 3)	S	3	0	0	3
<b>STREAM 4 – DATA ANALYTICS</b>							
23	MCAP 561	Big Data (Level 1)	S	3	0	0	3
24	MCAP 562	Python Programming for Data Analytics (Level 1)	S	3	0	0	3
25	MCAP 563	Statistics for Business Analytics (Level 1)	S	3	0	0	3
26	MCAP 564	Marketing Analytics (Level 2)	S	3	0	0	3
27	MCAP 565	Social Network Analytics (Level 2)	S	3	0	0	3
28	MCAP 566	Risk Analytics (Level 2)	S	3	0	0	3
29	MCAP 567	Database Systems in Big Data (Level 3)	S	3	0	0	3
30	MCAP 568	Streaming Analytics (Level 3)	S	3	0	0	3
31	MCAP 569	Video Processing and Analytics (Level 3)	S	3	0	0	3
<b>STREAM 5 – NETWORK COMPUTING</b>							
32	MCAP 571	Principles of Distributed Computing (Level 1)	S	3	0	0	3
33	MCAP 572	Introduction to Parallel Computing (Level 2)	S	3	0	0	3
34	MCAP 573	Network Design and Management (Level 2)	S	3	0	0	3
35	MCAP 574	Web Services Computing (Level 2)	S	3	0	0	3
36	MCAP 575	Pervasive and Ubiquitous Computing (Level 3)	S	3	0	0	3
37	MCAP 576	Cloud Computing (Level 3)	S	3	0	0	3

38	MCAP 577	Internet of Things (Level 3)	S	3	0	0	3
		<b>STREAM 6 ARTIFICIAL INTELLIGENCE</b>					
39	MCAP 581	Introduction to A.I. and Expert Systems (Level 1)	S	3	0	0	3
40	MCAP 582	Neural Networks (Level 2)	S	3	0	0	3
41	MCAP 583	Fuzzy Logic (Level 2)	S	3	0	0	3
42	MCAP 584	Decision Support Systems (Level 2)	S	3	0	0	3
43	MCAP 585	Introduction to Machine Learning (Level 3)	S	3	0	0	3
44	MCAP 586	Introduction to Robotics (Level 3)	S	3	0	0	3
45	MCAP 587	Soft Computing (Level 3)	S	3	0	0	3



## Programme Outcomes

The Master of Computer Applications (MCA) programme is designed to impart fundamental knowledge in computing domain, programming skills to enable the students to cater the needs of the IT industry and / or to pursue higher education. The following are the specific programme outcomes:

- Ability to understand and apply the mathematical concepts, domain knowledge in computer science for solving problems.
- Analyse customer requirements, formulate high level design, implement robust and reliable software systems.
- Implement various computing applications using modern computing tools and techniques and use them with dexterity.
- Analyze the safety, security and applicability aspects in designing an application.
- Solve and work with a professional context pertaining to ethics, social, cultural and cyber regulations.
- Communicate effectively and present technical information in oral and written reports.
- Involve in perennial learning for a continued career development and progress as a computer professional.
- Function effectively both as a team leader and team member on multi-disciplinary projects to demonstrate computing and management skills.
- Impart entrepreneurship vision to facilitate creation of wealth using technology based innovation with the overall goal of betterment of the individual and society.

**M.C.A.**  
**BRIDGE COURSES**

## **MCAP 001: FUNDAMENTALS OF COMPUTERS**

### **Objectives:**

- To get familiar with the fundamental concepts of Computers.

### **Outcomes:**

- Ability to gain basic knowledge in computer science domain.

### **MODULE-I**

Computer Basics: Simple Model of a Computer, Characteristics of Computers – Computer classifications and generations - Data Representation.

### **MODULE-II**

Introduction to Microprocessor - Input / Output Units – Computer Memory – Storage – Database Management Systems - Binary Arithmetic – Logic Circuits.

### **MODULE-III**

Introduction to Operating Systems – Programming languages – Multimedia - Computer Networks.

### **Text Book:**

1. V. Rajaraman, Neeharika Adabala : Fundamentals of computers, Prentice Hall India Learning Private Limited; 6th Revised Edition (2014)

## **MCAP 002: INTRODUCTION TO PROBLEM SOLVING**

### **Objectives:**

- To get familiar with various problem solving techniques.

### **Outcomes**

- Ability to solve problems using various approaches.

### **MODULE-I**

Introduction to problem solving – Top-down design – Implementation of algorithms – program verification – efficiency & analysis of algorithms.

### **MODULE-II**

Basic problem solving approaches: Factoring methods – Array techniques – Merging, Sorting & Searching.

### **MODULE-III**

Text processing - Pattern searching – Dynamic Data Structures - Recursive algorithms.

### **Text Book:**

1. R. G. Dromey, How to Solve it by Computer, Pearson Education India; 1<sup>st</sup> edition (2006).

## **MCAP 003: INTRODUCTION TO COMPUTER PROGRAMMING**

### **Objectives:**

- To develop C Programs using basic programming constructs
- To develop C programs using arrays, strings, functions, structures & Files.

### **Outcomes:**

- Ability to code in C Language.

### **MODULE - I**

Introduction to programming paradigms - Structure of C program - C programming: Data Types – Storage classes - Constants – Enumeration Constants - Keywords – Operators: Precedence and Associativity - Expressions - Input/Output statements, Assignment statements – Decision making statements - Switch statement - Looping statements – Pre-processor directives - Compilation process.

### **MODULE - II**

Introduction to Arrays: Declaration, Initialization – One dimensional array – Two dimensional arrays – String operations: length, compare, concatenate and copy – Introduction to functions: Function prototype, function definition, function call, Built-in functions (string functions, math functions) – Recursive function.

### **MODULE - III**

Structure - Nested structures – Pointer and Structures – Array of structures – Files – Create, Open, Close, Processing of file content.

### **Text Book:**

1. Reema Thareja, Programming in C, Oxford University Press, Second Edition, 2016.
2. Kernighan, B.W and Ritchie, D.M., The C Programming language, Pearson Education, Second Edition, 2006.

**M.C.A.**  
**FIRST SEMESTER**

## MCAP 411: DATA STRUCTURES AND ALGORITHMS

L	T	P	C
3	0	0	3

### Pre-requisite:

- Introductory knowledge about Computing.

### Objectives:

- To impart knowledge about various data structures, their representation, and applications.
- To Acquaint with various Algorithmic techniques and applications.

### Outcomes:

- Ability to understand and apply various data structures such as arrays, queues, linked lists, stacks, trees and graphs.
- Ability to understand the fundamental concepts in algorithms & analyze algorithms using space & time complexity.
- Ability to understand and implement various types of algorithms such as divide & conquer, greedy method, dynamic programming.

### **Module-I:** (9 Hrs)

Data Structures: Basic Terminologies – Algorithms: Definition, Pseudocode Representation – Time complexity and space complexity - efficiency of algorithms - O-notation - Omega notation and Theta Notation Arrays: One dimensional & multidimensional arrays – Searching.

### **Module-II:** (9 Hrs)

Stacks: Representation - Operations – Applications. Queues: Representation – Operations – Applications.

Linked List: Single Linked List, Double Linked List, Circular Linked List, Applications of Linked List.

### **Module-III:** (9 Hrs)

Trees: Basic Terminologies - Binary trees: Representation, Operations, Traversals, Types - Applications of Trees.

Graphs: Basic Terminologies, Representation, Operations, Traversals – Applications: Shortest path problem, Topological sorting, Minimum Spanning trees.

### **Module-IV:** (9 Hrs)

Divide and Conquer: General method – binary search - merge sort - quick sort--Recursive algorithms, analysis of non-recursive and recursive algorithms, solving recurrence equations.

Greedy Method: General method – knapsack problem – minimum spanning tree algorithms – single source shortest path algorithm – scheduling - Huffman codes

### **Module - V:** (9 Hrs)

Dynamic Programming: 0/1 Knapsack and Traveling salesman problem –Backtracking:n-Queen problem - Graph Colouring - Introduction to NP-Hard and NP-Completeness.

**Text Book(s):**

1. Ellis Horowitz and Sartaj Sahni, Susan Anderson-Freed, Fundamentals of Data Structures in C (Second Edition), 2008.
2. Ellis Horowitz, Sartaj Sahni, Sanguthevar, Rajasekaran, Fundamentals of Computer Algorithms, Galgotia Publications Pvt. Ltd., 2008.
3. Debasis Samanta, Classic Data Structures, Second Edition, Prentice-Hall of India, Pvt. Ltd., India, 2009.

**Reference books:**

1. Dinesh P Mehta & Sartaj Sahni, Handbook of Data Structures and Applications, Chapman and Hall. 2005.

**Web References:**

<https://www.geeksforgeeks.org/data-structures/>



## MCAP 412: OBJECT ORIENTED PROGRAMMING

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Programming knowledge.

### Objectives:

- Acquiring skills to do Object Oriented programming using C++ and Java

### Outcomes:

- Ability to understand and build Object Oriented Programs.
- Ability to understand and build Java programs using applets, AWT, Swing, Java Beans and Servlets.

### **Module-I:**

(9 Hrs)

Introduction to C++ - Applications of C++ - Structure of a Simple C++ Program – Compiling and Executing C++ programs – Programming elements – C++ Library function – User Defined Functions: Call by value , call by reference.

### **Module-II:**

(9 Hrs)

Object oriented programming paradigm – Basic OOP concepts – Benefits – C++ Class definition – Member functions – Static members – Constructor and destructors: various types. Operator overloading: Unary, binary – Rules for Operator overloading – Type conversions - Function overloading – Friend and Virtual Functions. Inheritance: Various Types , Applications – Abstract classes – Virtual base classes.

### **Module-III:**

(9 Hrs)

Introduction to Java Applet programming – Graphic Programming - Managing input and output files – Java Collections.

### **Module-IV:**

(9 Hrs)

Event Handling – Applets – AWT: Working with windows, Graphics and Text – AWT controls – layout Managers and Menus – Images.

### **Module-V:**

(9 Hrs)

Java Swing and its controls– Java Beans – Servlets.

### **Text Books:**

1. E.Balagurusamy (2013): Object Oriented Programming With C++, McGraw-Hill Education, Sixth Edition.
2. E. Balagurusamy, Programming with Java, A Primer, 2010, Fourth Edition, McGraw Hill.
3. Herbert Schildt, The Complete Reference: Java 2, 2002, Fifth Edition, McGraw Hill.

## MCAP 413: DATABASE MANAGEMENT SYSTEMS

L	T	P	C
3	0	0	3

### Pre-requisite:

- NIL-

### Objectives:

- Understand the fundamentals of data models and conceptualize and depict a database system using ER diagram
- Study of SQL and relational database design.
- Understand about Data Storage Techniques and Query processing.
- Impart knowledge in Transaction processing, Concurrency control techniques and recovery procedures.

### Outcomes:

- Effectively conceptualize and depict a database system using ER diagram
- Design database and perform SQL queries
- Understand transaction processing, files and special purpose databases.

### **Module-I: Introduction**

(9 Hrs)

File systems versus Database systems – Data Models – DBMS Architecture – Data Independence – Data modeling using Entity – Relationship Model – Enhanced E-R Modeling.

### **Module-II: Relational Model and Query Evaluation**

(9 Hrs)

Relational Model Concepts – Relational Algebra – SQL – Basic Queries – Complex SQL Queries – Views – Constraints – Relational Calculus – Tuple Relational Calculus – Domain Relational Calculus –overview of commercial RDBMSs – Database Design – Functional Dependencies – Normal Forms – 1NF – 2NF-3NF-BCNF – 4NF-5NF - Algorithms for Executing Query Operations — Cost Estimation.

### **Module-III: Transaction Processing**

(9 Hrs)

Transaction Processing – Properties of Transactions - Serializability – Transaction support in SQL - Locking Techniques – Time Stamp ordering – Validation Techniques – Granularity of Data Items – Recovery concepts – Shadow paging – Log Based Recovery – Database Security Issues – Access control – Statistical Database Security.

### **Module-IV: Files and Indexing**

(9 Hrs)

File operations – Hashing Techniques – Indexing – Single level and Multi-level Indexes – B+ tree – Static Hashing - Indexes on Multiple Keys.

### **Module-V: Special Purpose Databases**

(9 Hrs)

OODBMS- - Object-Based Databases - OO Data Model - OO Languages – Persistence – Object Relational Databases - XML – Structure of XML - Temporal Databases – Mobile Databases – Spatial Databases – Case Study for Design and Manage the Database for any Project.

### Text Books:

1. Abraham Silberschatz, Henry F. Korth and S.Sundarshan “Database System Concepts”, 6<sup>th</sup> Edition, McGraw Hill, 2010.
2. C.J. Date, “An Introduction to Database Systems”, 8<sup>th</sup> Edition, Pearson Education, 2003.

### **Reference Books:**

1. Ramez Elamassri and Shankant B-Navathe, "Fundamentals of Database Systems", 6<sup>th</sup> Edition, Pearson Education Delhi, 2010.
2. Raghu Ramakrishnan, Johannes Gehrke, ' Database management systems" McGraw Hill, 2003.
3. Peter Rob, Carlos Coronel, "Database System Concepts", Cengage Learning, 2008.
4. Frank. P. Coyle, "XML, Web Services and The Data Revolution", Pearson Education, 2012.
5. Lee Chao, "Database Development and Management", Auerbach Publications, 2010.
6. Peter Rob, Carlos coronel, "Data base system concepts", Ceange Learning 2008.

## **MCAP 414 - DATA STRUCTURES AND ALGORITHMS LAB**

### **Skills to be acquired:**

- Implementation of various Data Structures
- Implementation of various Algorithms.

### **Lab Software Requirements:**

- Any Programming language

### **List of Exercises:**

1. Searching Algorithms (with the number of key comparisons) - Sequential, Binary and Fibonacci search algorithms
2. Evaluation of arithmetic expression.
3. Stack, Queue, Circular queue, priority queue
4. Singly Linked List, Doubly Linked List, Circular Linked List.
5. Tree Traversal techniques.
6. Graph Traversal techniques.
7. Dijkstra's Algorithm to obtain the shortest paths
8. Binary search using Divide-and-Conquer technique.
9. Sorting algorithms using Divide-and-Conquer technique.
10. Knapsack using Greedy technique.
11. Traveling Salesman algorithms using Dynamic Programming technique.
12. 8 Queens with the design of Backtracking.

## MCAP 415: OBJECT ORIENTED PROGRAMMING LAB

L	T	P	C
0	0	3	2

### List of Exercises:

1. Working with Class and Objects.
2. Program to work with Inheritance and Packages.
3. Program to work with Interfaces.
4. Program to work with Exception Handling Technique.
5. Program to work with to input/output streams.
6. Program to work with File handling technique.
7. Program to work with Threading.
8. Program to work with various AWT controls.
9. Working with Java Beans
10. Program to work with Swings
11. Program to work with Servlets

## MCAP 416: DATABASE MANAGEMENT SYSTEMS LAB

L	T	P	C
0	0	3	2

### Laboratory Components:

#### Skills to be acquired:

- Practicing the different types of data storage techniques and query processing.

#### Lab Software:

- MySQL/ ORACLE / Microsoft SQL Server, etc.,

#### List of Exercises:

1. Creation of base tables and views.
2. Data Manipulation INSERT, DELETE and UPDATE in Tables. SELECT, Sub Queries and JOIN
3. Data Control Commands
4. High level language extensions – PL/SQL. Or Transact SQL – Packages
5. Use of Cursors, Procedures and Functions
6. Embedded SQL or Database Connectivity.
7. Oracle or SQL Server Triggers – Block Level – Form Level Triggers
8. Working with Forms, Menus and Report Writers for a application project in any domain
9. Front-end tools – PHP, Visual Basic, etc.,

**M.C.A.**  
**SECOND SEMESTER**

## MCAP 421: COMPUTER NETWORKS

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Knowledge in Computers

### Objectives:

- To understand the fundamentals of Computer Networks
- To get familiarized with Various Layers of Computer Networks
- To understand the working principles of Various Protocols
- To get familiarized with Network Security

### Outcomes:

- Ability to understand the various hardware and software components of computer networks.
- Ability to understand the layered network architecture.
- Ability to configure networks and debug issues in networks.

### **Module-I: Introduction to Networks**

(9 Hrs)

Network Topology - Network Architecture - Reference Models - Example Networks - APRANET, NSFNET, Internet - Physical Layer - Transmission media.

### **Module-II: The Data Link Layer**

(9 Hrs)

Data Link Layer design issues - Error Detection and Correction Methods - Elementary Data Link Protocols - Sliding Window Protocols Protocol - Verification Methods - Channel Allocation Multiple Access protocols - IEEE 802 Standards.

### **Module- III: The Network Layer**

(9 Hrs)

Network Layer design issues - Routing algorithms - Congestion Control algorithms - Internetworking Network Layer in Internet.

### **Module- IV: The Transport Protocols**

(9 Hrs)

Transport Service - Transport Protocols - Internet Transport Protocols - UDP - TCP - Performance issues.

### **Module- V: The Application Layer**

(9 Hrs)

Application Layer design issues - Domain Name System - Electronic Mail - World Wide Web - Other Applications - Network Security - Basic Cryptography – Symmetric and Asymmetric Cryptography.

### Text Book:

1. Behrouz Forouzan, Data Communications and Networking, McGraw Hill, 4<sup>th</sup> Edition, 2017.

### Reference Books:

1. Andrew S. Tanenbaum, Computer Networks, International Economy Edition, 5<sup>th</sup> edition, 2010.
2. William Stallings, Cryptography and Network Security: Principles and Standards, Prentice Hall India, 4<sup>th</sup> Edition, 2005.



## MCAP 422: OPERATING SYSTEMS

L	T	P	C
3	0	0	3

### Pre-requisite:

- Familiarity with Fundamentals of Computers

### Objectives:

- To Understand the Basic features of Operating System
- To Introduce Different Functions of Operating Systems
- To Introduce Various Types of Operating Systems

### Outcomes:

- Ability to understand various functions of operating systems.
- Analyze various memory management and process management functions.
- Ability to install and configure various operating systems.

### **Module-I: introduction**

(9 Hrs)

Types of operating systems-operating systems Structures-Systems components operating systems services-System calls-Systems programs-Processes-process concept- process scheduling-operation on processes-co-operating processes-Inter process communications-CPU Scheduling-Scheduling criteria-Scheduling algorithms-Multiple-processor Scheduling.

### **Module-II: Process Synchronization**

(9 Hrs)

Critical Section problem – Semaphores-Classical problems of synchronization-critical Regions-Monitors-Deadlock Characterization-Deadlock Handling-Deadlock Prevention-Deadlock Avoidance-Deadlock Detection-Deadlock Recovery –Threads- Multithreading Models.

### **Module-III: Memory Management**

(9 Hrs)

Memory Management-Swapping-Contiguous Memory Allocation-Paging-Segmentation-Virtual Memory-Demand Paging-Page Replacement-Thrashing.

### **Module-IV: Disk Scheduling and Distributed Systems**

(9 Hrs)

Disk Structures-Disk Scheduling-File Systems Interface-File Concepts-Access Methods-Directory Structures-File System Implementation-File Systems Structures-Directory Implementation-Allocation Methods-Free Space Management-Distributed File Systems-Naming and Transparency-Remote File Accesses- Stateful Versus Stateless Service-File replication.

### **Module-V: Case Studies**

(9 Hrs)

Linux System-design Principles- process Management-File Systems- MS Windows -Systems Structures-Process management-memory Management-Android OS-Virtual machine OS.

### Text Books:

1. Abraham Silberschatz Peter B Galvin, G. Gagne," Operating Systems Concepts", 7<sup>th</sup> Edition, Addison Wesley, 2010.
2. Andrew S. Tanenbaum, "Modern operating Systems", 3<sup>rd</sup> Edition, PHI Learning Pvt. Ltd., 2008.

**Reference Books:**

1. William Stallings, "Operating Systems: Internals and Design Principles", 7<sup>th</sup> Edition, Prentice Hall, 2011.
2. H M Deital, P J Deital and D R Choffnes, "Operating Systems", 3rd Edition, Pearson Education, 2011.
3. D M Dhamdhere, "Operating Systems: A Concept-based Approach", 2<sup>nd</sup> Edition, Tata McGraw-Hill, 2007.

## MCAP 423: COMMUNICATION SKILLS

L	T	P	C
1	0	2	2

**Module-I:** (9 Hrs)

**Session I: Communication:** Concepts and definition - Importance - Process- communication - Model - Types - Mode of communication - Objectives - Inter, Intra personal Communication - Barriers - Commandments of communication.

**Module-II:** (9 Hrs)

**Session II: Developing Communication Skills:** a) Reading: Preparation - Reading Styles - Linear reading - Faster Reading - Reading Techniques b) Writing: Effective writing - Report writing - Speech Writing - Minutes - Communication aids - Agenda Writing - Letters - Article writing - Improving English language Writing - When to write and when not to write.

**Session III: Listening and Speaking:** a) Listening: Listening - Importance - Art of Listening - Advantages - Mode of expression - Listening tests b) Speaking: Art of conversation – Using telephone - Methods of asking questions - Brain Storming - Presenting reports –Improving speech delivery - Expressing Techniques

**Module-III:** (9 Hrs)

**Session-IV: Interviews Techniques:** What and Why? - Types of Interviews - Understanding the intricacies - Planning for interviews - Answering skills – Effective Communication during interviews - TIPS - Mock Interview.

**Session V: Group Discussion:** Group Discussion - Purpose - Process of Group Discussion - Preparation - Getting Started - Art of guiding and controlling discussion - Personality test through group discussion - Lateral thinking - Participation techniques - mock G.D.

**Module-IV:** (9 Hrs)

**Session VI: Body Language:** Origin and development of body language - Tool for personality identification - Analysis of body language - Types - Desirable body language - Attitude and body language - Body language as a powerful communication.

**Session VII: Negotiation Techniques:** Meaning - Importance - Fundamentals - Preparation - Techniques of Negotiation - Managing process of negotiation - Inter-personal behaviour – Case Study - Mock negotiations

**Session VIII: Meetings:** Meaning - Importance - Objectives - Leading and participating in meetings - Success indicators - Understanding the process of meetings – Communication skills for meetings - Mock Meetings - Seminars.

**Module-V:** (9 Hrs)

**Session-IX: Management Communication Relationships:** Communication in Management - Semantics - Employee and Employer communication - Communication within Management - Downward and Upward communication - Communication by specialists - The Union's role in communication.

**Session-X: Presentation:** Meaning and types of presentation - Understanding the audience - Planning - Designing - Written and oral - Making use of notes and outlines \_ Techniques for delivering presentation - personal style - A postscript - model presentation.

**Session - XI:** A whole review of the ten sessions and evaluation of the Students.

**Session XII:** Practical communication with a cross section of the Society.

## MCAP 424: COMPUTER NETWORKS LAB

L	T	P	C
0	0	3	2

### Skills to be acquired:

- Practicing the different types Networking Concepts and Basic Communication model.

### List of Exercises:

1. Write a program in Java for simplex communication using Connection Oriented service.
2. Write a program in Java for simplex communication using Connection Less service.
3. Write a program in Java for full duplex communication using Connection Oriented service.
4. Write a program in Java for full duplex communication using Connection Less service.
5. Implement an Unrestricted Simplex Protocol of Data Link Layer.
6. Implement A Simplex Stop-and-Wait Protocol of Data Link Layer.
7. Implement A Simplex Protocol for a Noisy Channel of Data Link Layer.
8. Implement the following Sliding Window Protocol:
  - a. A One-Bit Sliding Window Protocol
  - b. A Protocol Using Go Back N
  - c. A Protocol Using Selective Repeat
9. Implement Multicast Routing of Network Layer.
10. Implement Transfer a File from one system to another system using FTP.

## MCAP 425: OPERATING SYSTEMS LAB

L	T	P	C
0	0	3	2

### **Skills to be acquired:**

- Practicing the different types Operating System Concepts and features.

### **List of Exercises:**

1. Implementation of System Calls
2. Implementation of File Permissions
3. Implementation of File Operations
4. Implementation of File Copy and Move
5. Implementation of Dining Philosophers Problem
6. Implementation of Producer-Consumer Problem
7. Implementation of First in First Serve Algorithm
8. Implementation of Shortest Job First Scheduling Algorithm
9. Implementation of Round Robin Scheduling Method
10. Implementation of Priority Scheduling Algorithm

**M.C.A.**  
**THIRD SEMESTER**

## MCAP 511: SOFTWARE ENGINEERING

L	T	P	C
3	0	0	3

### Pre-requisite:

- Familiarity with Programming in Object Oriented Languages

### Objectives:

- To Introduce Different Software Life Cycle Models
- To Understand the Significance of Software Development Process
- To Design and Develop Robust Software Products

### Outcomes:

- Ability to understand various phases of software development life cycle.
- Ability to acquire software project management skills.

### **Module-I: Introduction to Software Engineering** (9 Hrs)

Software Process Structure – Process Models & Activities – Agile Development - Requirements Engineering.

### **Module-II: Software Modeling** (9 Hrs)

Design Concepts - Architectural Design - Component Level Design – User Interface Design- Web Application Design.

### **Module-III: Software Quality Management** (9 Hrs)

Review Techniques - Software Quality Assurance – Software Testing Strategies – Software Configuration Management – Product Metrics.

### **Module-IV: Managing Software Projects** (9 Hrs)

Project Management Concepts – Process and Project Metrics – Estimation for Software Projects – Project Scheduling - Risk Management.

### **Module-V: Software Reliability & Security** (9 Hrs)

Reliability Engineering- Reliability and availability – Reliability Testing. Security Requirements & Design.

### Text Books:

1. Roger S. Pressman, Software Engineering: A Practitioner's Approach, McGraw-Hill Education, 8<sup>th</sup> edition, 2014.
2. Ian Sommerville, Software Engineering, Pearson Publishers, 10<sup>th</sup> Edition, 2015.

## MCAP 512: INTERNET AND WEB TECHNOLOGIES

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Understanding of Computer Networks & Programming Concepts

### Objectives:

- Understand the concepts and architecture of the World Wide Web.
- Understand and practice markup languages
- Understand and practice embedded dynamic scripting on client side Internet Programming
- Understand and practice web development techniques on client-side

### Outcomes:

- Ability to understand the working mechanism of internet and world wide web.
- Ability to build web pages using various web technologies.
- Build web applications using clients and server side scripts.

### **Module-I: Introduction**

(9 Hrs)

Internet Standards – Introduction to WWW – WWW Architecture – SMTP – POP3 – File Transfer Protocol - Overview of HTTP, HTTP request – response — Generation of dynamic web pages.

### **Module-II: UI Design**

(9 Hrs)

Markup Language (HTML): Introduction to HTML and HTML5 - Formatting and Fonts – Commenting Code – Anchors – Backgrounds – Images – Hyperlinks – Lists – Tables – Frames - HTML Forms. Cascading Style Sheet (CSS): The need for CSS, Introduction to CSS – Basic syntax and structure -Inline Styles – Embedding Style Sheets - Linking External Style Sheets – Backgrounds – Manipulating text - Margins and Padding - Positioning using CSS.

### **Module-III: Introduction to Javascript**

(9 Hrs)

Introduction - Core features - Data types and Variables - Operators, Expressions, and Statements - Functions - Objects - Array, Date and Math related Objects - Document Object Model - Event Handling - Controlling Windows & Frames and Documents - Form handling and validations.

### **Module-IV: Advanced Javascript**

(9 Hrs)

Browser Management and Media Management – Classes – Constructors – Object-Oriented Techniques in JavaScript – Object constructor and Prototyping - Sub classes and Super classes – JSON - jQuery and AJAX.

### **Module-V: PHP & MySQL**

(9 Hrs)

Introduction - How web works - Setting up the environment (LAMP server) - Programming basics - Print/echo - Variables and constants – Strings and Arrays – Operators, Control structures and looping structures – Functions – Reading Data in Web Pages - Embedding PHP within HTML – Establishing connectivity with MySQL database.

### Text Books:

1. Harvey & Paul Deitel & Associates, Harvey Deitel and Abbey Deitel, “Internet and World Wide Web - How to Program”, 5<sup>th</sup> Edition, Pearson Education, 2011.



2. Achyut S Godbole and Atul Kahate, "Web Technologies", 2<sup>nd</sup> Edition, Tata McGraw Hill, 2012.
3. Thomas A Powell, Fritz Schneider, "JavaScript: The Complete Reference", 3<sup>rd</sup> Edition, Tata McGraw Hill, 2013.

**Reference Books:**

1. David Flanagan, "JavaScript: The Definitive Guide, Sixth Edition", O'Reilly Media, 2011.
2. Steven Holzner, "The Complete Reference - PHP", Tata McGraw Hill, 2008.
3. Mike Mcgrath, "PHP & MySQL in easy Steps", Tata McGraw Hill, 2012.

## MCAP 513: MINI PROJECT

L	T	P	C
0	0	3	2

### Laboratory Components:

### Skills to be Acquired:

- Ability to develop real time software applications.

### Lab Software Requirements:

- Based on the project requirements

## MCAP 514: INTERNET AND WEB TECHNOLOGIES LAB

L	T	P	C
0	0	3	2

### skills to be Acquired:

- Designing Static and Dynamic Web Pages
- Designing Web Applications with Persistent Storage

### Lab Software Requirements:

- Open Source Web Development tools. (Linux – Apache – MySQL – PHP)

### List of Exercises:

1. Exercises to make the student acquire Static Web Page designing skills.
2. Exercises to make the student acquire Style Sheet Design and usage skills.
3. Exercises to make the student acquire Client Side Scripting skills.
4. Exercises to make the student acquire Server Side Scripting skills
5. Exercises to make the student acquire Database Manipulation skills.

**M.C.A.**  
**FOURTH SEMESTER**  
**PROJECT WORK & VIVA-VOCE**

**M.C.A.  
SUPPORTIVE CORE COURSE  
(3 CREDITS)**

## MCAP 431: MATHEMATICS FOR COMPUTER SCIENCE

L	T	P	C
3	0	0	3

### Pre-requisite:

- Knowledge of functions and basic Algebra

### Objectives:

- Introduce the mathematical concepts fundamental to Computer science.
- To illustrate the applications of Mathematical concepts to Computer science

### Outcomes:

- Ability to understand the fundamental mathematical concepts involved in Computer Science
- Getting familiarized with mathematical concepts such as number theory, algebraic structures.

### Module-I:

(10 Hrs)

**Logics and Proofs:** Propositional Logic – Predicates – Proofs – Methods and strategies.

### Module-II:

(9 Hrs)

**Basic Structures and Relations:** Sets – Functions – Sequences – Sums – Matrices. Relations – properties – representation

### Module-III:

(9 Hrs)

**Number Theory:** Divisibility and Modular Arithmetic – integer – algorithm – prime and GCD – Congruences.

### Module-IV:

(9 Hrs)

**Algebraic Structures:** Groups – cyclic group - Homomorphism – Cosets and Lagrange's Theorem- Normal Subgroups –Rings and Fields (definition and examples)

### Module-V:

(8 Hrs)

**Counting:** Basics – Pigeon hole principle – Permutations and combinations – Binomial coefficients.

### Text Books:

1. Kenneth H. Rosen, "Discrete Mathematics and its Applications", 7<sup>th</sup> Edition, Jones & Bartlett Learning, 2012.
2. Trembley. J.P and Manohar.R." Discrete Mathematical Structures with Applications to Computer Science", Tata McGraw Hill Pub. Com. Ltd., New Delhi, Reprinted in 2007.

# MCAP 432: MANAGEMENT CONCEPTS AND STRATEGIES

L	T	P	C
3	0	0	3

## Course Pre-requisite:

- Nil -

## Course Objectives:

At the end of the Course the Student will be able to:

- Discuss Fundamentals of Management & Decision Making
- Analyze Management & Communication Process Concepts
- Understanding techniques for Management System

## Outcomes:

- Understand Fundamentals of Management & Decision Making
- Analyze Management & Communication Process Concepts
- Understand various techniques for Management

## **Module-I:Management Theories**

(9 Hrs)

Science Theory and Practice - Management and Society: Social Responsibility and Ethics. The nature and purpose of planning - objectives – Strategies Policies and planning premises.

## **Module-II:Decision Making**

(9 Hrs)

The Nature and purpose of organizing - Basic departmentalization - Line/Staff Authority and Decentralization - Effective Organizing and organizational culture.

## **Module-III:Human Resource Management & Selection**

(9 Hrs)

Performance appraisal and career strategy - Manager and organizational development.

## **Module-IV:Managing the Human factor**

(9 Hrs)

Motivation - Leadership -Communication.

## **Module-V:The System & Process of Controlling**

(9 Hrs)

Control techniques and Information Technology - Productivity and Operations Management - Overall and Preventive Control - Towards a Unified, Global management theory.

## TEXT BOOKS:

1. Herald Knootz and Heinz Wehrich, "Essentials of Management", McGraw-Hill Publishing Company, Singapore International Edition, 2000.
2. Ties AF, Stoner and R. Edward Freeman, "Management", Prentice Hall of India Pvt., Ltd., New Delhi, 2003.
3. Joseph I, Massie, "Essentials of Management", Prentice Hall of India Pvt., Ltd., New Delhi, 2002.

**M.C.A.**  
**SKILL ENHANCEMENT COURSES**



## ONLINE/ CERTIFICATE COURSE

<i>L</i>	<i>T</i>	<i>P</i>	<i>C</i>
-	-	-	2

### **Guidelines:**

- (1) Any Relevant Online Courses from NPTEL / CoursEra / Udacity, Edx, etc.,
- (2) The Duration of the Online Course should be for a Minimum of Eight weeks.
- (3) The Online Courses should be Chosen with the Formal Prior Approval of the Concern Faculty Advisor.
- (4) The Successful Completion Certificate from the Concerned E-Learning website, need to be submitted within the Duration as per Pondicherry University Regulations.

## MCAP 531: SIMULATION AND MODELLING TOOLS

<i>L</i>	<i>T</i>	<i>P</i>	<i>C</i>
0	1	2	2

### Pre-requisite:

- Knowledge in any Structured Programming Language and OOPs.

### Objectives:

- To understand the various components of SciLab and SimPy

### Outcomes:

- Ability to simulate using various components of SciLab and SimPy

### **Module-I: Introduction to SciLab**

(25Hrs)

Introduction to SciLab – SciLab Objects – SciLab Programming – Input & Output Functions – SciLab Graphics – Interfacing.

### **Modeling & Simulation in SciLab**

Types of Models – Ordinary Differential Equations – Boundary value Problems – Differential Algebraic Equations – Hybrid Systems. Simulation Tools.

### **Optimization in SciLab**

General Optimization – Solving Nonlinear Equations – Nonlinear Least Squares – Parameter Fitting – Linear and Quadratic Programming.

### **Module-II: Introduction to SimPy**

(20 Hrs)

Basic Concepts – Environments & Events – Process Interaction – Shared Resources – Real Time Simulations

### Text Book(s):

1. Stephen L. Campbell, Jean-Philippe Chancelier and Ramine Nikoukhah “Modeling and Simulation in SciLab/Scicos”, Springer, 2006.
2. SimPy Documentation, “Team SimPy”, 2019.

# MCAP 532 MOBILE APPLICATION DEVELOPMENT

L	T	P	C
0	1	2	2

## Pre-requisite:

- Basic Understanding of Programming Concepts

## Objectives:

- To Understand System Requirements for Mobile Applications
- To Acquire Mobile Application Development Skills

## Outcomes:

- Understand system requirements for Mobile Applications
- Ability to develop various mobile applications.

### **Module-I: Introduction to Mobile Application** (9 Hrs)

Embedded System-Market and Business drivers for Mobile Application-Publishing and delivering of Mobile Application-Requirements gathering and validation for Mobile Application

### **Module-II: Basic Design** (9 Hrs)

Basics of Embedded system design –Embedded OS- Design constraints for Mobile Application for both for hardware and software. Architecture for Mobile Application- User Interface for Mobile Application- Touch events and Gestures-Achieving Quality constraints: Performance, Usability, Scalability, Availability and Modifiability

### **Module-III: Advanced Design** (9 Hrs)

Designing application with Multi Media and web access capabilities – Introduction with GPS and social media- Networking Applications-Accessing Applications hosted in cloud computing Environment-Design platform for Mobile Application

### **Module-IV: Basic Android Technology** (9 Hrs)

Introduction-Establishing the development Environment-Android Architecture- Activities and Views-Interacting with User Interface -Persisting data using SQLite - Packaging and development

### **Module-V: Advanced Android Technology** (9 Hrs)

Introduction to server-side Application- Using Google Apps- GPS- Wifi - Introduction to social media application

## Text Books:

1. Jeff McWherter and Scott Gowell, "Professional Mobile Development", Wrox Publications.
2. Charlie Collins and Micheal Galpin, "Android in Practice", Dream Tech.2012.

## MCAP 533 SOFTWARE TESTING TOOLS

L	T	P	C
0	1	2	2

### Pre-requisite:

- Basic programming skills

### Objectives:

- To Get Familiarized with Software Testing Concepts & Tools
- To Understand the Test Automation Process

### Outcomes:

- Performing software testing using various tools.

### **Module-I: Testing Fundamentals**

(9 Hrs)

Software Testing - Introduction – Importance- Seven Fundamental Principles of Testing- SDLC Vs STLC- Software Testing Life Cycle.

### **Module-II: Types of Testing**

(9 Hrs)

Manual Testing Tutorials for Beginners- Automation Testing- Unit Testing- Integration Testing- System Testing- Smoke and Sanity Testing- other Testing Techniques

### **Module-III: Basics of automation testing**

(9 Hrs)

Why, when and how to perform automation Testing-Factors for choosing a particular tool-An overview for the major functional testing Tools-Overview of Test management and bug tracking tools

### **Module-IV:**

(9 Hrs)

Test Management Tool-Test Link, *Load Testing Tool* -LoadUIPro

### **Module-V:**

(9 Hrs)

Automated Testing Tool-Selenium

### Text Books:

1. Glenford J Myers, Corey Sandler & Tom Badgett, "The Art of Software Testing", 3rd Edition, 2011.
2. Lee Copeland, "A Practitioner's Guide to Software Test Design", 2004.
3. Boris Beizer, "Software Testing Techniques", 2nd edition,1990.

## MCAP 534: MULTIMEDIA TOOLS

L	T	P	C
0	1	2	2

### Pre-requisite:

- Basic Computer knowledge.

### Objectives:

- Gain an ability to create a graphics presentation
- Gain an understanding of designing web page using Dreamweaver.
- Gain an understanding of advanced web design tools such as Flash.
- Gain an ability to use Photoshop.

### Outcomes:

- Ability to use various multimedia tools to build presentations, advertisements, business brochure etc.

### **Module-I:**

(25 Hrs)

Introduction to Multimedia concepts – Components of multimedia: Text, image, audio, video and animation -Linear and Non-linear multimedia – Interactive multimedia – web based multimedia.

### **Module-II:**

(20 Hrs)

Create multimedia graphics presentation, an advertisement, business brochure - Take and edit photographs using multimedia tools.

### Text Books:

1. Mohammad Dastbaz, "Design & Development of Interactive Multimedia Systems", McGraw-Hill Education, 2002.
2. David Hillman, "Multimedia: Technology and Applications", Galgotia Publications, Delhi.
3. Adele Droblas Greenberg and Seth Greenberg, "Photoshop 6: The Complete Reference", Tata McGraw-Hill Publishing Company Limited, New Delhi.
4. Banerji, "Multimedia Technologies", Tata McGraw-Hill Education 2010.

## MCAP 535: PYTHON PROGRAMMING

L	T	P	C
0	1	2	2

### Pre-requisite:

- Basic Knowledge in Programming Concepts

### Objectives:

- To impart Python programming skills.
- To enable the students to build solutions with Python

### Outcomes:

- Developing basic Python programs.

### **Module-I:** (10 Hrs)

Introduction to Python – Advantages of using Python – Executing Python Programs – Python’s Core data types – Numeric Types – String Fundamentals.

### **Module-II:** (20 Hrs)

Lists – Dictionaries – Tuples – Python Statements: Assignments – Expressions – If Tests – While and For Loops.

Functions: Definition, Calls – Scopes – Arguments – Recursive Functions – Functional Programming tools.

Classes and Object Oriented programming with Python - Modules and Packages: Purpose, using packages– Exception Handling with Python.

### **Module-III:** (15 Hrs)

Database Handling using Python – NumPy – Pandas – Machine learning with Python – Data Visualization in Python.

### Reference Books:

1. Mark Lutz, Learning Python, Fifth Edition, O’Reilly, 2013.
2. Michael Dawson, Python Programming for the absolute Beginner, 2010.

### MOOC Courses:

1. The Joy of Computing using Python, NPTEL, <https://nptel.ac.in/courses/106106182/>

**M.C.A.**  
**OPEN ELECTIVE COURSES**  
**(3 Credits)**

One Course from other Department (Non Computer Science)

(or)

Domain Specific Electives of any specialisation related to  
Computer Science

**M.C.A.  
DOMAIN SPECIFIC ELECTIVES  
(9 Credits)**

**STREAM 1: INFORMATION SECURITY**



# MCAP 441: FUNDAMENTALS OF CRYPTOGRAPHY

L	T	P	C
3	0	0	3

## Prerequisites:

- Basic knowledge of Cryptographic Concepts

## Objectives:

- To Learn Mathematical Cryptographic Algorithms
- To Learn Modern Cryptography
- To learn Secure Protocols for Secure Transactions

## Outcomes:

- Ability to understand various cryptography concepts.
- Acquiring skills to work with block chain and analyse various cryptographic protocols.

### **Module-I: Introduction to Cryptography**

**(9 hrs)**

History and overview of Cryptography – Introduction to Secure Programming - API's for Secure Programming - Java Cryptography Extension – .Net Cryptography Extension

### **Module-II: Elementary Number Theory**

**(9 hrs)**

Prime numbers, Factoring – Modular Arithmetic – Fermat's & Euler's Theorem – GCD, Euclid's Algorithm – Discrete Logarithm Problem – Implementing all the algorithms and Theorems using JCE/. NCE

### **Module-III: Modern Cryptography**

**(9 hrs)**

Symmetric Key Encryption - Message Integrity – Public Key Cryptography – Digital Signatures – Implementation of DES, RSA, TDES, ECC, IDEA, MD, SHA – Implementing all the algorithms using JCE/. NCE

### **Module-IV: Financial Cryptography**

**(9 hrs)**

Cryptocurrency - Block chain Applications – Contactless Payments and Ticketing Systems – Digital Cash and Payment Systems – Secure banking and Financial Services – Microfinance and Micropayments – Implementation of Cryptocurrency and Block chain using JCE/. NCE

### **Module-V: Cryptographic Protocols**

**(9 hrs)**

SSL/TLS, SSH, TLS, HTTP/HTTPS, IPSEC, P2P, PGP – Security Protocols – Implementation of All Protocols using JCE/. NCE

## Text Books:

1. David Hook 'Beginning Cryptography with Java' 2005, ISBN:978-0-7645-9633-9
2. William Stallings, Cryptography and network security, Pearson Education.
3. Alfred J. Menezes, Paul C. van Oorschot and Scott A. Vanstone, Hand- book of Applied Cryptography, CRC Press.

**Reference Books:**

1. Margaret Cozzens, Steven J Miller, The mathematics of encryption, American Mathematical Society
2. Bruce Schneier Applied Cryptography, John Wiley and Sons
3. Mark Stamp, Information Security: Principles and Practice, John Wiley and Sons
4. Matt Bishop, Computer Security, Art and Science, Pearson Education
5. Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfeder Bitcoin and Cryptocurrency Technologies, Draft 2015.

## MCAP 442: DATABASE AND APPLICATION SECURITY

L	T	P	C
3	0	0	3

### **Prerequisites:**

- Knowledge of Database Management Systems and Database Administration

### **Objectives:**

- Describe and apply Security Policies on Databases
- Understand Authentication and Password Security
- Know about Application Vulnerabilities
- Understand about Auditing Techniques

### **Outcomes:**

- Ability to understand various components of database and application security.
- Acquiring skills to encrypt and audit the data, analysing application security and vulnerabilities.

### **Module-I: Database Security**

**(9 Hrs)**

Introduction to database Security – Security in Information Technology – importance of data – data review – identity theft – levels of security – Human level: Corrupt/careless user, Network/User Interface, Database application program, Database system, Operating System, Physical level

### **Module-II: Authentication and Authorization**

**(9 Hrs)**

Passwords, Profiles, Privileges and Roles - Authentication – operating system authentication, database authentication, Network or third-party authentication, Database vector password policies -Authorization – User Account authorization - Database/Application Security - Limitations of SQL Authorization – Access Control in Application Layer - Oracle Virtual Private Database – Privacy

### **Module-III: Securing Database to Database Communications**

**(9 Hrs)**

Monitor and limit outbound communications – secure database links – protect link usernames and passwords – monitor usage of database links – secure replication mechanisms - map and secure all data sources and sinks. Trojans – four types of database Trojans.

### **Module-IV: Encrypting and Auditing the Data**

**(9 Hrs)**

Encrypting data in transit – encrypting data at rest – auditing architectures – audit trail – architectures of external audit systems - archive auditing information – secure auditing information – audit the audit system.

### **Module-V: Application Security & Vulnerabilities**

**(9 Hrs)**

Application Security – Application Vulnerabilities - OWASP Top 10 Web Security Vulnerabilities - Unvalidated input, Broken access control, Broken account/session management, Cross-site scripting (XSS) flaws, Buffer overflows - SQL Injection flaws, Improper error handling, Insecure storage, Denial-of service, Insecure configuration management – Insecure File Handling

### **Text Books:**

1. Ron Ben-Natan, "Implementing Database Security and Auditing: A Guide for DBAs, Information Security Administrators and Auditors", Published by Elsevier, 2005.
2. Silvana Castano, "Database Security", Published by Addison-Wesley, 1994.
3. Alfred Basta, Melissa Zgola, Dana Bullaboy, Thomas L. Witlock SR, "Database Security", google books, 2011.
4. Silberschatz, Korth and Sudarshan, "Database System Concepts", 6th Edition, 2010.

### **Web Resources:**

1. The Open Web Application Security Project, <http://www.owasp.org>
2. Web application security scanners, <http://www.Windowsecurity.com/software/Web-Application-Security>
3. SQL Injection, <http://www.cgisecurity.com/development/sql.shtml>
4. 9 ways to hack a web app, <http://developers.sun.com/learning/javaoneonline/2005/webtier/TS-5935.pdf>
5. Database security, [http://docs.oracle.com/cd/B19306\\_01/server.102/b14220/security.htm](http://docs.oracle.com/cd/B19306_01/server.102/b14220/security.htm)

## MCAP 443: MOBILE AND DIGITAL FORENSICS

### Prerequisites:

- Knowledge of Computer Networks and information security

L	T	P	C
3	0	0	3

### Objectives:

- Understand the Basics of wireless technologies and security
- Become Knowledgeable in mobile phone forensics and Android Forensics
- Learn the methods of investigation using Digital Forensic techniques

### Outcomes:

- Ability to understand the processes involved in mobile and digital forensics.
- Acquiring skills to analyse mobile and digital forensics techniques.

### **Module-I: Introduction to Wireless Technologies**

**(9 Hrs)**

Overview of wireless technologies and security: Personal Area Networks, Wireless Local Area Networks, Metropolitan Area Networks, Wide Area Networks. Wireless threats, vulnerabilities and security: Wireless LANs, War Driving, War Chalking, War Flying, Common Wi-Fi security recommendations, PDA Security, Cell Phones and Security, Wireless DoS attacks, GPS Jamming, Identity theft.

### **Module-II: Security Framework for Mobile Systems**

**(9 Hrs)**

CIA triad in mobile Phones-Voice, SMS and Identification data interception in GSM: Introduction, practical setup and tools, implementation- Software and Hardware Mobile phone tricks: Netmonitor, GSM network service codes, mobile phone codes, catalog tricks and AT command set- SMS security issues.

### **Module-III: Mobile Phone Forensics**

**(9 Hrs)**

Crime and mobile phones, evidences, forensic procedures, files present in SIM card, device data, external memory dump, evidences in memory card, operators systems- Android forensics: Procedures for handling an android device, imaging android USB mass storage devices, logical and physical techniques.

### **Module-IV: Introduction to Digital Forensics**

**(9 Hrs)**

Digital forensics: Introduction – Evidential potential of digital devices: closed vs. open systems, evaluating digital evidence potential- Device handling: seizure issues, device identification, networked devices and contamination.

### **Module-V: Analysis of Digital Forensic Techniques**

**(9 Hrs)**

Digital forensics examination principles: Previewing, imaging, continuity, hashing and evidence locations- Seven element security model- developmental model of digital systems- audit and logs- Evidence interpretation: Data content and context.

**References:**

1. Iosif I. Androulidakis, "Mobile phone security and forensics: A practical approach", Springer publications, 2012.
2. Andrew Hoog, "Android Forensics: Investigation, Analysis and Mobile Security for Google Android", Elsevier publications, 2011.
3. Angus M. Marshall, "Digital forensics: Digital evidence in criminal investigation", John – Wiley and Sons, 2008
4. Gregory Kipper, "Wireless Crime and Forensic Investigation", Auerbach Publications.

## MCAP 444: MALWARE ANALYSIS

L	T	P	C
3	0	0	3

### Prerequisites:

- Network Security

### Objectives:

- To understand the Computer infection program
- To implement the Covert channel and mechanisms
- To test and exploit various malware in open source environment
- To analyze and design the famous virus and worms

### Outcomes:

- Ability to understand various types of malware and threats.
- Acquiring skills to use open source to analyse malware.

### **Module-I: Introduction**

**(9 hrs)**

Computer Infection Program- Life cycle of malware- Virus nomenclature- Worm nomenclature- Tools used in computer virology.

### **Module-II: Implementation of Covert Channel**

**(9 hrs)**

Non-self-reproducing Malware- Working principle of Trojan Horse- Implementation of Remote access and file transfer- Working principle of Logical Bomb - Case Study: Conflicker C worm.

### **Module-III: Virus Design and Its Implications**

**(9 hrs)**

Virus components- Function of replicator, concealer and dispatcher- Trigger Mechanisms- Testing virus codes- Case Study: Brute force logical bomb.

### **Module-IV: Malware Design Using Open Source**

**(9 hrs)**

Computer Virus in Interpreted programming language- Designing Shell bash virus under Linux- Fighting over infection- Anti –antiviral fighting – Polymorphism- Case study: Companion virus.

### **Module-V: Virus and Worm Analysis**

**(9 hrs)**

Klez Virus- Clone Virus- Doom Virus- Black wolf worm- Sassar worm- Happy worm 99.

### Text Books:

1. ErciFiliol, "Computer Viruses: from theory to applications", Springer, 1st edition, 2005. ISBN 10: 2-287-23939-1
2. Mark. A. Ludwig, "The Giant black book of computer viruses, Create Space Independent Publishing Platform, 2nd edition, 2009, ISBN 10: 144140712X.

### Web Resources:

1. <http://www.crysys.hu/downloads/vihimb01/2017/MW-meres.pdf>

## MCAP 445: INFORMATION SYSTEM AUDIT

L	T	P	C
3	0	0	3

### Prerequisites:

- Basic knowledge on Information Systems and Security

### Objectives:

- Examine the Multiple layers of IS security in organizations.
- Analyze the Risk management approach to information assets' security with respect to operational and organizational goals.
- Evaluate Physical and logical security controls, and the automated approaches in IS security.

### Outcomes:

- Ability to understand auditing Information Systems process.
- Acquiring skills to perform information system audit.

### **Module-I: Introduction**

**(9 hrs)**

Information Systems Audit Standards and Practices and Information System Security and Control Practices: Standards and Guidelines for IS Auditing -The Control Objectives - Other Laws and Regulations

### **Module-II: Auditing Information Systems Organization and Management**

**(9 hrs)**

Information Systems Strategies to achieve business management objectives - Policies and Procedures - Information Systems Management Practices - Organizational Structure - Audit and Evaluation Techniques

### **Module-III: Auditing the Information Systems Process**

**(9 hrs)**

Information Systems Hardware Platform - Information Systems Software Platform - Information Systems Network and Telecommunication Infrastructure - Information System Operational Practices

### **Module-IV: Information Systems Integrity, Confidentiality and Availability**

**(9 hrs)**

Logical Access Controls - Physical Access Controls - Environmental Controls - Data validation, processing and balancing controls - Business Continuity Planning and testing

### **Module-V: Auditing Information Systems Software Development, Acquisition and Maintenance**

**(9 hrs)**

System Integration Concepts - SDAM Methodologies - SDAM Practices - Information Systems Maintenance Practices

### Text Books:

1. "Principles of Information Security", by Michael E. Whitman and Herbert J. Mattord, Thomson Course Technology, 2003, ISBN: 0619063181
2. Handbook of Information Security Management, by Micki Krause and Harold F. Tipton, ISACA Publication, 1999.



3. Handbook of IT Auditing, D.Warren, L.Edelson, X.Parker, Coopers & Lybrand LLP, Warren, Gorham & Lamont. Boston, 1995 with 1999 supplement.
4. The information audit: an important management tool / Katherine Bertolucci. - Managing Information, June 1996, vol.3, no.6, p.34-35.
5. The value and impact of information / edited by M. Feeney and M. Grieves. - London: Bowker Saur, 1994. - ISBN 1 85739 084 9.
6. The value of information to the intelligent organisation. - Hatfield: University of Hertfordshire Press, 1994. - ISBN 0 900458 54 2.
7. Porter, M. E. (1985). Competitive Advantage: Creating and Sustaining Superior Performance. New York, N.Y.: Collier Macmillan.

**Web Resources:**

1. [www.c3i.osd.mil/org/cio/i3/AWG\\_Digital\\_Library/index.htm](http://www.c3i.osd.mil/org/cio/i3/AWG_Digital_Library/index.htm)
2. [www.isaca.org](http://www.isaca.org)
3. [www.bsi.org](http://www.bsi.org)
4. [www.isaca.org/gir](http://www.isaca.org/gir)
5. [www.isaca.org/cobit.htm](http://www.isaca.org/cobit.htm)

# MCAP 446: INFORMATION SECURITY MANAGEMENT

L	T	P	C
3	0	0	3

## Prerequisites:

- Basic Understanding of Computer Networks.

## Objectives:

- Review, Refresh and Expand the Information Security Knowledge (including information security concepts and industry best practices).

## Outcomes:

- Ability to understand the processes involved in Information Security management.
- Ability to understand communication and network security, identity and access management.

## **Module-I: (9 hrs)**

**Security and Risk Management** (Security, Risk, Compliance, Law, Regulations, and Business Continuity): Confidentiality, integrity, and availability concepts - Security governance principles – Compliance - Legal and regulatory issues - Professional ethic - Security policies, standards, procedures and guidelines

## **Module-II: (9 hrs)**

**Asset Security** (Protecting Security of Assets): Information and asset classification - Ownership (e.g. data owners, system owners) - Protect privacy - Appropriate retention - Data security controls - Handling requirements (e.g. markings, labels, storage)

## **Module III: (9 hrs)**

**Security Engineering** (Engineering and Management of Security) - Engineering processes using secure design principles - Security models fundamental concepts - Security evaluation models - Security capabilities of information systems - Security architectures, designs, and solution elements vulnerabilities – Web based systems vulnerabilities - Mobile systems vulnerabilities - Embedded devices and cyber physical systems vulnerabilities – Cryptography - Site and facility design secure principles – Physical Security

## **Module-IV: (9 hrs)**

**Communication and Network Security** (Designing and Protecting Network Security): Secure network architecture design (e.g. IP & non - IP protocols, segmentation) - Secure network components - Secure communication channels - Network attacks

## **Module-V: (9 hrs)**

**Identity and Access Management** (Controlling Access and Managing Identity) - Physical and logical assets control - Identification and authentication of people and devices - Identity as a service (e.g. cloud identity) – Third-party identity services (e.g. on- premise) - Access control attacks - Identity and access provisioning lifecycle (e.g. provisioning review)

## References:

1. James M. Stewart, Ed Tittel, Mike Chapple 'CISSP: Certified Information Systems Security Professional Study Guide', Wiley 2008.

## MCAP 447: CLOUD SECURITY

L	T	P	C
3	0	0	3

### Pre-requisite:

- Security and methods to improve virtualization security are also dealt with in this course. Cloud security introduces the basic concepts of security systems and cryptographic protocols, which are widely used in the design of cloud security. The issues related to multi-tenancy operation, virtualized infrastructure.

### Objectives:

- Compare modern security concepts as they are applied to cloud computing
- Assess the security of virtual systems
- Evaluate the security issues related to multi-tenancy
- Appraise compliance issues that arise from cloud computing

### Outcomes:

- Ability to understand the processes involved in cloud security.
- Acquiring skills to implement virtualization systems and enhancing virtualization based security.

### **Module-I: Security Concepts**

**(9 hrs)**

Confidentiality, privacy, integrity, authentication, non-repudiation, availability, access control, defense in depth, least privilege, how these concepts apply in the cloud, what these concepts mean and their importance in PaaS, IaaS and SaaS. e.g. User authentication in the cloud; Cryptographic Systems- Symmetric cryptography, stream ciphers, block ciphers, modes of operation, public-key cryptography, hashing, digital signatures, public-key infrastructures, key management, X.509 certificates, OpenSSL.

### **Module-II: Multi-Tenancy Issues**

**(9 hrs)**

Isolation of users/VMs from each other. How the cloud provider can provide this; Virtualization System Security Issues- e.g. ESX and ESXi Security, ESX file system security, storage considerations, backup and recovery; Virtualization System Vulnerabilities- Management console vulnerabilities, management server vulnerabilities, administrative VM vulnerabilities, guest VM vulnerabilities, hypervisor vulnerabilities, hypervisor escape vulnerabilities, configuration issues, malware (botnets etc).

### **Module-III: Virtualization System**

**(9 hrs)**

Specific Attacks: Guest hopping, attacks on the VM (delete the VM, attack on the control of the VM, code or file injection into the virtualized file structure), VM migration attack, hyperjacking. System attacks: Management Server attack, Administrative VM attack, Guest VM attacks, Hypervisor attacks.

**Module-IV: Technologies for Virtualization-Based Security Enhancement (9 hrs)**

*IBM security virtual server protection, virtualization-based sandboxing; Storage Security-HIDPS, log management, Data Loss Prevention. Location of the Perimeter.*

**Module-V: Legal and Compliance Issues (9 hrs)**

*Responsibility, ownership of data, right to penetration test, local law where data is held, examination of modern Security Standards (eg PCIDSS), how standards deal with cloud services and virtualization, compliance for the cloud provider vs. compliance for the customer.*

**References:**

1. Tim Mather, SubraKumaraswamy, ShahedLatif, *Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance* [ISBN: 0596802765]
2. Ronald L. Krutz, Russell Dean Vines, *Cloud Security* [ISBN: 0470589876]
3. John Rittinghouse, James Ransome, *Cloud Computing* [ISBN: 1439806802]
4. J.R. ("Vic") Winkler, *Securing the Cloud* [ISBN: 1597495921]
5. Cloud Security Alliance 2009, *Security Guidance for Critical Areas of Focus in Cloud Computing* VMware Security Hardening Guide
6. Cloud Security Alliance 2010, *Top Threats to Cloud Computing*
7. NIST Guidelines on Security and Privacy in Public Cloud Computing
8. NIST Guide to Security for Full Virtualization Technologies
9. NIST The NIST Definition of Cloud Computing
10. William Hau, Rudolph Araujo et al *How Virtualization Affects PCI DSS*  
[www.mcafee.com/us/resources/.../wp-how-virt-affect-pci-dss-part-1.pdf](http://www.mcafee.com/us/resources/.../wp-how-virt-affect-pci-dss-part-1.pdf)

## MCAP 448: ETHICAL HACKING

L	T	P	C
3	0	0	3

### Prerequisites:

- Basic Understanding of Network Security & Threat Mechanisms

### Objectives:

- To Understand the Ethical Hacking Process
- To Get familiarized with Tools and Techniques of Ethical Hacking

### Outcomes:

- Ability to understand the processes involved in ethical hacking.
- Acquiring skills to analyse malware threats and developing solutions.

### **Module-I:**

**(9 hrs)**

Introduction to Ethical Hacking: Information security overview – skills of an ethical hacker – Hacking concepts and phases - Types of attacks – Information Security threats, attack vectors, and controls – Information Assurance (IA) – Information Security Laws and Standards – Security Policies types, HR/legal implications – Physical Security – Threat Modelling – Enterprise Information Security Architecture (EISA) – Network Security Zoning.

### **Module-II:**

**(9 hrs)**

Foot Printing & Reconnaissance: Foot printing concepts, threats, attack vectors and controls, Foot printing through Search Engines, Foot Printing through Social Networking sites, Website Foot printing, Competitive Intelligence, WHOIS Foot printing, Foot Printing tools. Scanning Networks: Scanning Methodology, techniques, and countermeasures - Techniques for IDS evasion, scanning, HTTP tunneling, and IP spoofing - Drawing network diagrams—latest network discovery and mapping tools, network discovery tools for mobile - Proxy chaining—latest proxy tools, proxy tools for mobile Enumeration: Protocols: NetBIOS, SNMP, LDAP, NTP, SMTP, DNS – Countermeasures - Techniques

### **Module-III:**

**(9 hrs)**

System Hacking: Cracking passwords, escalating privileges, executing applications, hiding files and covering tracks – Steganography application and classification, tools, methods/attacks on Steganography, Steganography detection tools. Practical: Foot Printing & Reconnaissance, Scanning Networks, Enumeration, System Hacking

### **Module-IV:**

**(9 hrs)**

Malware Threats: Introduction to malware – Trojans attacks, how to infect a system, crypters, how to deploy, latest types, analysis, countermeasures - Viruses—stages, types, latest virus maker, analysis, countermeasures - Worms—types, makers, analysis, countermeasures - Malware analysis - Antivirus tools - Penetration testing.

**Module-V:****(9 hrs)**

Sniffing: Attacks: MAC, DHCP, and spoofing - Poisoning: ARP and DNS – Tools Social Engineering: Concepts, techniques, impersonation, identity theft, and Counter measures - Phases of an attack - Common targets of an attack - Impersonation scenario - Computer based, mobile based, social networking based Denial of Service: Concepts, case study, tools, attack techniques, and Countermeasures Botnet - Scanning methods for vulnerable machines - Detection Techniques and tools. Session Hijacking: Concepts, case study, tools, attack techniques, and Countermeasures - Five stages of a web malware attack - Application level session hijacking - Network level session hijacking - TCP/IP Hijacking. Practical: Trojans and Backdoors, Viruses and Worms, Sniffers, Social Engineering, Denial of Service, Session Hijacking

**References:**

1. Kimberly Graves, “CEH: Certified Ethical Hacker Study Guide”, Wiley; 2010.

**M.C.A.  
STREAM 2:  
SOFTWARE ENGINEERING**

## MCAP 451: OBJECT ORIENTED SYSTEM DESIGN

L	T	P	C
3	0	0	3

### Pre-requisite:

Nil

### Objectives:

- To learn the fundamentals of OOSD
- To learn the various Object Oriented Design Models and Testing Objects

### Outcomes:

- Ability to understand the fundamentals of object oriented system design.
- Acquiring skills to develop object oriented system design.

### **Module-I: Object Oriented Design Fundamentals (9 hrs)**

Review of Object Oriented systems, Design objects, class hierarchy, Inheritance, Polymorphism, Object relationship, Association, Object persistence, metaclass - Object Oriented Systems development life cycle, Comparison of Object oriented methodologies over Traditional methodologies, Different methodologies for Object Oriented design (Rumbaugh, Booch, Jacobson)

### **Module-II: Object Oriented Analysis (9 hrs)**

Different approaches for identifying classes, CRC , COAD Yourdon, Shellor mellor method, Identifying object relationships, attributes and methods. Aggregations, Use case analysis.

### **Module-III: Object Oriented Design and Development (9 hrs)**

The Unified approach, UML History, Overview of UML, Different diagrams of UML, Capabilities Usage of UML. Architecture (4+1 view) OO Software Development Process – Different phases

### **Module-IV: Object Oriented Testing Maintenance (9 hrs)**

Quality assurance Tests - Testing strategies - impact of object orientation on Testing - Test cases - Test Plan- Continuous Testing - Evaluation Testing, Coding, Maintenance, Metrics

### **Module-V: Case Studies (9 hrs)**

Object oriented data model, query languages, storage organization and indexing techniques; object relational databases, ATM, Telecom and Different Case Studies.

### Text Books:

1. Ali Bahrami, "Object Oriented System Development", Mc-Graw Hill International Edition, 1999.
2. Grady Booch, James Rumbaugh, Ivar Jacobson, "The Unified Modeling Language User Guide", Addison - Wesley Longman, 1999.

### Reference Book:

1. The Unified Modeling Language User Guide. – Addison Wesley, Booch, Rumbaugh, Jacobson, 2000.



## MCAP 452: SOFTWARE ARCHITECTURE

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Knowledge in Software Engineering

### Objectives:

- Understand software Architectural Requirements and drivers.
- Be exposed to architectural styles and views.

### Outcomes:

- Get familiarized with various software architectures and emerging technologies.

### **Module-I: Introduction and Architectural Drivers (9 hrs)**

Introduction – What is software architecture? – Standard Definitions – Architectural structures – Influence of software architecture on organization-both business and technical – Architecture Business Cycle- Introduction – Functional requirements – Technical constraints – Quality Attributes.

### **Module-II: Quality Attribute Workshop (9 hrs)**

Quality Attribute Workshop – Documenting Quality Attributes – Six-part scenarios – Case studies.

### **Module-III: Architectural Views (9 hrs)**

Introduction – Standard Definitions for views – Structures and views – Representing views-available notations – Standard views – 4+1 view of RUP, Siemens 4 views, SEI's perspectives and views – Case studies.

### **Module-IV: Architectural Styles (9 hrs)**

Introduction – Data flow styles – Call-return styles – Shared Information styles – Event styles – Case studies for each style.

### **Module-V: Documenting the Architecture (9 hrs)**

Good practices – Documenting the Views using UML – Merits and Demerits of using visual languages – Need for formal languages – Architectural Description Languages – ACME – Case studies. Special topics: SOA and Web services – Cloud Computing – Adaptive structures.

### Text Books:

1. Len Bass, Paul Clements, and Rick Kazman, "Software Architectures Principles and Practices", 2nd Edition, Addison-Wesley, 2003.
2. Anthony J Lattanze, "Architecting Software Intensive System. A Practitioner's Guide", Auerbach Publications, 2010.

### **Reference Books:**

1. Paul Clements, Felix Bachmann, Len Bass, David Garlan, James Ivers, Reed Little, Paulo Merson, Robert Nord, and Judith Stafford, "Documenting Software Architectures. Views and Beyond", 2nd Edition, Addison-Wesley, 2010.
2. Paul Clements, Rick Kazman, and Mark Klein, "Evaluating software architectures: Methods and case studies. Addison-Wesley, 2001.
3. Rajkumar Buyya, James Broberg, and Andrzej Goscinski, "Cloud Computing. Principles and Paradigms", John Wiley & Sons, 2011.
4. Mark Hansen, "SOA Using Java Web Services", Prentice Hall, 2007.

# MCAP 453: SOFTWARE PROJECT MANAGEMENT

L	T	P	C
3	0	0	3

## Pre-requisite:

- Software Engineering Principles.

## Objectives:

- This Course is intended to provide the students with an overall view over Software Engineering Discipline and with insight into the processes of software development.
- To understand the various methods of Cost Estimation.
- To Study about Software Quality Management.
- To Study about Software Metrics

## Outcomes:

- Ability to understand various software project management concepts.
- Ability to perform cost estimation and project evaluation.

## **Module-I: Project Concepts and Its Management (9 hrs)**

Project life cycle models-ISO 9001 model - Capability Maturity Model - Project, Planning-Project tracking-Project closure - Evolution of Software Economics –Software Management Process Framework: Phases, Artifacts, Workflows, Checkpoints – Software Management Disciplines: Planning / Project Organization and Responsibilities / Automation / Project Control – Modern Project.

## **Module-II: Cost Estimation (9 hrs)**

Problems in Software Estimation – Algorithmic Cost Estimation Process, Function, Points, SLIM (Software Life cycle Management), COCOMO II (Constructive Cost Model) – Estimating Web Application Development – Concepts of Finance, Activity Based Costing and Economic Value Added (EVA) – Balanced Score Card.

## **Module-III: Software Quality Management (9 hrs)**

Software Quality Factors – Software Quality Components – Software Quality Plan– Software Quality Metrics – Software Quality Costs – Software Quality Assurance-Standard – Certification – Assessment.

## **Module-IV: Software Management and Metrics (9 hrs)**

Software Configuration Management – Risk Management: Risk Assessment: Identification / Analysis / Prioritization – Risk Control: Planning / Resolution /Monitoring – Failure Mode and Effects Analysis (FMEA) –Defect Management-Cost Management. Software Metrics – Classification of Software Metrics: Product-Metrics: Size Metrics, Complexity Metrics, Halstead’s Product Metrics, Quality, Metrics, and Process metrics.

## **Module-V: Project Evaluation and Emerging Trends (9 hrs)**

Strategic Assessment–Technical Assessment–Cost Benefit Analysis–Cash Flow Forecasting– Cost Benefit Evaluation Technique–Risk Evaluation–Software Effort Estimation. Emerging Trends: Import of the internet on project Management –people Focused Process Models.

**Text Book:**

1. Ramesh Gopaldaswamy, "Managing and Global Software Projects", Tata McGraw Hill, 2017.
2. Neal Whitten, "Managing Software Development Projects", John Wiley & Sons, Inc., 2<sup>nd</sup> Ed., 1995.

**Reference Book(s):**

1. Demarco, T. and Lister, T. "Peopleware: Productive Projects and Teams, 2nd Ed.", Dorset House, 1999.
2. Royce, W. "Software Project Management: A Unified Framework", Addison-Wesley, 1998. Demarco, T. and Lister, T. "Peopleware: Productive Projects and Teams, 2ndEd.", Dorset House, 1999.
3. Fenton, N.E., and Pfleeger, S.L. "Software Metrics: A Rigorous and Practical Approach, Revised" Brooks Cole, 1998.
4. Kaplan, R.S., Norton, D.P. "The Balanced Scorecard: Translating Strategy into Action", Harvard Business School Press, 1996.
5. Boehm, B. W. "Software Risk Management: Principles and Practices" in IEEE Software, January 1991, pp32-41.
6. Grant, J.L. "Foundations of Economic Value Added", John Wiley & Sons, 1997.
7. Cooper, R., "The Rise of Activity-Based Costing- PartOne: What is an Activity-Based Cost System" Journal of Cost Management, Vol.2, No.2.

## MCAP 454: SOFTWARE TESTING

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Knowledge in Software Engineering

### Objectives:

- To understand Standard Software Testing Principles .
- To learn the Functionality of Automated Testing tools.

### Outcomes:

- Ability to understand various software testing techniques.
- Ability to incorporate specialize testing responsibilities

### **Module-I: Testing Environment and Test Processes (9 hrs)**

World-Class Software Testing Model – Building a Software Testing Environment – The Seven Step Testing process: Overview of Software Testing Process – Organizing for Testing – Developing the Test Plan – Verification Testing – Analyzing and Reporting Test Results – Acceptance Testing – Operational Testing – Post Implementation Analysis.

### **Module-II: Testing Techniques and Levels of Testing (9 hrs)**

Using White Box Approach to Test design - Static Testing Vs. Structural Testing – Code Functional Testing – Coverage and Control Flow Graphs –Using Black Box Approaches to Test Case Design – Random Testing – Requirements based testing –Decision tables –State-based testing – Cause-effect graphing – Error guessing – Compatibility testing – Levels of Testing - Unit Testing - Integration Testing - Defect Bash Elimination. System Testing - Usability and Accessibility Testing – Configuration Testing - Compatibility Testing - Case study for White box testing and Black box testing techniques.

### **Module-III: Incorporating Specialized Testing Responsibilities (9 hrs)**

Testing Client/Server Systems – Rapid Application Development Testing – Testing in a Multiplatform Environment – Testing Software System Security - Testing Object-Oriented Software – Object Oriented Testing – Testing Web based systems – Web based system – Web Technology Evolution – Traditional Software and Web based Software – Challenges in Testing for Web-based Software –Testing a Data Warehouse - Case Study for Web Application Testing.

### **Module-IV: Test Automation (9 hrs)**

Selecting and Installing Software Testing Tools - Software Test Automation – Skills needed for Automation – Scope of Automation – Design and Architecture for Automation – Requirements for a Test Tool – Challenges in Automation – Tracking the Bug – Debugging – Case study using Bug Tracking Tool.

**Module-V: Software Testing and Quality Metrics****(9 hrs)**

Testing Software System Security - Six-Sigma – TQM - Complexity Metrics and Models – Quality Management Metrics - Availability Metrics - Defect Removal Effectiveness - FMEA - Quality Function Deployment – Taguchi Quality Loss Function – Cost of Quality. Case Study for Complexity and Object-Oriented Metrics

**Text Book(s):**

1. William Perry, “Effective Methods of Software Testing”, Third Edition, Wiley Publishing 2007
2. Srinivasan Desikan and Gopalaswamy Ramesh, “Software Testing – Principles and Practices”, Pearson Education, 2007.

**Reference Book(s):**

1. Naresh Chauhan, “Software Testing Principles and Practices” Oxford University Press, New Delhi, 2010.
2. Dale H. Besterfield et al., “Total Quality Management”, Pearson Education Asia, Third Edition, Indian Reprint (2006).
3. Stephen Kan, “Metrics and Models in Software Quality”, Addison – Wesley, Second Edition, 2004
4. Ilene Burnstein, “ Practical Software Testing”, Springer International Edition, Chennai, 2003
5. Renu Rajani, Pradeep Oak, “Software Testing – Effective Methods, Tools and Techniques”, Tata McGraw Hill, 2004
6. Edward Kit, “Software Testing in the Real World – Improving the Process”, Pearson Education, 1995.
7. Boris Beizer, “ Software Testing Techniques” – 2nd Edition, Van Nostr and Reinhold, New York, 1990.

## MCAP 455: SOFTWARE QUALITY ASSURANCE

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Knowledge in Software Design Process.

### Objectives:

- To understand the basic tenets of Software Quality and quality factors.
- To Understand the SQA Components.

### Outcomes:

- Ability to understand SQA components and project life cycle.
- Ability to understand software quality management and apply various metrics.

### **Module-I: Introduction to Software Quality & Architecture (9 hrs)**

Need for Software quality – Quality challenges – Software quality assurance (SQA) – Definition and objectives – Software quality factors- McCall's quality model – SQA system and architecture – Software Project life cycle Components – Pre project quality components – Development and quality plans.

### **Module-II: SQA Components and Project Life Cycle (9 hrs)**

Software Development methodologies – Quality assurance activities in the development process - Verification & Validation – Reviews – Software Testing – Software Testing implementations – Quality of software maintenance – Pre-Maintenance of software quality components – Quality assurance tools – CASE tools for software quality – Software maintenance quality – Project Management

### **Module-III: Software Quality Infrastructure (9 hrs)**

Procedures and work instructions - Templates - Checklists – 3S development team - Staff training and certification Corrective and preventive actions – Configuration management – Software change control – Configuration management audit -Documentation control – Storage and retrieval.

### **Module-IV: Software Quality Management & Metrics (9 hrs)**

Project process control – Computerized tools - Software quality metrics – Objectives of quality measurement – Process metrics – Product metrics – Implementation – Limitations of software metrics – Cost of software quality – Classical quality cost model – Extended model – Application of Cost model

### **Module-V: Standards, Certifications & Assessments (9 hrs)**

Quality management standards – ISO 9001 and ISO 9000-3 – capability Maturity Models – CMM and CMMI assessment methodologies - Bootstrap methodology – SPICE Project – SQA project process standards – IEEE st 1012 & 1028 – Organization of Quality Assurance – Department management responsibilities – Project management responsibilities – SQA units and other actors in SQA systems

**Text Book(s):**

1. Daniel Galin, "Software Quality Assurance", Pearson Publication, 2009.

**Reference Book(s):**

1. Alan C. Gillies, "Software Quality: Theory and Management", International Thomson Computer Press, 1997.
2. Mordechai Ben-Menachem "Software Quality: Producing Practical Consistent Software", International Thompson Computer Press, 1997.



## MCAP 456: SOFTWARE RISK MANAGEMENT AND MAINTENANCE

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic Knowledge in Software Analysis & Design Process

### Objectives:

- To understand the various Risk levels in software development.
- To understand the Risk plan, implementation and tracking Risks
- To realize the Software maintenance process, Measurement and benchmarking

### Outcomes:

- Ability to understand the basics concepts of software risk management and maintenance.
- Ability to identify, asses, respond and track risk

### **Module-I: Risk Culture and Management Process**

**(9 hrs)**

Risk- Basic Terms- Risk Vocabulary – Risk- Driven Project Management- Controlling the Process, Environment and Risk- Maturity in Risk Culture – Risk Scale – Preparing for Risk – Risk Management- Paradigms- Five Models of Risk Management – Thinking about Less Risky alternatives – Risk Management at Different Levels – Risk Escalation – Risk Models- Risk Intelligence - Software Risk Management steps.

### **Module-II: Discovering Risk and Assessment**

**(9 hrs)**

Identifying software risk - Classification of Risks – Risk Taxonomy – Risk Mapping – Statements – Risk Reviews – Risk Ownership and stakeholder management – Risk Assessment Approach – Risk Assessment tools and techniques – Risk Probability, impact, exposure, matrix and Application Problem - Self - assessment checklist.

### **Module-III: Responding to Risks and Tracking**

**(9 hrs)**

Special Treatment for Catastrophic risks- Constraint Risks – Risk Mitigation Plan Case Study – Contingency Plans- Implementing Risk Response- Tracking Risk Response and Hazards – Trigger Levels- Tracking Project Risks and Operational Risks- Learning by Tracking and Risk Tracker Tool.

### **Module-IV: Maintenance Process**

**(9 hrs)**

Software Maintenance- Customer's Viewpoint- Economics of Maintenance- Issues in Maintenance- Software Maintenance Standard, Process, Activities and Categories – Maintenance Measurement – Service Measurement and Benchmarking – Problem Resolution – Reporting – Fix Distribution.

### **Module-V: Activities for Maintenance**

**(9 hrs)**

Role of SQA for Support and Maintenance – SQA tools for Maintenance- Configuration Management and Maintenance – Maintenance of Mission Critical Systems – Global Maintenance Teams – Foundation of S3m Process Model- Exemplary Practices.

**Text Book(s):**

1. C. RavindranathPandian, "Applied Software Risk Management: A guide for Software Project Managers", Auerbach Publications, 2007.
2. John Mcmanus, "Risk Management in Software Development Projects", Elsevier Butterworth- Heinemann, First Edition, 2004.

**Reference Book(s):**

1. Alian April and Alain Abran, "Software Maintenance Management: Evaluation and Continuous Improvement", John Wiley & Sons Inc, 2008
2. Gopaldaswamy Ramesh and Ramesh Bhattiprolu, "Software Maintenance: Effective Practices for Geographically Distributed Environments", Second Reprint, Tata McGraw Hill, 2009.

# MCAP 457: AGILE SOFTWARE PROCESS

L	T	P	C
3	0	0	3

## Pre-requisite:

- Basic Understanding of Software Design Process

## Objectives:

- To Understand the basic concepts of Agile Software Process
- To gain knowledge in the area of various Agile Methodologies.
- To Understand the Principles of Agile Testing

## Outcomes:

- Ability to understand basic agile and its significance.
- Ability to understand the methodology of agile through various case studies.

### **Module-I: Introduction**

**(9 hrs)**

Software is new product development –iterative development: Risk-Driven and Client-Driven iterative planning – Time boxed iterative development – During the iteration, No changes from external stakeholders – Evolutionary and adaptive development - Evolutionary requirements analysis – Early “Top Ten” high-level requirements and skillful analysis – Evolutionary and adaptive planning –Incremental delivery – Evolutionary delivery – The most common mistake –Specific iterative and Evolutionary methods.

### **Module-II: Agile and Its Significance**

**(9 hrs)**

Agile development: Classification of methods – The agile manifesto and principles – Agile project management – Embrace communication and feedback –Simple practices and project tools – Empirical Vs defined and prescriptive process – Principle-based versus Rule-Based – Sustainable discipline: The human touch – Team as a complex adaptive system – Agile hype – Specific agile methods. Motivation: The facts of change on software projects – Key motivations for iterative development – Meeting the requirements challenge iteratively – Problems with the waterfall. Evidence: Research evidence – Early historical project evidence – Standards-Body evidence – Expert and thought leader evidence – A Business case for iterative development – The historical accident of waterfall validity.

### **Module-III: Agile Methodology**

**(9 hrs)**

Scrum: Method overview – Lifecycle – Work products, Roles and Practices values –Common mistakes and misunderstandings – Sample projects – Process mixtures– Adoption strategies – Fact versus fantasy –Strengths versus “Other” history.

### **Module-IV: Case Study**

**(9 hrs)**

Agile – Motivation – Evidence – Scrum – Extreme Programming – Unified Process –Evo– Practice Tips.

### **Module-V: Agile Practising and Testing**

**(9 hrs)**

Practice: Project management – Environment – Requirements – Test – The agile alliances – The manifesto – Supporting the values –Agile testing: Nine principles and six concrete practices for testing on agile teams.

**Text Book(s):**

1. Craig Larman “Agile and Iterative Development – A Manager’s Guide” Pearson Education – 2004.
2. Elisabeth Hendrickson, “Agile Testing” Quality Tree Software Inc 2008.

**Reference Book(s):**

1. Alistair Cockburn, “Agile Software Development Series”, Addison-Wesley Professional, 2001.
2. Robert C. Martin, “Agile Software Development Principles, Patterns and Practices”, Prentice Hall, 2002.

**M.C.A.  
STREAM 3:  
HUMAN COMPUTER INTERACTION**

## MCAP 461: FOUNDATIONS OF HUMAN COMPUTER INTERACTION

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of Graphical User Interface.

### Objectives:

- Understanding the Components of Human Computer Interaction
- Getting insights into the world of Universal Design

### Outcomes:

- Ability to understand various components of Human Computer Interaction.
- Ability to understand the role of HCI in software process.

### **Module- I: Introduction**

**(9 hrs)**

Computer: Text Entry Devices – Pointing Devices – Display Devices – Devices for Virtual Reality and 3D interaction – Physical Controls, Sensors and Special Devices – Memory – Processing and Networks.

### **Module-II: HCI Framework**

**(9 hrs)**

Models of Interaction – HCI frameworks- Basics of Ergonomics – Interaction Styles – Interactivity – User Experience; Fundamentals of Interaction design : The process of Design – User Focus – Scenarios – Navigation Design – Iteration and prototyping.

### **Modul- III: HCI in the software process**

**(9 hrs)**

The software life cycle – Iterative design and prototyping – Design rationale – HCI Patterns.

### **Module-IV: Dialog Notations and design**

**(9 hrs)**

Dialog Notations and design – Dialog semantics – Modeling rich interaction – Cognitive models – Evaluation techniques.

### **Module-V: Universal Design**

**(9 hrs)**

Introduction to Universal design – Benefits - design for diversity; User Support: requirements of user support – approaches to user support – adaptive help systems – designing user support systems.

### Text Book:

1. Alan Dix, Janet Finlay, Gregory D. Abowd, Russell Beale., “Human Computer Interaction”, 3<sup>rd</sup> Edition, Prentice Hall Publishers, 2003.

### Reference Book:

1. Jonathan Lazar, “Research Methods in Human–Computer Interaction”, John Wiley & Sons, 2009.

## MCAP 462: INTRODUCTION TO WEB ACCESSIBILITY

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of Human Computer Interaction Concepts.

### Objectives:

- Understanding the elements of Web accessibility
- Acquiring skills to Design accessible web pages

### Outcomes:

- Ability to understand the processes involved in web accessibility.
- Ability to acquire skills to perform web accessibility analysis.

### **Module-I:**

**(9 hrs)**

Web accessibility - Definitions – Universal Design – Disabilities and Accessibility Requirements – Introduction to Accessible web design – Accessibility Myths – Assistive Technologies.

### **Module- II:**

**(9 hrs)**

Basics of Web Content Accessibility Guidelines – Principles : Perceivable – Operable – Understandable – Robust – Various Levels of Accessibility – WCAG standards evaluation tools and Comparative analysis.

### **Module-III:**

**(9 hrs)**

Accessibility of web page components: Images – Hyperlinks – Color contrast – Tables – Forms – Document Accessibility – Video accessibility – Audio accessibility – Static vs Dynamic page accessibility.

### **Module-IV:**

**(9 hrs)**

W3C Web Accessibility Initiatives (WAI) – Ajax applications accessibility – Features. Authoring tools accessibility guidelines – UAAG: User Agents Accessibility Guidelines – Accessibility regulations : Global and Indian context.

### **Module-V:**

**(9 hrs)**

Introduction to web accessibility analysis tools: Open Source vs. commercial – Features of accessibility analysis tools; Introduction to Mobile web accessibility – Tools and techniques.

### Reference Book:

1. Simon Harper, Yeliz Yesilada (Editors) . Web Accessibility: A Foundation for Research – Springer Publications, 2010.

### Web Resources:

1. W3C Resources on Web Accessibility  
<https://www.w3.org/WAI/intro/accessibility.php>
2. WebAIM(Web Accessibility in Mind) Resources : <http://webaim.org>

### Online Courses:

1. Introduction to Web Accessibility by Google :  
<https://webaccessibility.withgoogle.com/course>

## MCAP 463: INTRODUCTION TO MOBILE ACCESSIBILITY

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of Human Computer Interaction.
- Basic Understanding of Web Accessibility.

### Objectives:

- Introducing Android Mobile App development.
- Making the learner to understand the basics of Mobile accessibility.
- Acquiring skills in designing accessible mobile applications.

### Outcomes:

- Ability to understand the processes involved in mobile accessibility.
- Ability to acquire skills to perform mobile accessibility analysis.

### **Module-I:**

**(9 hrs)**

Mobile Application types: Native, Mobile web and Hybrid apps – Standards and guidelines – The business case for accessibility – Legal and regulatory requirements. Introduction to Android – Versions – Features – The Android Studio – Architecture of Android – Creating and Publishing an application.

### **Module-II:**

**(9 hrs)**

Activities – Fragments – Intents – Layouts – Action Bar – UI Notifications – Building UI with Views – Images, Menus with views – Data Persistence : Files – Internal Storage – External Storage – Creating and using Databases.

### **Module-III:**

**(9 hrs)**

Accessible Design Principles – Color and Contrast – Sound and motion – Style – Hierarchy and focus – Implementation – Text accessibility.

### **Module-IV:**

**(9 hrs)**

Screen Reader Access: Talkback – Select to Speak ; Switch access – Voice commands. Accessibility Factors : Labeling UI Elements – Grouping Content – Touch target size – Color contrasts - Non-color cues- Media content accessibility.

### **Module-V:**

**(9 hrs)**

Accessibility analysis : Success criterion and components – Mapping WCAG to Mobile devices : Screen size factors – Contrast – Keyboard control for touchscreen devices – touch target size and spacing – device manipulation gestures – Tools for analyzing mobile accessibility.



**Reference Books:**

1. Colin Shanley. Cracking Accessibility on Mobile Devices: The definitive field guide to accessibility and digital inclusion for business managers and project teams. RS Books Publishers (2016).
2. J.F. DiMarzio. Beginning Android Programming with Android Studio, Fourth Edition – 2016 – Wiley Publications.

**Web Resources:**

1. <https://developer.android.com/guide/topics/ui/accessibility/apps.html>
2. <https://material.io/guidelines/usability/accessibility.html>

## MCAP 464: FUNDAMENTALS OF CONTEXT AWARE COMPUTING

L	T	P	C
3	0	0	3

### Pre-requisites:

- Knowledge of Mobile computing and Distributed systems

### Objectives:

- Understanding the Components of context awareness.
- Getting familiar with Context acquisition, interpretation and use.

### Outcomes:

- Ability to understand the various components of context aware systems.
- Ability to analyse security of context aware systems.

### **Module-I:**

**(9 hrs)**

Basics of Context Awareness – Surrounding Context – User Attention in a Meeting - Activity context from multiple sensors.

### **Module-II:**

**(9 hrs)**

Distributed and Heterogeneous Context for Ambient Intelligence: Fundamental Concepts – Ontology Representation and Reasoning about Context – Ontology Alignment Approaches .

### **Module-III:**

**(9 hrs)**

Ubiquitous web – System Description – System Deployment – Collaborative Optimizations- Context Acquisition – Provisioning.

### **Module-IV:**

**(9 hrs)**

Elements of a context aware pervasive system- Architecture- Infrastructure, Middleware, Tool Kits – context for mobile device users – Location based Services – Ambient services – context aware mobile services – Mobile code and policy – Multi agent technology.

### **Module-V:**

**(9 hrs)**

Context Aware Security: Traditional Security issues – models – context aware security systems – context aware safety.

### Reference Books:

1. Context aware pervasive systems-Architecture for a new breed of applications Sengloke, Auerbach publications, 2006.
2. Context Aware Computing and Self Managing systems ,Waltenegus Dargie,A chapman & Hall Book/CRC press, 2010.
3. Context-Aware Mobile and Ubiquitous Computing for Enhanced Usability: Adaptive Technologies and Applications: Dragan Stojanović, IGI Global Snippet, 2009.
4. Context Management for Distributed and Dynamic Context-Aware Computing, Rocha, RicardoCouto Antunes da, Endler, Markus, Springer, 2012.
5. Context-Aware Computing: A Special Triple Issue of Human-Computer Interaction, Thomas P.Moran Paul Dourish, 2002.

## MCAP 465: DIGITAL ACCESSIBILITY AUDIT

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of HCI
- Basic Understanding of Web Accessibility.

### Objectives:

- Understanding the components of digital accessibility audit.
- Acquiring skills in Conducting the digital accessibility audit.

### Outcomes:

- Ability to understand the processes involved in performing digital accessibility audit.
- Ability to carryout digital accessibility audit.

### **Module-I: Types of Disability and Special Needs (9 hrs)**

Visual conditions – Auditory conditions – Motor conditions – cognitive conditions – Legal and regulatory requirements.

### **Module-II: POUR Principles (9 hrs)**

Introduction - Perceivable: Text alternatives – Time Based media – adaptable – distinguishable; Operable: Keyboard accessibility – Time factor - Seizures – Navigable. Understandable principles: Readable – Language specific features – predictable – Input assistance; Robust – Compatible.

### **Module-III: (9 hrs)**

Personas and Scenarios - Comprehensive Accessibility Evaluation – Standards Review – Heuristic Evaluation – Design Walkthroughs – Screening Techniques – Usability Testing.

### **Module-IV: Accessibility Analysis Tools (9 hrs)**

AChecker – Wave – Cynthia Says - Tenon – HERA – Comparative analysis.

### **Module-V: Accessibility Simulations (9 hrs)**

Screen reader simulations – Low vision simulation – dyslexia simulation. Building the accessibility evaluation reports : Components.

### Reference Books:

1. Shawn Lawton Henry, “Just Ask – Integrating Accessibility Throughout Design” (Online Open Book : <http://www.uiaccess.com/accessucd/>), 2007.
2. Colin Shanley, “Cracking Accessibility on Mobile Devices: The definitive field guide to accessibility and digital inclusion for business managers and project teams”, RS Books Publishers, 2016.

### Web Resources:

1. <https://www.w3.org/WAI/ER/tools/>
2. <https://www.w3.org/WAI/eval/preliminary.html>
3. <https://www.w3.org/WAI/eval/template>

## MCAP 466: USER INTERFACE ENGINEERING

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of Human-Computer Interaction
- Basic Understanding of Graphical User Interfaces.

### Objectives:

- Exploring the interaction design process.
- Explaining the role of interaction designers and the tools they use.

### Outcomes:

- Ability to understand the principles of User interface design.
- Ability to develop effective user interface design.

### **Module-I:**

**(9 hrs)**

Introduction: Goals of User Interface Design – Motivations of Human factors in Design – High Level Theories – Three Principles – Guidelines for Data Display and Data Entry.

### **Module-II:**

**(9 hrs)**

The Three Pillars of Design Development Methodologies- Ethnographic Observation – Participating Design- Scenario Development- Social Impact Statement for Early Design – Legal Issues- Reviews.

### **Module-III:**

**(9 hrs)**

Usability Testing and laboratories- Surveys- Acceptance tests – Evaluation during Active use- Specification Methods- Interface – Building Tools- Evaluation and Critiquing tools. Visual Thinking and Icons – Direct manipulation Programming – Virtual Environments- Task-Related Organization – Item Presentation Sequence- Response Time and Display Rate – Fast Movement Through Menus- Menu Layouts- Form Filling – Dialog Box – Functionality to Support User’s Tasks – Command Organization Strategies –Natural Language in Computing.

### **Module-IV:**

**(9 hrs)**

Interaction Devices: Introduction – Keyboards and Functions – Pointing Devices- Speech recognition ,Digitization and Generation – Image and Video Displays – Printers – User Productivity – Variability – Error messages – Non-anthropomorphic Design –Display Design – Color-Reading from Paper versus from Displays- Preparation of Printed Manuals- Preparation of Online Facilities.

### **Module-V:**

**(9 hrs)**

Windows Strategies and Information Search: Introduction- Individual Window Design- Multiple Window Design- Coordination by Tightly –Coupled Window- Image Browsing- Multimedia Documents Searches – Information Visualization – Advance Filtering Hypertext and Hypermedia – World Wide Web- Genres and Goals and Designers – Users and their tasks – Object Action Interface Model for Web site Design

### Text book:

1. Ben Shneiderman, “Designing the User Interface”, 5th Edition, Addison-Wesley, 2010.

### Reference books:

1. Jacob Nielsen, "Usability Engineering ", Elsevier; First edition, 2015
2. Wilbert O. Galiz , “The Essential guide to User Interface Design”, Wiley, 2002.
3. Barfield , Lon , “The User Interface : Concepts and Design", Addison Wesley, 1993.

## MCAP 467: COMPUTER VISION AND APPLICATIONS

L	T	P	C
3	0	0	3

### Pre-requisites:

- Basic Understanding of Image Processing
- Basic Understanding of Programming

### Objectives:

- Understanding the Basics of Computer Vision
- Acquiring skills to develop computer vision based applications.

### Outcomes:

- Ability to understand the computer vision pipeline.
- Ability to build solutions using computer vision algorithms.

### **Module-I:**

**(9 hrs)**

Basic Image Handling and Processing : Loading images – Converting image formats – Plotting images, points and lines – Image contours and histograms – Image resizing – Histogram equalization- PCA of Images – Image denoising.

### **Module-II:**

**(9 hrs)**

Local image descriptors – Harris corner detector – Scale Invariant Feature Transform - Matching geo-tagged images.

### **Module-III:**

**(9 hrs)**

Image to image mappings : Homo-graphics – warping images – creating panoramas; Camera models and augmented reality – Multiple view geometry.

### **Module-IV:**

**(9 hrs)**

Clustering images – Searching images: content based image retrieval – visual words – indexing images – searching the database for images – ranking with geometry.

### **Module-V:**

**(9 hrs)**

Classifying image content – Image segmentation: Graph cuts – Segmentation using clustering – OpenCV: Basics – processing video – tracking.

### Text Book:

1. Jan Erik Solem. "Programming Computer Vision with Python". O'Reilly Publishers, 2012.

# **DATA ANALYTICS**

# MCAP 561: Big Data

L	T	P	C
3	0	0	3

## Pre-requisite:

- Data mining and Information Systems.

## Objectives:

- This course brings together several key big data technologies used for storage, analysis and manipulation of data.
- To recognize the key concepts of Hadoop framework, MapReduce, Pig, Hive, and No-SQL.

## Outcomes:

- Ability to do a sample project in Hadoop API.

### **Module - I: Introduction to Big Data**

**(9hrs)**

Big Data and its Importance – Four V's of Big Data – Drivers for Big Data – Introduction to Big Data Analytics – Big Data Analytics applications.

### **Module - II: Big Data Technologies**

**(9hrs)**

Hadoop's Parallel World – Data discovery – Open source technology for Big Data Analytics – cloud and Big Data – Predictive Analytics – Mobile Business Intelligence and Big Data – Crowd Sourcing Analytics – Inter- and Trans-Firewall Analytics - Information Management.

### **Module - III: Processing Big Data**

**(9hrs)**

Integrating disparate data stores - Mapping data to the programming framework - Connecting and extracting data from storage - Transforming data for processing - Subdividing data in preparation for Hadoop MapReduce.

### **Module - IV: Hadoop MapReduce**

**(9hrs)**

Employing Hadoop Map Reduce - Creating the components of Hadoop Map Reduce jobs - Distributing data processing across server farms – Executing Hadoop Map Reduce jobs - Monitoring the progress of job flows - The Building Blocks of Hadoop Map Reduce - Distinguishing Hadoop daemons - Investigating the Hadoop Distributed File System Selecting appropriate execution modes: local, pseudo-distributed, fully distributed.

### **Module - V: Advanced Analytics Platform**

**(9hrs)**

Real-Time Architecture – Orchestration and Synthesis Using Analytics Engines – Discovery using Data at Rest – Implementation of Big Data Analytics – Big Data Convergence – Analytics Business Maturity Model.

## Text Book(s):

1. Michael Minelli, Michele Chambers, Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Business, Ambiga Dhiraj, Wiley CIO Series, First Edition, 2013.
2. Arvind Sathi, Big Data Analytics: Disruptive Technologies for Changing the Game, IBM Corporation, First Edition, 2012.
3. Bill Franks, Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics, Wiley and SAS Business Series, First Edition, 2012.

## Reference Book(s):

1. Tom White, Hadoop: The Definitive Guide, O'Reilly, Third Edition, 2012.

## MCAP 562: Python Programming for Data Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Programming knowledge in any OOLanguage.

### Objectives:

- Understanding the basic concepts ofPython.
- Preparing and pre-processingdata.
- Understanding the data aggregation and groupingconcepts.
- Leveraging webscraping.
- Visualizing the results of analyticseffectively.

### Outcomes:

- Ability to do a data analytics using python programs.

### **Module - I: Python Concepts, DataStructures,Classes**

**(9hrs)**

Interpreter – Program Execution – Statements – Expressions – Flow Controls – Functions - Numeric Types – Sequences-Strings,Tuples,Listsand-ClassDefinition–Constructors–Inheritance–Overloading–Text&Binary Files - Reading andWriting.

### **Module - II:DataWrangling**

**(9hrs)**

Combining and Merging DataSets – Reshaping and Pivoting – Data Transformation – String Manipulation, Regular Expressions.

### **Module - III: Data Aggregation, Group Operations,Timeseries**

**(9hrs)**

GoupBy Mechanics – Data Aggregation – GroupWise Operations and Transformations – Pivot Tables and Cross Tabulations – Date and Time Date Type tools – Time Series Basics – Data Ranges, Frequencies and Shifting.

### **Module - IV:WebScraping**

**(9hrs)**

Data Acquisition by Scraping web applications –Submitting a form - Fetching web pages – Downloading web pages through form submission – CSS Selectors.

### **Module - V: VisualizationinPython**

**(9hrs)**

Matplotlibpackage–PlottingGraphs–ControllingGraph–AddingText–MoreGraphTypes–Gettingandsetting values –Patches.

### Text Book(s):

1. Mark Lutz, Programming Python, O'Reilly Media, Fourth edition,2010.
2. Mark Lutz, Learning Python, O'Reilly Media, Fifth Edition,2013.
3. Tim Hall and J-P Stacey, Python 3 for Absolute Beginners, Apress, First Edition,2009.
4. Magnus Lie Hetland, Beginning Python: From Novice to Professional, Apress, SecondEdition, 2005.
5. Shai Vaingast, Beginning Python Visualization Crafting Visual Transformation Scripts, Apress, Second Edition,2014.

### Reference Book(s):

1. Wes Mc Kinney, Python for Data Analysis, O'Reilly Media,2012.
2. White, Hadoop: The Definitive Guide, Third Edition - O'Reilly ,2012.
3. BrandonRhodesandJohnGoerzen,FoundationsofPythonNetworkProgramming:TheComprehensive Guide to Building Network Applications with Python, Apress, Second Edition,2010.
4. <http://blog.matthewrathbone.com/2013/11/17/python-map-reduce-on-hadoop---a-beginnerstutorial.html>
5. <http://www.michael-noll.com/tutorials/writing-an-hadoop-mapreduce-program-in-python/>
6. <http://allthingshadoop.com/category/python/>



## MCAP 563: Statistics for Business Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Data mining and its concepts.

### Objectives:

- To identify the association between various types of data.
- To apply statistical inference techniques.
- To apply methods of inference to applied business situations.
- To identify, build and validate appropriate statistical regression models.

### Outcomes:

- Ability to do a business analytics using statistical models.

### **Module -I: Introduction**

**(9hrs)**

Data - Data Tables - Categorical and Numerical Data - Recoding and Aggregation - Time Series - Describing Categorical Data - Charts of Categorical Data - The Area Principle - Mode and Median - Describing numerical data - Summaries of Numerical Variables - Histograms and the Distribution of Numerical Data - Boxplot - Shape of a Distribution.

### **Module - II: Association in Categorical and Numerical Data:**

**(9hrs)**

Contingency Tables - Lurking Variables and Simpson's Paradox - Strength of Association - Scatter plots - Association in Scatter plots - Measuring Association - Summarizing Association with a Line - Spurious Correlation.

### **Module -III: Probability**

**(9hrs)**

Probability - Conditional Probability - Random Variables - Association between Random Variables - Probability models for Counts - Normality - Managing Financial Risk - Modelling Sampling Variation.

### **Module -IV: Inference**

**(9hrs)**

Samples and Surveys - Sampling Variation and Quality - Confidence Intervals - Hypothesis Tests - Alternative Approaches to Inference - Data for Comparisons - Two-sample T-test - Confidence Interval for the Difference - Rare Events - Testing Association.

### **Module - V: Regression Models-I**

**(9hrs)**

Linear Patterns - Curved Patterns - Simple Regression - Regression Diagnostics - Multiple Regressions.

### Text Book(s):

1. Robert Stine, Dean Foster, *Statistics for Business: Decision Making and Analysis*, Pearson Education, Second Edition, 2013.
2. Paul Newbold, William L. Carlson, Betty Thorne, *Statistics for Business and Economics*, Pearson Education, Sixth Edition, 2007.

### Reference Book(s):

1. Keller Gerald, *Statistics for Management and Economics*, South Western, Tenth Edition, 2015.

## MCAP 564: Marketing Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Data mining with Statistics.

### Objectives:

- Learn how to tap a simple and cost-effective tool, Microsoft Excel, to solve specific business problems using powerful analytic techniques.
- Helps to forecast sales and improve response rates for marketing campaigns.
- Explores how to optimize price points for products and services, optimize store layouts, and improve online advertising.

### Outcomes:

- Ability to do a marketing analytics for business related applications.

### **Module - I: Marketing Data Summarization**

**(9hrs)**

*Slicing and Dicing Marketing Data with Pivot Tables - Using Excel Charts to Summarize Marketing Data - Using Excel Functions to Summarize Marketing Data.*

### **Module - II: Forecasting Techniques**

**(9hrs)**

*Simple Linear Regression and Correlation - Using Multiple Regression to Forecast Sales - Forecasting in the Presence of Special Events - Modelling Trend and Seasonality - Ratio to Moving Average Forecasting Method - Winter's Method - Using Neural Networks to Forecast Sales.*

### **Module - III: Customer Needs**

**(9hrs)**

*Conjoint Analysis - Logistic Regression - Discrete Choice Analysis – Customer Value - Introduction to Customer value, Benefits.*

### **Module - IV: Market Segmentation**

**(9hrs)**

*Cluster Analysis - User-Based Collaborative Filtering - Collaborative Filtering – Using Classification Trees for Segmentation.*

### **Module - V: Retailing and Market Research Tools**

**(9hrs)**

*Retailing - Introduction to retailing, Market Basket Analysis and Lift - Marketing Research Tools - Principal Components Analysis.*

### Text Book(s):

1. Wayne. L. Winston, *Marketing Analytics: Data driven techniques with MS-Excel*, Wiley, First Edition, 2014.

### Reference Book(s):

1. Stephan Sorger, *Marketing Analytics: Strategic models and metrics*, CreateSpace Independent Publishing Platform, First Edition, 2013.

## MCAP 565: Social Network Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Nil.

### Objectives:

- Analyse the structure and evolution of networks.
- Able to gain knowledge from disciplines as diverse as sociology, mathematics, computer science.

### Outcomes:

- Ability to do Online interactive demonstrations and hands-on analysis of real-world data sets.

### **Module -I: Introduction**

**(9hrs)**

Social network data- Formal methods- Paths and Connectivity- Graphs to represent social relations- Working with network data- Network Datasets- Strong and weak ties - Closure, Structural.

### **Module - II: Social Influence**

**(9hrs)**

Homophily- Mechanisms Underlying Homophily, Selection and Social Influence, Affiliation, Tracking Link Formation in On-Line Data, Spatial Model of Segregation - Positive and Negative Relationships - Structural Balance - Applications of Structural Balance, Weaker Form of Structural Balance.

### **Module - III: Information Networks and The World Wide Web**

**(9hrs)**

The Structure of the Web- World Wide Web- Information Networks, Hypertext, and Associative Memory- Web as a Directed Graph, Bow-Tie Structure of the Web- Link Analysis and Web Search Searching the Web: Ranking, Link Analysis using Hubs and Authorities- Page Rank- Link Analysis in Modern Web Search, Applications, Spectral Analysis, Random Walks, and Web Search.

### **Module - IV: Social Network Mining**

**(9hrs)**

Clustering of Social Network graphs: Betweenness, Girvan Newman Algorithm- Discovery of communities- Cliques and Bipartite Graphs- Graph Partitioning Methods- Matrices- Eigen values Sim-rank.

### **Module - V: Network Dynamics**

**(9hrs)**

Cascading Behaviour in Networks: Diffusion in Networks, Modelling Diffusion- Cascades and Cluster, Thresholds, Extensions of the Basic Cascade Model- Six Degrees of Separation- Structure and Randomness, Decentralized Search- Empirical Analysis and Generalized Models- Analysis of Decentralized Search.

### Text Book(s):

1. Easley and Kleinberg, *Networks, Crowds, and Markets: Reasoning about a highly connected world*, Cambridge Univ. Press, 2010.
2. Robert A. Hanneman and Mark Riddle, *Introduction to social network methods*, University of California, 2005.
3. Jure Leskovec, Anand Rajaraman, Millie Way Labs, Jeffrey D. Ullman, *Mining of Massive Datasets*, Cambridge University Press, Second Edition, 2014.

### Reference Book(s):

1. Wasserman, S., & Faust, K, *Social Network Analysis: Methods and Applications*, Cambridge University Press; First Edition, 1994.
2. Borgatti, S. P., Everett, M. G., & Johnson, J. C., *Analyzing social networks*, SAGE Publications Ltd; First Edition, 2013.
3. John Scott, *Social Network Analysis: A Handbook*, SAGE Publications Ltd; Second Edition, 2000.

## MCAP 566: Risk Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Nil.

### Objectives:

- To understand the functioning of Banking and apply analytic techniques to mitigate risks.
- To understand the operations of Insurance sector and apply analytic techniques to mitigate risks and improve profitability.
- To understand the processes involved in Healthcare industry and use data analysis to improve patient care and optimize cost.
- To understand human relationship management techniques for effective management of people.

### Outcomes:

- Ability to analyze impacts of risk on various sensitive applications.

### **Module -I: Introduction**

**(9hrs)**

Risk – Definition and Examples, Components and Factors; Understanding Risk Assessment, Risk Mitigation and Risk Management; Risk Analytics- Definition and Objectives.

### **Module - II: Risk Analytics for Banking Domain**

**(9hrs)**

Introduction to Banking Sector; National and International laws; Credit Risk Analytics, Internal capital Adequacy Assessment Process Related Risk Analytics, Limit Management, Risk-Adjusted Performance Management, Fraud Risk; Case Studies.

### **Module - III: Risk Analytics for Insurance Domain**

**(9hrs)**

Introduction to Insurance Sector; Property & Casualty Insurance Companies and Life Insurance Companies; Using Analytics for Customer Acquisition and Retention; Detecting, Preventing and Managing Fraud using Analytics; Case Studies.

### **Module - IV: Risk Analytics for Healthcare Domain**

**(9hrs)**

Introduction to Healthcare Sector; HIPAA, Four Enterprise Disciplines of Health Analytics, Health Outcome Analysis, Health Value and Cost; Customer Insights, Actuary Services, Framework for Customer Analytics; Risk Management.

### **Module - V: Workforce Analytics**

**(9hrs)**

Workforce Environment and Psychology, HR Analytics and Talent Management- Understanding and Predicting Retention, Boosting Employee Engagement, Sources of Hire and Quality of Hire, Profiling High Performers.

### Text Book(s):

1. Clark Abrahams and Mingyuan Zhang, *Credit Risk Assessment: The New Lending System for Borrowers, Lenders, and Investors*, John Wiley & Sons, First Edition, 2009.
2. Naeem Siddiqi, *Credit Risk Scorecards: Developing and Implementing Intelligent Credit Scoring*, John Wiley & Sons, 2005.

### Reference Book(s):

1. Laura B. Madsen, *Data-Driven Healthcare: How Analytics and BI are Transforming the Industry*, John Wiley & Sons, First Edition, 2014.
2. Jason Burke, *Health Analytics: Gaining the Insights to Transform Health Care*, John Wiley & Sons, 2013.
3. Jac Fitz-Enz, John R. Mattox II, *Predictive Analytics for Human Resources*, Wiley, 2014.
4. James C. Sesil, *Applying Advanced Analytics to HR Management Decisions: Methods for Selection, Developing Incentives, and Improving Collaboration*, Pearson Education, 2017.

# MCAP 567: Database Systems in Big Data

L	T	P	C
3	0	0	3

## Pre-requisite:

- Nil.

## Objectives:

- To understand the design of database in BigData.

## Outcomes:

- Ability touse the datdbase with big data.

### **Module - I: Getting StartedWithCassandra**

**(9hrs)**

Introduction of NoSQL Database concepts: -: ACID Vs. BASE, Advantages, Where Applicable, Schema, Two Phase Commit, Sharing and Share Nothing Architecture, Feature Based, Key Based, Lookup Table Based, NoSQL Databases, Brewers CAP Theorem, Cassandra Definition and Features, Distributed and Decentralised, Elastic Scalability, High Availability and Fault Tolerance, Tuneable Consistency, Strict Consistency, Casual Consistency, Weak(EventualConsistency),ColumnOrientation,SchemaFree,HighPerformance,Featuresandcomparisonsof few NOSQL Databases (Cassandra, Mongo, Cloudera, CouchDB,HBase.

### **Module - II: Understanding CassandraDataModel**

**(9hrs)**

USE Cases for Cassandra, Cassandra Installation: Installing Cassandra, Running the CommandLine Client Interface,BasicCLICommands,Help,ConnectingtoaServer,DescribingtheEnvironment,CreatingandKeyspace and Column Family, Writing and Reading Data, The Relational Data Model, Simple Introduction, Cluster, Keyspaces, Column Families, Column Family Options, Columns, Wide Rows, Skinny Rows, Column Sorting, Super Columns, Composite Keys, Design Differences between RDBMS and CASSANDRA, Query Language, Referential Integrity, Secondary Indexes, Sorting, DeNormalisation, Design Patterns, MaterializedViews.

### **Module - III: UnderstandingCassandraArchitecture**

**(9hrs)**

System Keyspace, Peer-To-Peer, Gossip and Failure Detection, Anti-Entropy and Read Repair, Memtables, SSTables, and Commit Logs, Hinted Handoff, Compaction, Bloom Filters, Tombstones, Staged Event-Driven Architecture (SEDA), Read, Mutation, Gossip, Response, Anti-Entropy, Load Balance, Migration, Streaming, Managers and Services, Casssandra Daemon, Storage Service, Messaging Service, Hinted Handoff Manager.

### **Module - IV: CreatingSampleApplication**

**(9hrs)**

Database Design, Sample Application RDBMS Design, Sample Application Cassandra Design, Application Code, Creating Database, Loading Schema, Data Structures, Setting Connections, Population of database, Application Features. Integrating Cassandra With Hadoop - Hadoop, MapReduce, Cassandra Hadoop Source Package, Outputting Data to Cassandra, PIG, HIVE, Use Cases.

### **Module - V: Configuring, Reading and Writing Datain Cassandra**

**(9hrs)**

Key spaces, Replicas, Replica Placement Strategy, Replication Factor, Partitioner, Snitches, Creating Clusters, DynamicRingParticipation,Security,MiscellaneousSettings,AdditionalTools,QuerydifferencesbetweenRDBMS andCassandra,BasicWriteProperties,ConsistencyLevel,BasicReadProperties,API's,SetUpandInsertingData, Slice Predicate, Get Range Slices, Multiget Slice, Deleting, Programmatically Defining Keyspaces and Column Families. CQL-Data Definition language(DDL) Statements, Data Manipulation Language (DML), Create and modifyUsers,Userpermission,CaptureCQLoutputtoafile,Importandexportdata,CQLscriptsfromwithinCQL, CQL Scripts from the commandprompt.

**Text Book(s):**

1. Tom Plunkett, Brian Macdonald, Bruce Nelson, *Oracle Big Data Handbook*, (Oracle Press), Fujitsu
2. Madhu Jagadeesh, Soumendra Mohanty, Harsha Srivatsa, *Big Data Imperatives: Enterprise Big Data Warehouse, BI Implementations and Analytics*, Apress, First Edition, 2013.
3. Frank J. Ohlhorst, *Big Data Analytics: Turning Big Data into Big Money*, Wiley Publishers, 2012.

**Reference Book(s):**

1. Cristian Molaro, Surekha Parekh, Terry Purcell, *DB211: The Database for Big Data & Analytics*, MCPress, 2013.

## MCAP 568: Streaming Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Nil.

### Objectives:

- Understanding the need for streamcomputing.
- Comprehend the architecture of streamanalytics.
- Building data flow management pipelines forstreams.
- Processing streamingdata.
- Delivering the results of streaminganalytics.

### Outcomes:

- Ability todo streaming analytics.

### **Module - I: Introduction toStreamComputing**

**(9hrs)**

Streaming Data – Sources – Difference between Streaming Data and Static Data. Overview of Large Scale Stream Processing Engines – Issues in Stream Processing.

### **Module - II: StreamingAnalyticsArchitecture**

**(9hrs)**

Phases in Streaming Analytics Architecture - Vital Attributes - High Availability – Low Latency – Horizontal Scalability-Fault Tolerance - Service Configuration and Management – Apache ZooKeeper.

### **Module - III:DataFlowManagement**

**(9hrs)**

Distributed Data Flows – At Least One Delivery – Apache Kafka – Apache Flume – Zero MQ - Messages, Events, Tasks & File Passing.

### **Module - IV: Processing & StoringStreamingData**

**(9hrs)**

Distributed Stream Data Processing: Co-ordination, Partition and Merges, Transactions. Duplication Detection using Bloom Filters - Apache Spark Streaming Examples Choosing a storage system – NoSQL Storage Systems.

### **Module - V: DeliveringStreamingMetrics**

**(9hrs)**

VisualizingData–MobileStreamingApps–TimesCountingandSummation–StochasticOptimization–Delivering Time SeriesData.

### Text Book(s):

1. ByronEllis,Real-TimeAnalytics:TechniquetoAnalyzeandVisualizeStreamingData,Wiley,FirstEdition,2014.
2. Sherif Sakr, Large Scale and Big Data: Processing and Management, CRC Press,2014.
3. BillFranks,TamingTheBigDataTidalWaveFindingOpportunitiesInHugeDataStreamsWithAdvanced Analytics, Wiley,2012.
4. JureLeskovec,AnandRajaraman,JeffreyD.Ullman,MiningofMassiveDatasets,CambridgeUniversity Press,2014.

### ReferenceBook(s):

1. Paul C Zikopoulos, Chris Eaton, Paul Zikopoulos, Understanding Big Data: Analytics for Enterprise Class Hadoop and Streaming Data, McGraw-Hil, First Edition,2011.
2. kafka.apache.org
3. flume.apache.org
4. zookeeper.apache.org

## MCAP 569: Video Processing and Analytics

L	T	P	C
3	0	0	3

### Pre-requisite:

- Image processing and its working.

### Objectives:

- To have a better knowledge about videos.
- To enrich students with data analytics.
- To understand the video content analysis.

### Outcomes:

- Ability to expose various applications and case studies of Video analytics.

### **Module - I: Video Fundamentals**

**(9hrs)**

Basic concepts and Terminology-Monochrome Analog video – Colour in Video – Analog video standards – Digital video basics – Analog to Digital conversion – Colour representation and chroma sub sampling – Digital video formats and standards Video sampling rate and standards conversion.

### **Module - II: Video Segmentation and Video Features**

**(9hrs)**

Fundamentals of Motion Estimation – Optical flow - Pixel Video Features - colour, shape features, Textural features - Feature selection and Dimensionality Reduction.

### **Module - III: Introduction to Analytics**

**(9hrs)**

Big-Data - Descriptive data analysis - Analytic Processes and Tools - Regression – Classification - Clustering algorithms - Validation - Multimodal approach to Image and Video data mining - Probabilistic semantic mode - Model based annotation and video mining.

### **Module - IV: Video Content Analysis and Analytics**

**(9hrs)**

Introduction-Detecting Shot Boundaries in Video – Parsing a Video into Semantic Segments – Video Indexing and Abstraction for Retrievals – Affective Video Content Analysis – Automatic Video Trailer Generation - Video database - Video categorization - Video query categorization.

### **Module - V: Emerging Trends**

**(9hrs)**

Object Segmentation and Tracking in the Presence of Complex Background – Video In painting – Video Summarization – Forensic video analysis.

### Text Book(s):

1. Oges Marques, Practical Image and Video Processing Using MATLAB, Wiley-IEEE Press, 2011.
2. Michael Berthold, David J. Hand, Intelligent Data Analysis, Springer, 2007.

### Reference Book(s):

1. Anand Rajaraman and Jeffrey David Ullman, Mining of Massive Datasets, Cambridge University Press, 2012.



## **NETWORK COMPUTING**

# MCAP 571: Principles of Distributed Computing

L	T	P	C
3	0	0	3

## Pre-requisite:

- Basic knowledge in Operating System and Computer Networks.

## Objectives:

- To learn the principles, architectures, algorithms and programming models used in distributed systems.
- To examine state-of-the-art distributed systems, such as JINI.

## Outcomes:

- Ability to design and implement sample distributed systems.

### **Module -I: Introduction**

**(9hrs)**

Definition – Goals – Hardware and Software Concepts – Client/Server Model Communication – Layered Protocols  
RPC – Remote Object Invocation – Message Oriented Communication.

### **Module - II: Client Server and Naming Entity**

**(9hrs)**

Threads Client Server – Code Migration – S/W Agents – Naming Entity – Location Mobile Entity.

### **Module - III: Synchronization and Distributed Transactions**

**(9hrs)**

Synchronization – Clock Synchronization – Logical Clocks – Global States – Election Algorithms – Mutual Exclusion  
– Distributed Transaction Consistency and Replication – Introduction – Data Centric Consistency – Fault Tolerance  
– Reliable Client/Server Communication – Distributed Commit – Recovery.

### **Module - IV: Distributed Object Database System**

**(9hrs)**

Distributed Object Database System: CORBA – DCOM – GLOBE.

### **Module - V: Distributed File System**

**(9hrs)**

Distributed File System – Distributed Document Base System – WWW – Distributed Co-ordination Base System –  
JINI.

## **Text Book(s):**

1. Andrew S. Tanenbaum, Maarten van Steer, *Distributed Systems Principles and Paradigms*, Prentice Hall India, 2002.

## **Reference Book(s):**

1. George Coulouris, Jean Dollimore and Tim Kinderberg, *Distributed Systems - Concepts and Design*, Addison Wesley.

# MCAP 571: Introduction to Parallel Computing

L	T	P	C
3	0	0	3

## Pre-requisite:

- Basic knowledge in computer architecture and computernetworks.

## Objectives:

- To study various types of parallel computers and their architectures.
- To describe the concepts underlying the design, implementation, and use of message-passing computing and shared-memory computing.
- To set up cluster computing systems, code and evaluate the performance of parallel programs.

## Outcomes:

- Ability to choose suitable programming strategies in parallelizing computational tasks.

### **Module -I: Introduction**

**(9hrs)**

Introduction–Motivation–Scope-Parallel Programming Platforms: Implicit Parallelism–Limitation of Memory System Performance - Dichotomy of Parallel Computing Platforms – Communication cost in Parallel Machines – Routing Mechanism for Interconnection Networks.

### **Module - II: Principles of Parallel Algorithm**

**(9hrs)**

Decomposition Techniques – Characteristics of Tasks and Interactions – Mapping Techniques for Load Balancing – Methods for containing Interaction overheads – Parallel Algorithm Models – Basic communication Operations: One-to-all Broadcast and All-to-one Reduction – Scatter and Gather – Improving the Speed of some communication Operations.

### **Module - III: Analytical Modelling of Parallel programs**

**(9hrs)**

Sources of Overhead in Parallel Programs – Performance metrics for parallel systems – effect of granularity and data mapping on performance – scalability of parallel systems – Minimum analysis of parallel Programs – other Scalability Metrics.

### **Module - IV: Programming using Message Passing Paradigm**

**(9hrs)**

Principles of Message-Passing Programming – The Building Blocks: Send and Receive Operations – MPI: The Message Passing Interface – Topologies and Embedding -Overlapping Communication with Computation - Collective Communication and Computation Operations - Groups and Communicators.

### **Module - V: Parallel Algorithms and Applications**

**(9hrs)**

Dense Matrix Algorithms: Matrix-Vector Multiplication-Matrix-Matrix Multiplication-Solving a System of Linear Equations. Sorting: Issues in Sorting on Parallel Computers - Sorting Networks - Bubble Sort and its Variants – Quick sort - Bucket and Sample Sort - Other Sorting Algorithms.

## Text Book(s):

1. Ananth Grama, Anshul Gupta, George Karypis, Vipin Kumar, Introduction to Parallel Computing, , Pearson, Second Edition, 2003.

## Reference Book(s):

1. Peter S. Pacheco, An introduction to Parallel Programming, Morgan Kaufmann, First Edition, 2011.
2. Fayez Gebali, Algorithms and Parallel Computing, Wiley series, 2011.

## MCAP 573: Network Design and Management

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic knowledge in computer networks.

### Objectives:

- Learn design considerations for Layer 2 and Layer 3 components and network identity.
- Understand design considerations for common applications such as DNS, mail, and web.
- Identify the key roles and placement issues for network elements such as firewalls, intrusion detection systems, VPN gateways.

### Outcomes:

- Ability to choose the various testing and optimizations strategies to select the technologies and devices for current network design.

### **Module -I: Introduction**

**(9hrs)**

Basic Networking Concepts: Network – Telephone Network - Network Architecture Types - Network Services – LANs, MANs and WANs – OSI Model and IEEE Standards: Protocols for Data Transmission – Protocol Stacks – OSI Management – Layering Concepts – IEEE 802 Standards.

### **Module - II: Protocols, Services and Interfaces**

**(9hrs)**

Definition – The X.25 Protocol – Routable Protocols – Non-Routable Protocols – Connectionless and Connection Oriented Protocols – TCP/IP Protocol Suite – IP Addressing – Sub-netting – IPX/SPX Protocol Suite – Other Protocols within the TCP/IP Suite: Microsoft Protocol Suite - AppleTalk Protocol Suite.

### **Module - III: Network Designs and Ethernet Networking**

**(9hrs)**

Physical Topologies – Bus, Star, Ring, Mesh - Network Types – ARCNet – The Ethernet – Fast Ethernet Networks – Token Ring Networks – FDDI – Settings in Network Adapters.

### **Module - IV: Wired and Wireless Media**

**(9hrs)**

Network cables – Wired Media – Twisted-Pair Cable – Fiber-Optic Cable – HFC Cable – Multiplexing – Multiple Access Systems – Microwaves – Network Design Considerations – Token-Ring, CDDI and FDDI Networks – Future Trends in Networking – Quality of Service (QoS).

### **Module - V: SNMP and RMON**

**(9hrs)**

SNMP and UDP – Management Information Bases (MIBs) – Types of MIBs - Lexicographic Order – Structure of Management Information (SMI) Standards – SNMPv1 – SNMPv2 – RMON: Structure of MIB Defined in RFC 1751 – Host Group – Packet Capture Group – Control of RMON Devices.

### Text Book(s):

1. Steven T. Karris, *Network Design and Management*, Orchard Publications, 2002.
2. Teresa C. Piliouras, *Network Design: Management and Technical Perspectives*, Auerbach Publications, Second Edition, 2004.

### Reference Book(s):

1. Oppenheimer, *Top-Down Network Design*, CISCO, 2010.
2. Ralph J Tyser, S Raghavan, *Telecommunications Network Design and Management*, Springer Science Business Media, 2014.

## MCAP 574: Web Services Computing

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic knowledge in Web Technology and Computer Networks.

### Objectives:

- To understand the details of Web services technologies: SOAP, WSDL, UDDI.
- To learn how to implement and deploy web service clients and servers.
- To explore interoperability between different frameworks.
- To learn basic concepts of SOA.

### Outcomes:

- Ability to develop small applications using web services.

### **Module - I: Fundamental Concepts and Theories**

**(9hrs)**

*Introduction to Web Services* — The definition of web services, basic operational model of web services, tools and technologies enabling web services, benefits and challenges of using web services.

*Web Services Architecture* — Web services Architecture and its characteristics, core building blocks of web services, standards and technologies available for implementing web services, web services communication models, basic steps of implementing web services.

### **Module - II: Service Oriented Architecture**

**(9hrs)**

*Overview of Service Oriented Architecture* — SOA concepts, Key Service Characteristics, Technical Benefits of a SOA. *SOA and Web Services* — Web Services Platform, Service-Level Data Models, Discovery, Security and Interaction Patterns, Atomic and Composite services, Service-level communication and alternative transports.

### **Module - III: Web Services using SOAP**

**(9hrs)**

*Fundamentals of SOAP* — SOAP Message Structure, SOAP encoding, SOAP message exchange models, SOAP communication and messaging, SOAP security.

*Developing Web Services using SOAP* — Building SOAP Web Services, developing SOAP Web Services using Java and Axis, limitations of SOAP.

### **Module - IV: Tools and Technologies**

**(9hrs)**

*Describing Web Services* — WSDL — WSDL in the world of Web Services, Web Services lifecycle, anatomy of WSDL definition document, WSDL bindings, WSDL Tools, limitations of WSDL.

*Discovering Web Services* — Service discovery, role of service discovery in a SOA, service discovery mechanisms, UDDI — UDDI Registries, uses of UDDI Registry, Programming with UDDI, UDDI data structures, Publishing API, Publishing, searching and deleting information in a UDDI Registry, limitations of UDDI.

### **Module - V: Web Services Interoperability**

**(9hrs)**

*Web Services Interoperability* — Means of ensuring Interoperability, Overview of .NET, Creating a .NET client for an Axis Web Service, Creating java client for a web service, Challenges in Web Services Interoperability. *Web Services Security* — XML security framework, Goals of Cryptography, Hash Cipher, Symmetric Cipher, Asymmetric Cipher, XML encryption, Digital signature, Digital Certificate, XML Encryption, SAML, structure.

### Text Book(s):

1. R. Nagappan, R. Skoczylas, R.P. Sriganesh, *Developing Java Web Services*, Wiley India, 2008.
2. Eric Newcomer and Greg Lomow, *Understanding SQA with Web Services*, Pearson, 2009
3. James McGovern, Sameer Tyagi et al., *Java Web Service Architecture*, Elsevier, 2009.

### Reference Book(s):

1. S. Graham, *Building Web Services with Java*, Pearson, Second Edition, 2008.
2. D.A. Chappell & T. Jewell, *Java Web Services*, O'Reilly, SPD.
3. McGovern, et al., *Java Web Services Architecture*, Morgan Kaufmann Publishers, 2005.

## MCAP 575: Pervasive and Ubiquitous Computing

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic knowledge in Distributed systems.

### Objectives:

- to acquire a conceptual foundation in the area of Pervasive Computing aspects.
- to provide a balanced treatment of the mechanisms and environments of pervasive computing.

### Outcomes:

- Ability to use the concepts in developing new applications.

### **Module - I: Fundamental Concepts and Theories**

**(9hrs)**

Introduction to ubiquitous Computing – History – Development – The Ubiquitous Portal – Grid, RFID Technologies – Ambient Intelligence.

### **Module - II: Development and Design Methodologies**

**(9hrs)**

Ubiquitous and Pervasive Application Design – Designing Pervasive and Multimodal Interactive System – pervasive computing: A Conceptual Framework – Deploying User Interfaces for workflow information systems – Ubiquitous and Pervasive case study Applications.

### **Module - III: Tools and Technologies**

**(9hrs)**

Deploying Pervasive Technologies – Embedding ubiquitous Technologies – Ubiquitous Computing Technologies in Education – Potential and possibilities – problem and pitfalls.

### **Module - IV: Utilization and Application**

**(9hrs)**

Pervasive Healthcare: Problems and Potentials – Implementing RFID technologies in Hospital – Ubiquitous Healthcare (RFID) in Hospitals – Ubiquitous Risk Analysis – RFID: A framework of Uses and Opportunities.

### **Module - V: Critical Issues and Emerging Trends**

**(9hrs)**

Privacy Issues of Applying RFID – An Evaluation of the RFID Security Benefits – Security and Privacy Issues in RFID based Wireless Networks – Pervasive and Ubiquitous Computing Databases: critical Issues and Challenges – Emerging Trends – case study.

### Text Book(s):

1. Symonds, Judith, ed. *Ubiquitous and Pervasive Computing: Concepts, Methodologies, Tools, and Applications: Concepts, Methodologies, Tools, and Applications*. IGI Global, 2009.

### Reference Book:

1. Bakhouya, Mohamed. *Ubiquitous and pervasive computing: architectures and protocols for applications design*. Proceedings of the 3rd workshop on Agent-oriented software engineering challenges for ubiquitous and pervasive computing. ACM, 2009.

# MCAP 576: Cloud Computing

L	T	P	C
3	0	0	3

## Pre-requisite:

- Basic knowledge in distributed systems.

## Objectives:

- To analyze the components of cloud computing and its business perspective.
- To evaluate the various cloud development tools.
- To collaborate with real time cloud services.

## Outcomes:

- Ability to use the concepts in developing new applications.

### **Module -I: Introduction**

**(9hrs)**

Overview of Computing Paradigm - Recent trends in Computing - Grid Computing, Cluster Computing, Distributed Computing, Utility Computing, Cloud Computing - Evolution of cloud computing - Cloud Computing (NIST Model) – Characteristics-Pros and Cons of Cloud Computing, Cloud computing vs. Cluster computing vs. Grid computing - Role of Open Standards - Cloud Computing Architecture - Cloud computing stack - Service Models (XaaS) - Deployment Models.

### **Module - II: Infrastructure as a Service (IaaS)**

**(9hrs)**

Infrastructure as a Service (IaaS) – Introduction- IaaS definition, virtualization, Different approaches to virtualization, Hypervisors, Machine Image, Virtual Machine (VM) - Resource Virtualization – Server, Storage, Network, Virtual Machine (resource) provisioning and manageability, storage as a service, Data storage in cloud computing (storage as a service) - Examples - Amazon EC2 - Renting, EC2 Compute Unit, Platform and Storage, pricing, customers – Eucalyptus.

### **Module - III: Platform as a Service (PaaS)**

**(9hrs)**

Platform as a Service (PaaS) - Introduction - What is PaaS, Service Oriented Architecture (SOA) - Cloud Platform and Management – Computation, Storage – Examples - Google App Engine, Microsoft Azure, Salesforce.com, Force.com platform - Software as a Service (PaaS) - Introduction to SaaS - Web services - Web 2.0 - Web OS - Case Study on SaaS.

### **Module - IV: Service Management in Cloud Computing**

**(9hrs)**

Service Management in Cloud Computing - Service Level Agreements (SLAs) - Billing & Accounting - Comparing Scaling Hardware: Traditional vs. Cloud - Economic of scaling: Benefitting enormously - Managing Data - Looking at Data, Scalability & Cloud Services, Database & Data Stores in Cloud, Large Scale Data Processing.

### **Module - V: Cloud Security**

**(9hrs)**

Cloud Security - Infrastructure Security - Network level security, Host level security, Application level security - Data security and Storage - Data privacy and security issues, Jurisdictional issues raised by Data location - Identity & Access Management - Access Control - Trust, Reputation, Risk - Authentication in cloud computing, Client access in cloud, Cloud contracting Model, Commercial and business considerations.

## Text Book(s):

1. Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, *Cloud Computing: Principles and Paradigms*, Wiley, 2011.
2. Ronald L. Krutz, Russell Dean Vines, *Cloud Security: A Comprehensive Guide to Secure Cloud Computing*, Wiley-India, 2010.

## Reference Book(s):

1. Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi, *Mastering Cloud Computing*, Mc Graw Hill Education, 2013.
2. Nikos Antonopoulos, Lee Gillam, *Cloud Computing: Principles, Systems and Applications*, Springer, 2012.
3. Barrie Sosinsky, *Cloud Computing Bible*, Wiley-India, 2010.

## MCAP 577: Internet of Things

L	T	P	C
3	0	0	3

### Pre-requisite:

- Basic knowledge in computer networks and working of sensors.

### Objectives:

- To understand IoT Market perspective.
- To understand State of the Art – IoT Architecture.
- To understand Real World IoT Design Constraints, Industrial Automation and Commercial Building Automation into IoT.

### Outcomes:

- Ability to develop small applications using IoT.

### **Module - I: M2M and IoT-Introduction**

**(9hrs)**

*The Vision – Introduction – From M2M to IoT – M2M towards IoT – the global context – A use case example – Differing Characteristics.*

### **Module - II: M2M and IoT-A Market Perspective**

**(9hrs)**

*Introduction – Some Definitions – M2M Value Chains – IoT Value Chains – An emerging industrial structure for IoT – M2M to IoT – An Architectural Overview – Building an architecture – Main design principles and needed capabilities – An IoT architecture outline – standards considerations.*

### **Module - III: M2M and IoT Technology Fundamentals**

**(9hrs)**

*Devices and gateways – Local and wide area networking – Data management – Business processes in IoT – Everything as a Service (XaaS) – M2M and IoT Analytics – Knowledge Management.*

### **Module - IV: IoT Architecture – State of the Art**

**(9hrs)**

*Introduction – State of the art – Architecture Reference Model – Introduction – Reference Model and architecture – IoT reference Model.*

### **Module - V: IoT Reference Architecture**

**(9hrs)**

*Introduction – Functional View – Information View – Deployment and Operational View – Other Relevant architectural views – Real-World Design Constraints – Introduction – Technical Design constraints – hardware is popular again – Data representation and visualization – Interaction and remote control – Industrial Automation – Service-oriented architecture – based device integration.*

### **Text Book(s):**

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, *From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence*, Academic Press, First Edition, 2014.

### **Reference Book(s):**

1. Vijay Madisetti and Arshdeep Bahga, *Internet of Things (A Hands-on-Approach)*, VPT, First Edition, 2014.
2. Francis da Costa, *Rethinking the Internet of Things: A Scalable Approach to Connecting Everything*, Apress Publications, First Edition, 2013.



# **ARTIFICIAL INTELLIGENCE**

# MCAP 581: Introduction to Artificial Intelligence and Expert Systems

L	T	P	C
3	0	0	3

## Pre-requisite:

- Exposure to Algorithms, Data structure and Mathematical Logic.

## Objectives:

- Explore basic concepts of AI and expert systems.

## Outcomes:

- Ability to explore logic for solving various AI problems.

### **Module -I: Introduction**

**(9hrs)**

AI – Foundations of AI, Intelligent Agents – Agents and Environments – Good Behaviour – Nature of Environments – Structure of Agents.

### **Module - II: Problemsolving**

**(9hrs)**

Problem Solving Agents – Searching for solutions- Uninformed Search Strategies – Informed Search Strategies, heuristic functions.

### **Module - III: Search Algorithms**

**(9hrs)**

Local search algorithms and optimization problems – Searching with nondeterministic Actions, Constraint satisfaction problems.

### **Module - IV: Expert systems**

**(9hrs)**

Expert systems – Introduction – Difference between expert system and conventional programs – Expert system organization – Architecture of Expert system – Knowledge representation techniques- Knowledge acquisition techniques - Inference Engine- Explanation systems.

### **Module - V: Languages and Tools**

**(9hrs)**

Working with LISP, Prolog – Apache Spark.

## Text Book(s):

1. Stuart J Russell and Peter Norvig, Artificial Intelligence – A Modern Approach, PHI Learning, Third Edition, 2010.
2. Patterson W D, Introduction to Artificial Intelligence and Expert Systems, PHI Learning, First Edition, 1995.

## Reference Book:

1. Elaine Rich and Kelvin Knight, Artificial Intelligence, TMH, Third Edition, 2009.

## MCAP 582: Neural Networks

L	T	P	C
3	0	0	3

### Pre-requisite:

- Knowledge in Artificial Intelligence.

### Objectives:

- Develop the skill in basic understanding on neural network.
- Explore the Advanced methods of representing information in ANN.
- Exposure to many real-world control problems.

### Outcomes:

- Ability to use in various AI problems.

### **Module -I: Introduction**

**(9hrs)**

Fundamentals of neural networks – model of an artificial neuron – neural network architectures – Learning methods – Taxonomy of Neural network architectures – Standard back propagation algorithms – selection of various parameters – variations Applications of back propagation algorithms.

### **Module - II: ANN Architectures**

**(9hrs)**

Associative memory – exponential BAM – Associative memory for real coded pattern pairs – Applications adaptive resonance theory – introduction – ART 1 – ART2 – Applications.

### **Module - III: Self organizing maps**

**(9hrs)**

Kohonen self-organizing maps – learning vector quantization – counter propagation networks – industrial applications.

### **Module - IV: Advances in NN**

**(9hrs)**

Fundamentals of genetic algorithms – genetic modelling – hybrid systems – integration of fuzzy logic, neural networks and genetic algorithms – non-traditional optimization techniques like ant colony optimization – Particle swarm optimization and artificial immune systems.

### **Module -V: Applications**

**(9hrs)**

Pattern Recognition – Prediction – Robotics – Case study.

### Text Book(s):

1. James A. Freeman and David M. Skapura, Neural Networks Algorithms, Applications, and Programming Techniques, 2003, Addison Wesley, 2003.
2. Laurance Fausett, Fundamentals of Neural Networks, 1992, Prenticehall.
3. C.M. Bishop, Neural networks and Pattern recognition, 2003, Oxford University
4. Mitchell Melanie, An Introduction to Genetic Algorithm, 1996, MIT Press.

# MCAP 583: Fuzzy Logic

L	T	P	C
3	0	0	3

## Pre-requisites:

- *Mathematical Foundation of Computer Science and probability theory.*
- *Knowledge in programming languages.*

## Objectives:

- *To develop an elementary practical theory for automatic control of uncertain or imperfectly modelled systems encountered in engineering applications.*
- *To provide a basic exposition to the goals and methods of Fuzzy Logic.*

## Outcomes:

- *Ability to explore the concepts in various AI problems.*

### **Module - I: Fuzzy Set Theory**

**(9hrs)**

*The notion of fuzziness - what, why and when to apply fuzzy set, operations on fuzzy sets, fuzzy numbers, Crisp relations, fuzzy relations, Max-composition of fuzzy relation, Max\_-transitive closure, probability measures of fuzzy events, fuzzy expected value, fuzzy inference principle, Examples of use of fuzzy logic in control of real-world systems.*

### **Module - II: Neural Networks and Fuzzy Logic Fundamentals**

**(9hrs)**

*Artificial Neural Network Representation, Exclusive- OR-Problem, Linear Separability, learning and training algorithms, Back propagation – Back propagation training algorithm.*

### **Module - III: NeuroFuzzy Modelling**

**(9hrs)**

*Adaptive Neuro-Fuzzy Inference Systems – Architecture – Hybrid Learning Algorithm – Learning Methods that Cross-fertilize ANFIS and RBFN – Coactive Neuro Fuzzy Modelling – Framework Neuron Functions for Adaptive Networks – Neuro Fuzzy Spectrum.*

### **Module - IV: Fuzziness Measures**

**(9hrs)**

*Fuzzy measures – belief, plausibility and their properties, Dempster's rule of combination, consonant body of evidence – possibility, necessities, Measures of uncertainty Axiomatic formulation of Hartley information, Shannon's entropy, concepts of joint and conditional entropy and their properties; measures of non-specificity, Measures of dissonance and confusion.*

### **Module - V: Case Study**

**(9hrs)**

*Fuzzy geometry Application to some selected topics like pattern recognition, image processing, computer vision, optimization, control, data mining, Integration with other computing paradigm.*

## Reference Book(s):

1. G.J. Klir and T.A. Folger: *Fuzzy Sets, Uncertainty, and Information*, Prentice Hall, Englewood Cliffs, 1988
2. A. Kandel: *Fuzzy Mathematical Techniques With Applications*, Addison-Wesley, Englewood Cliffs, 1986.
3. J. C. Bezdek and S. K. Pal (Eds.): *Fuzzy Models for Pattern Recognition – Methods that Search for Structures in Data*, IEEE Press, Los Alamos, California, 1992.
4. S. K. Pal and D. Dutta Majumder: *Fuzzy Mathematical Approach to Pattern Recognition*, John Wiley (Halsted Press), New York, 1986.
5. M. M. Gupta: *Fuzzy Mathematical Models with Applications to Engineering and Management Science*, North Holland, Amsterdam, 1988.
6. T. J. Ross: *Fuzzy Logic With Engineering Applications*, McGraw Hill, Singapore, 1997.
7. J. C. Bezdek, J. M. Keller, R. Krishnapuram, and N. R. Pal: *Fuzzy Models and Algorithms for Pattern Recognition and Image Processing*, Kluwer Academic Publisher, Boston, 1999.

# MCAP 584: Decision Support Systems

L	T	P	C
3	0	0	3

## Pre-requisite:

- Exposure to AI and Mathematical Logic

## Objectives:

- Explore basic concepts of DSS

## Outcomes:

- Ability to explore the concepts in various AI problems.

### **Module - I: Decision making systems**

**(9hrs)**

Management support systems, Decision making systems, modelling and support – Introduction – Systems - models- Phases of decision making process- Making process- intelligence Phase – Design Phase- Choice phase – Implementation Phase – Decision makers – case study.

### **Module - II: Decision Support system**

**(9hrs)**

Overview–DSS configurations–Characteristics and capabilities of DSS–Components of DSS–Data Management Subsystem – Model management subsystems- Knowledge management subsystem – User- hardware- Classifications- Case study.

Modelling and Analysis - MSS modelling – Static and dynamic models – Certainty and uncertainty and Risk – Influence diagrams – Structure of MSS mathematical models.

### **Module - III: Business Intelligence and DSS Development**

**(9hrs)**

Nature and Sources of data, Data collections, problem and quality, DBMS in DSS- Data warehousing – Data Mart- Business Intelligence – OLAP- Data mining – Data visualization – GIS.

Introduction to DSS development- Change management–Technology levels and tools- Platforms- Tool selections- Team developed and End user developed DSS.

### **Module - IV: Collaborative Computing and intelligent**

**(9hrs)**

Group decision making, communication and collaboration – Group support system – GSS technologies – GSS meeting process- Distance learning and creativity and idea generation.

Intelligent systems over Internet – Web based intelligent systems – Intelligent agents – Characteristics, classification, types of agents – Intelligent based software agents – DSS agents and multi-agents – Web based recommendation system – managerial issues of Intelligent agents.

### **Module - V: Languages and Tools**

**(9hrs)**

Working with Lumina Analytical, Open rules, paramount decisions, PROSUITE.

## Text Book(s):

1. E Turban, J E Aronson, Decision Support systems and Intelligent systems, 2005, Seventh Edition, Pearson Education.

# MCAP 585: Introduction to Machine Learning

L	T	P	C
3	0	0	3

## Pre-requisite:

- Basic knowledge in artificial intelligence, learning activities.

## Objectives:

- To understand the concepts of machine learning.
- To appreciate supervised and unsupervised learning and their applications.
- To appreciate the concepts and algorithms of learning.

## Outcomes:

- Ability to explore logic for solving various AI problems.

### **Module -I: Introduction**

**(9hrs)**

Introduction: Definition-Examples of machine learning applications –Well posed learning problems- Designing a learning system- Perspectives and issues Concept learning and general to specific ordering: Inductive learning hypothesis- Concept learning as search – candidate elimination algorithm-inductive bias.

### **Module - II: Regression and classification**

**(9hrs)**

Regression: Linear Regression-Simple-Multiple Decision Tree-Pruning: Introduction –Representation-Algorithm-issues Classification: Support Vector machine – Naïve Bayes-Applications

### **Module - III: Clustering and Learning**

**(9hrs)**

Clustering: k-Means clustering– adaptive Hierarchical clustering –Applications- Neural network : Perceptron, multilayer network- back propagation- introduction to deep neural network Instance based learning :k-NN– Radial basis functions Case based reasoning- Reinforcement learning -Applications.

### **Module - IV: Probabilistic graphical models**

**(9hrs)**

Graphical Models: Undirected graphical models - Markov Random Fields - Directed Graphical Models -Bayesian Networks - Conditional independence properties - Inference – Learning Generalization - Hidden Markov Models - Conditional random fields(CRFs)

### **Module - V: Machine learning experiments**

**(9hrs)**

Design-Cross validation - Measuring Performance -Hypothesis testing- Assessing Performance -Comparison of algorithms, Datasets-Case study

## Text Book(s):

1. Tom M. Mitchell, Machine learning, McGraw-Hill, 1997.
2. Ethem Alpaydin, Introduction to Machine Learning, MIT Press, Third Edition, 2014.

# MCAP 586: Introduction to Robotics

L	T	P	C
3	0	0	3

## Pre-requisites:

- *Mathematical Foundation of Computer Science*
- *Machine Learning*
- *Natural Language Processing*

## Objectives:

- *To understand the different robotic configurations and their subsystems*

## Outcomes:

- *Ability to use the concepts in various AI problems.*

### **Module -I: Introduction**

**(9hrs)**

*Introduction to Robotics: Robot Anatomy - Coordinate Systems, Manipulators & Mobile Robots, Classification of Robots, Robot and effectors - special reference to servomotors Transmission and actuators, Robot Applications - Industrial application environment and work cells, Feeders and Oriented Device.*

### **Module - II: Drive systems**

**(9hrs)**

*Types of Robot Drives: Mechanical–Magnetic–Vacuum, Robot arm kinematics, World, Tool, DH transformation and Inverse Kinematics. Fundamentals of Closed loop control, PWM amplifiers, PID control.*

### **Module - III: Sensors and Machine Vision**

**(9hrs)**

*Robotics sensors: Range, Proximity, Touch, Force and Torque Sensing, uses of sensors in Robotics, Applications- Inspection – Identification - Visual Servoing and Navigation, Machine Vision - The sensing and digitizing function in Machine Vision - Image processing and analysis, Training and vision system, Robotic Application - Low and High-level vision.*

### **Module - IV: Robot Programming**

**(9hrs)**

*Features of various programming methods, Robot Task planning: concept, different methods, robot learning, Mobile Robot: Introduction, obstacle Representation, Motion Planning in fixed and Changing structure - Simple Programs.*

### **Module - V: Industrial Applications and Case Studies**

**(9hrs)**

*Application of robots: Material handling - Machine loading and unloading – Assembly – Inspection – Welding - Spray Painting - Mobile Robot Micro Robots - Recent developments in Robotics- Safety Considerations.*

## Text Book(s):

1. *Deb, S.R., Robotics Technology and Flexible Automation, Tata McGraw Hill publishing company limited, 1994.*
2. *Richard David Klafner, Thomas A. Chmielewski, Michael Negin, Robot Engineering: An integrated Approach, Prentice Hall of India Pvt. Ltd, 1994.*

## Reference Book(s):

1. *King Sun Fu, Rafael C. González, C. S. George Lee, Robotics: control, sensing, vision, and intelligence, McGraw-Hill, 1987.*
2. *Craig, J. J, Introduction to Robotics: Mechanics and Control, Addison-Wesley, London, Third Edition, 2004.*
3. *M.P. Groover, M. Weins, R.N. Nage, N.C. Odrey, Industrial Robotics, McGraw Hill*
4. *K.D. Richard, Chmielewski T.A and Michael, Robotic Engineering, PHI Learning.*
5. *K.S. Fu Gonzalez, Lee, Robotics Control, Sensing, Vision and intelligence.*

## MCAP 587: Soft Computing

L	T	P	C
3	0	0	3

### Pre-requisites:

- Linear Algebra, Multivariate Calculus, Probability Theory
- Knowledge in programming languages

### Objectives:

- To provide a strong foundation of fundamental concepts in Artificial Intelligence.
- To provide a basic exposition to the goals and methods of Artificial Intelligence.

### Outcomes:

- Ability to apply these techniques in applications which involve perception, reasoning and learning.

### **Module -I: Introduction**

**(9hrs)**

Introduction to soft computing - brief description of separate theories, Introduction to biological and artificial neural network, Classification algorithms- Decision Trees, Bayesian classifier - Neural Networks and Probabilistic Reasoning

### **Module - II: Neural Networks**

**(9hrs)**

Basic concepts of neural networks, Neural network architectures, Learning methods, Supervised and unsupervised learning, Architecture of a back-propagation network, Applications

### **Module - III: Fuzzy Sets**

**(9hrs)**

Fundamentals of fuzzy sets and fuzzy logic theory, fuzzy inference principle, Examples of use of fuzzy logic in control of real-world systems

### **Module -IV: Optimization**

**(9hrs)**

Derivative-based Optimization – Descent Methods – The Method of Steepest Descent – Classical Newton's Method – Step Size Determination – Derivative-free Optimization – Genetic Algorithms – Simulated Annealing – Random Search – Downhill Simplex Search

### **Module - V: Applications of computational intelligence**

**(9hrs)**

AI Search Algorithm- Predicate calculus- rules of inference- Semantic networks- frames- objects- Hybrid models, Applications - Printed Character Recognition – Inverse Kinematics Problems – Automobile Fuel Efficiency Prediction – Soft Computing for Colour Recipe Prediction

### Reference Book(s):

1. Jang J.S.R., Sun C. T. and Mizutani E- Neuro Fuzzy and Soft Computing Prentice Hall, New Jersey, 1998.
2. Munakata, T.: Fundamentals of the New Artificial Intelligence, Springer-Verlag New York, Inc., 1998.
3. Goldberg, Introduction to Genetic Algorithms.
4. Jang, Neuro-Fuzzy & Soft Computing, Pearsons.
5. Cordón, O., Herrera, F., Hoffman, F., Magdalena, L.: Genetic Fuzzy systems, World Scientific Publishing Co. Pte. Ltd., 2001.
6. Kecman, V.: Learning and Soft Computing, The MIT Press, 2001.
7. Nih. J. N. Artificial Intelligence, Harcourt Asia Ltd., 1998.



**MEMORANDUM OF  
UNDERSTANDING (MoU)**

Between

**POPE JOHN PAUL II COLLEGE OF EDUCATION  
PONDICHERRY**

And

**SIGMATIX INFOTECH PRIVATE LIMITED  
PONDICHERRY**

**6<sup>th</sup> January, 2021**

## MEMORANDUM OF UNDERSTANDING

This **Memorandum of Understanding** (MoU) is made between the parties referred below, on this day 6th January,2021, herein after referred as "Effective Date".

**Pope John Paul II College of Education** referred herein after as PJP or Party 1, a premier institution founded in 1986, with diversifying courses, adopting innovative digital teaching learning strategies, located in Villianur Main Road, Reddiarpalayam, Pondicherry-605010.

And

**Sigmatix Infotech Private Limited** referred herein after as Party 2, is a private Organization founded in 2017, located in No 5, Second floor, 1st Cross, Victoria Nagar, Reddiarpalayam, Pondicherry - 605 010.

### Whereas:

1. PJP and Sigmatix Infotech will be referred individually as Party and jointly as Parties.
2. Party 1 and Party 2 believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
3. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Related services.
4. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interests.
5. Sigmatix Infotech Private Limited, the Second Party is engages in Skill Development, Education and R&D Services in the fields of Web Development, Data Analysis, Robotics and Artificial Intelligence.
6. **Objective of the MoU:**

Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.



## 7. Scope and Services of MoU:

- The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry.
- Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Industrial Training & Visits:** The Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party.
- **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready.
- **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and will facilitate placements.
- Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- There is no financial commitment on the part of the **Pope John Paul II College of Education**, the First Party to take up any programme mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

## 8. Exclusivity of Agreement

1. **Sigmatix Infotech Private Limited** enters into this Non Exclusive MoU with Party 1.

## 9. Indemnification:

Both the parties mutually Indemnify the other party for services provided could not be provided, Professional and technical lapses of other party for any Direct or indirect or consequent loss or damage.

## 10. Duration of the MoU:

This MoU shall be valid from the Effective Date and shall remain in force for 3(three) year from the Effective date, unless terminated earlier by either Party as provided herein below.

Either party may terminate this MoU by giving thirty (30) days notice to the other party. On termination each party shall return to the other party all such confidential and proprietary information, documents and reference material of other party in its possession.

S. J. P. #

M. J.

**11. Changes in MoU:**

(i) The terms of this MoU may be modified/amended at any time subject to the mutual written agreement. Such modifications/changes shall be effective from the date which both the parties execute them in writing.

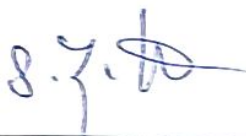


(ii) The MoU may be terminated by either party by giving 8 weeks of written notice. In the event of termination Sigmatix Infotech and PJP shall ensure that the interest of Users under this MoU is safeguarded to the extent possible.

**12. Dispute resolution:**

The laws of India shall govern this MoU. Any disputes between the parties shall be resolved by mutual discussions amicably. Unresolved disputes, if any shall be subject to resolution by arbitration in accordance with the Arbitration and Conciliation Act, 1996 (as amended from time to time and in force at the time when the proposal is made). The venue of Arbitration shall be Pondicherry. Both parties irrevocably submit to the exclusive jurisdiction of the courts in Pondicherry, for any action or proceeding regarding this MoU.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound, have duly executed this Agreement as of the date first above written.

For and behalf of,

	 
DIRECTOR POPE JOHN PAUL II COLLEGE OF EDUCATION REDDIARPALAYAM, PONDICHERRY	PROJECT MANAGER SIGMATIX INFOTECH PRIVATE LIMITED
Date: 06/01/2021	Date: 06/01/2021

Dr.S.ANTOINETTE AROUL JAYANTHI  
NET (CS), SET (CS)  
DIRECTOR  
Department of MCA  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-10.

**MEMORANDUM OF  
UNDERSTANDING (MoU)**

Between

**POPE JOHN PAUL II COLLEGE OF EDUCATION  
PONDICHERRY**

And

**SEC INFORMATION INDIA PRIVATE LIMITED  
PONDICHERRY**

**11<sup>th</sup> January, 2021**

## MEMORANDUM OF UNDERSTANDING

This **Memorandum of Understanding** (MoU) is made between the parties referred below, on this day 6th January, 2021, herein after referred as "Effective Date".

**Pope John Paul II College of Education** referred herein after as PJP or Party 1, a premier institution founded in 1986, located in Villianur Main Road, Reddiarpalayam, Pondicherry-605010.

And

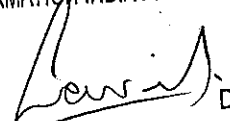
**SEC Information India Private Limited** referred herein after as SECI or Party 2, is a Private Software Company, located in Door No.139, Ground Floor, Eswarankoil Street, Pondicherry - 605 001.

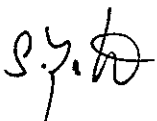
### Whereas:

1. PJP and SECI will be referred individually as Party and jointly as Parties.
2. Party 1 and Party 2 believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
3. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Related services.
4. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interests.
5. SECI, the Second Party is providing Internships, Leadership Management Programme and Software Training Programmes in the fields of Web Development and Machine Learning.
6. **Objective of the MoU:**

Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.

For SEC INFORMATION INDIA PRIVATE LIMITED

  
Director



#### 7. Scope and Services of MoU:

- The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry.
- Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Industrial Training & Visits:** The Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party.
- **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready.
- **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and will facilitate placements.
- Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- There is no financial commitment on the part of the **Pope John Paul II College of Education**, the First Party to take up any programme mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

#### 8. Exclusivity of Agreement

SECI enters into this Non Exclusive MoU with Party 1.

#### 9. Indemnification:


Both the parties mutually Indemnify the other party for services provided could not be provided, Professional and technical lapses of other party for any Direct or indirect or consequent loss or damage.

#### 10. Duration of the MoU:

This MoU shall be valid from the Effective Date and shall remain in force for 3(three) year from the Effective date, unless terminated earlier by either Party as provided herein below.

Either party may terminate this MoU by giving thirty (30) days notice to the other party. On termination each party shall return to the other party all such confidential and proprietary information, documents and reference material of other party in its possession.

For SEC INFORMATION INDIA PRIVATE LIMITED

  
Director

S. J. P.

**11. Changes in MoU:**

(i) The terms of this MoU may be modified/amended at any time subject to the mutual written agreement. Such modifications/changes shall be effective from the date which both the parties execute them in writing.

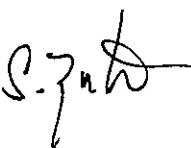
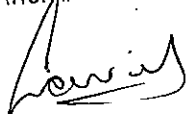
(ii) The MoU may be terminated by either party by giving 8 weeks of written notice. In the event of termination SECI and PJP shall ensure that the interest of Users under this MoU is safeguarded to the extent possible.

**12. Dispute resolution:**

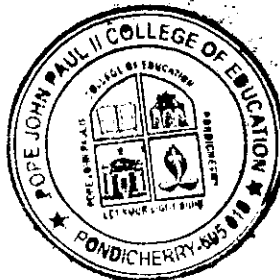
The laws of India shall govern this MoU. Any disputes between the parties shall be resolved by mutual discussions amicably. Unresolved disputes, if any shall be subject to resolution by arbitration in accordance with the Arbitration and Conciliation Act, 1996(as amended from time to time and in force at the time when the proposal is made). The venue of Arbitration shall be Pondicherry. Both parties irrevocably submit to the exclusive jurisdiction of the courts in Pondicherry, for any action or proceeding regarding this MoU.

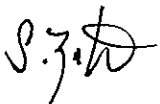
IN WITNESS WHEREOF, the undersigned, intending to be legally bound, have duly executed this Agreement as of the date first above written.

For and behalf of,

	For SEC INFORMATION INDIA PRIVATE LIMITED  Director
DIRECTOR POPE JOHN PAUL II COLLEGE OF EDUCATION REDDIARPALAYAM, PONDICHERRY	PROJECT MANAGER SEC INFORMATION INDIA PRIVATE LIMITED PONDICHERRY
Date: 11.01.2021	Date: 11.01.2021

**Dr.S.ANTOINETTE AROUL JAYANTHI**  
NET (CS), SET (CS)  
DIRECTOR  
Department of MCA  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-10.







**MEMORANDUM OF  
UNDERSTANDING (MoU)**

Between

**POPE JOHN PAUL II COLLEGE OF EDUCATION**

**PONDICHERRY**

And

**HITECH GROUP OF ENTERPRISES**

**AFFILIATED**

**HITECH INSTITUTION**

**PONDICHERRY**

**7<sup>th</sup> January, 2021**

## MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MoU) is made between the parties referred below, on this day 20th January, 2021, herein after referred as "Effective Date".

**Pope John Paul II College of Education** referred herein after as PJP or Party 1, a premier institution founded in 1986, with diversifying courses, adopting innovative digital teaching learning strategies, located in Villianur Main Road, Reddiarpalayam, Pondicherry-605010.

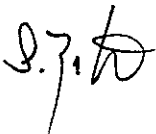
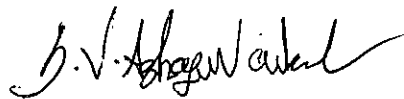
And

**Hitech Group of Enterprises** referred herein after as Hitech or Party 2, is a private Organization founded in 2017, located in No: 32, 100 Feet Road, Opp to NT mahal & Near Rajiv Gandhi Hospital, Ellaipillaichavadi, Puducherry, 605005

Whereas:

1. PJP and Hitech will be referred individually as Party and jointly as Parties.
2. Party 1 and Party 2 believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
3. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Related services.
4. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interests.
5. Hitech group of enterprises, the Second Party is engages in Skill Development, Education and Project works in the fields of Web Development, cloud computing AWS, Azure, GCP,.
6. **Objective of the MoU:**

Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.



**7. Scope and Services of MoU:**

- The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry.
- Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Industrial Training & Visits:** The Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party.
- **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready.
- **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and will facilitate placements.
- Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- There is no financial commitment on the part of the **Pope John Paul II College of Education**, the First Party to take up any programme mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

**8. Exclusivity of Agreement**

Hitech Group of Enterprises enters into this Non Exclusive MoU with Party 1.

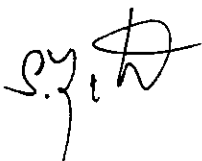
**9. Indemnification:**

Both the parties mutually Indemnify the other party for services provided could not be provided, Professional and technical lapses of other party for any Direct or indirect or consequent loss or damage.

**10. Duration of the MoU:**

This MoU shall be valid from the Effective Date and shall remain in force for 3(three) year from the Effective date, unless terminated earlier by either Party as provided herein below.

Either party may terminate this MoU by giving thirty (30) days notice to the other party. On termination each party shall return to the other party all such confidential and proprietary information, documents and reference material of other party in its possession.



11. Changes in MoU:

(i) The terms of this MoU may be modified/amended at any time subject to the mutual written agreement. Such modifications/changes shall be effective from the date which both the parties execute them in writing.

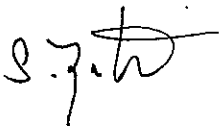
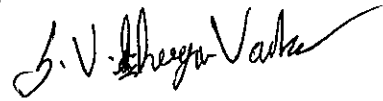
(ii) The MoU may be terminated by either party by giving 8 weeks of written notice. In the event of termination Leary Technologies and PJP shall ensure that the interest of Users under this MoU is safeguarded to the extent possible.

12. Dispute resolution:

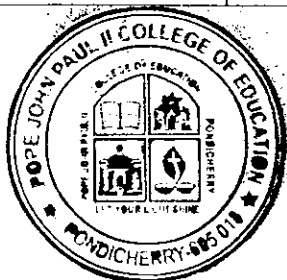
The laws of India shall govern this MoU. Any disputes between the parties shall be resolved by mutual discussions amicably. Unresolved disputes, if any shall be subject to resolution by arbitration in accordance with the Arbitration and Conciliation Act, 1996(as amended from time to time and in force at the time when the proposal is made). The venue of Arbitration shall be Pondicherry. Both parties irrevocably submit to the exclusive jurisdiction of the courts in Pondicherry, for any action or proceeding regarding this MoU.


IN WITNESS WHEREOF, the undersigned, intending to be legally bound, have duly executed this Agreement as of the date first above written.

For and behalf of,

	
DIRECTOR POPE JOHN PAUL II COLLEGE OF EDUCATION REDDIARPALAYAM, PONDICHERRY	PROJECT MANAGER HITECH GROUP OF ENTERPIRSÉS AFFILIATED HITECH INSTITUTION,PONDICHERRY
Date: 7/01/2021	Date: 07.01.2021

**Dr.S.ANTOINETTE AROUL JAYANTHI**  
NET (CS), SET (CS)  
DIRECTOR  
Department of MCA  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-10.



  
**Hi-Tech**  
Institution  
No.33, 100 Feet Road,  
Laxmi Nivady, Pondicherry-605 005.  
Ph. 8438109035, 8220217640

•  
•  
**MEMORANDUM OF  
UNDERSTANDING (MoU)**

Between

**POPE JOHN PAUL II COLLEGE OF EDUCATION  
PONDICHERRY**

And

**ARIZE ZONE IT SOLUTIONS  
CHENNAI**

**7<sup>th</sup> January, 2021**

## MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MoU) is made between the parties referred below, on this day 6th January, 2021, herein after referred as "Effective Date".

**Pope John Paul II College of Education** referred herein after as PJP or Party 1, a premier institution founded in 1986, located in Villianur Main Road, Reddiarpalayam, Pondicherry-605010.

And

**Arise Zone IT Solutions** referred herein after as AZ or Party 2, is a Private IT Solutions Company, located in No.26, Southwest Boag Road, T. Nagar, Chennai 600 017.

### Whereas:

1. PJP and AZ will be referred individually as Party and jointly as Parties.
2. Party 1 and Party 2 believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
3. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Related services.
4. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interests.
5. AZ, the Second Party is providing Software Training Programmes and have been providing recruitment opportunities.
6. **Objective of the MoU**

Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.

S. J. P. 1

S. J. P. 2  
07/01/2021

**7. Scope and Services of MoU:**

- The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry.
- Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Industrial Training & Visits:** The Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party.
- **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready.
- **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and will facilitate placements.
- Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- There is no financial commitment on the part of the **Pope John Paul II College of Education**, the First Party to take up any programme mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

**8. Exclusivity of Agreement**

AZ enters into this Non Exclusive MoU with Party 1.

**9. Indemnification:**

Both the parties mutually Indemnify the other party for services provided could not be provided, Professional and technical lapses of other party for any Direct or indirect or consequent loss or damage.

**10. Duration of the MoU:**

This MoU shall be valid from the Effective Date and shall remain in force for 3(three) year from the Effective date, unless terminated earlier by either Party as provided herein below.

Either party may terminate this MoU by giving thirty (30) days notice to the other party. On termination each party shall return to the other party all such confidential and proprietary information, documents and reference material of other party in its possession.

*S. J. Paul*

*S. J. Paul*  
07/09/2024

**11. Changes in MoU:**

(i) The terms of this MoU may be modified/amended at any time subject to the mutual written agreement. Such modifications/changes shall be effective from the date which both the parties execute them in writing.

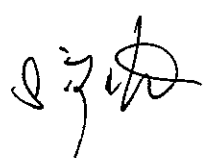

(ii) The MoU may be terminated by either party by giving 8 weeks of written notice. In the event of termination AZ and PJP shall ensure that the interest of Users under this MoU is safeguarded to the extent possible.

**12. Dispute resolution:**

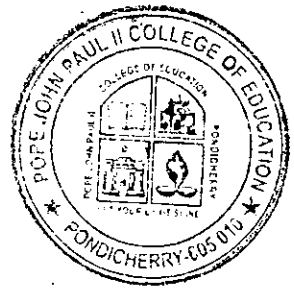
The laws of India shall govern this MoU. Any disputes between the parties shall be resolved by mutual discussions amicably. Unresolved disputes, if any shall be subject to resolution by arbitration in accordance with the Arbitration and Conciliation Act, 1996(as amended from time to time and in force at the time when the proposal is made). The venue of Arbitration shall be Pondicherry. Both parties irrevocably submit to the exclusive jurisdiction of the courts in Pondicherry, for any action or proceeding regarding this MoU.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound, have duly executed this Agreement as of the date first above written.

For and behalf of,

	
DIRECTOR POPE JOHN PAUL II COLLEGE OF EDUCATION REDDIARPALAYAM, PONDICHERRY	MANAGING DIRECTOR, ARISE ZONE IT SOLUTIONS CHENNAI
Date: 07.01.2021	Date: 07.01.2021

Dr. S. ANTONY  
Dr. S. ANTONY  
DIRECTOR, SET (CS)  
Director, Department of MCA  
Pope John Paul II College of Education  
Reddiarpalayam





**MEMORANDUM OF  
UNDERSTANDING (MoU)**

Between

**POPE JOHN PAUL II COLLEGE OF EDUCATION**

**PONDICHERRY**

And

**GRAFIKOS  
CHENNAI**

**11<sup>th</sup> January, 2021**

## MEMORANDUM OF UNDERSTANDING

This **Memorandum of Understanding (MoU)** is made between the parties referred below, on this day 6th January,2021, herein after referred as "Effective Date".

**Pope John Paul II College of Education** referred herein after as PJP or Party 1, a premier institution founded in 1986, located in Villianur Main Road, Reddiarpalayam, Pondicherry-605010.

And

**Grafikos** referred herein after as Grafikos or Party 2, is a Private designing Company, located in Basement Plot 27, Srinivasa Nagar, OMR Kottivakkam, Chennai, Tamilnadu, 600041.

### Whereas:

1. PJP and Grafikos will be referred individually as Party and jointly as Parties.
2. Party 1 and Party 2 believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.
3. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Education and Related services.
4. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interests.
5. Grafikos, the Second Party is providing Internships, Leadership Management Programme and Software Training Programmes in the fields of Web Development and Machine Learning.
6. **Objective of the MoU:**

Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.

## 7. Scope and Services of MoU:

- The budding graduates from the institutions could play a key role in technological up-gradation, innovation and competitiveness of an industry.
- Both parties believe that close co-operation between the two would be of major benefit to the student community to enhance their skills and knowledge.
- **Industrial Training & Visits:** The Second Party to permit the Faculty and Students of the First Party to visit its group companies and also involve in Industrial Training Programs for the First Party.
- **Skill Development Programs:** Second Party to train the students of First Party on the emerging technologies in order to bridge the skill gap and make them industry ready.
- **Guest Lectures:** Second Party to extend the necessary support to deliver guest lectures to the students of the First Party on the technology trends and in house requirements.
- **Placement of Trained Students:** Second Party will actively engage to help the delivery of the training and placement of students of the First Party into internships/jobs; and will facilitate placements.
- Both Parties to obtain all internal approvals, consents, permissions, and licenses of whatsoever nature required for offering the Programmes on the terms specified herein.
- There is no financial commitment on the part of the **Pope John Paul II College of Education**, the First Party to take up any programme mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

## 8. Exclusivity of Agreement

Grafikos enters into this Non Exclusive MoU with Party 1.

## 9. Indemnification:

Both the parties mutually Indemnify the other party for services provided could not be provided, Professional and technical lapses of other party for any Direct or indirect or consequent loss or damage.

## 10. Duration of the MoU:

This MoU shall be valid from the Effective Date and shall remain in force for 3(three) year from the Effective date, unless terminated earlier by either Party as provided herein below.

Either party may terminate this MoU by giving thirty (30) days notice to the other party. On termination each party shall return to the other party all such confidential and proprietary information, documents and reference material of other party in its possession.

**11. Changes in MoU:**

(i) The terms of this MoU may be modified/amended at any time subject to the mutual written agreement. Such modifications/changes shall be effective from the date which both the parties execute them in writing.



(ii) The MoU may be terminated by either party by giving 8 weeks of written notice. In the event of termination Grafikos and PJP shall ensure that the interest of Users under this MoU is safeguarded to the extent possible.

**12. Dispute resolution:**

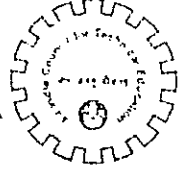
The laws of India shall govern this MoU. Any disputes between the parties shall be resolved by mutual discussions amicably. Unresolved disputes, if any shall be subject to resolution by arbitration in accordance with the Arbitration and Conciliation Act. 1996(as amended from time to time and in force at the time when the proposal is made). The venue of Arbitration shall be Pondicherry. Both parties irrevocably submit to the exclusive jurisdiction of the courts in Pondicherry, for any action or proceeding regarding this MoU.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound, have duly executed this Agreement as of the date first above written.

For and behalf of,

	<b>For GRAFIKOS</b>  <b>Proprietor</b>
<b>DIRECTOR</b> POPE JOHN PAUL II COLLEGE OF EDUCATION REDDIARPALAYAM, PONDICHERRY	<b>PROJECT MANAGER</b> GRAFIKOS CHENNAI
Date: 11.01.2021	Date: 11.01.2021

**Dr.S.ANTOINETTE AROUL JAYANTHI**  
NET (CS), SET (CS)  
DIRECTOR  
Department of MCA  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-10.



अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(An Autonomous Body of the Govt. of India by Parliament Act (52), 1937)

3379010-13  
Tel.(011) 3379015-18  
Telefax : 011-3379023

प्रो. बी. जी. संगमेश्वर  
Prof. B. G. Sangameshwara  
सलाहकार  
Advisor

F.No.PN-01/MCP-CS/97  
Dated: July 15, 1999

Secretary to Government (Education),  
Govt. of Pondicherry  
Pondicherry - 605 001.

Sub: Approval to Arch Diocese of Pondicherry, Bishop's House, Cathedral Street, Pondicherry - 605 010 for establishment of Pope John Paul II College of Education, Reddiarpalayam, Pondicherry - 605 010 to conduct MCA (Full Time) programme.

Sir,

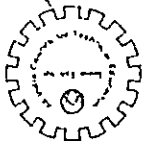
I am directed to state that on consultations with the concerned State Govt. and the affiliating University and on recommendations of the sub-committee of the concerned All India Board for Computer Science and the Expert Committee constituted by the Council, the All India Council for Technical Education (AICTE) is pleased to accord approval to Arch Diocese of Pondicherry, Bishop's House, Cathedral Street, Pondicherry - 605 010 for establishment of Pope John Paul II College of Education, Reddiarpalayam, Pondicherry - 605 010 for conducting the following courses & intake for the academic year 1999-2000.

COURSE	ENTRY LEVEL	ANNUAL INTAKE
Master in Computer Application (MCA) 3 years Full Time (Day Programme)	Bachelor's Degree in any discipline with mathematics as compulsory subject at 10+2 level.	30 (Thirty)

This approval has been accorded subject to fulfillment of norms & standards of the Council.

The admission will be made in accordance with Regulations notified by the AICTE vide GSR 476(E) dated 20-05-1994 based on the Hon'ble Supreme Court Judgement dated 04-02-1993 with regard to WP(C) No. 607 of 1992 in the case of Unni Krishnan JP and other etc. V/s. State Government of Andhra Pradesh and others etc. and later judgements. No Management/Institute/Trust or Society shall announce admissions directly under any circumstances. Any action contrary to this provision taken by the Institute will make it liable to be derecognised.

Contd\2....



अखिल भारतीय तकनीकी शिक्षा परिषद्, नई दिल्ली  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION, New Delhi

Continuation Sheet .....

- 2 -

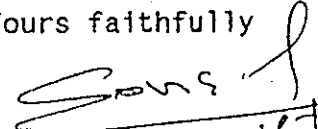
Further in the event of infringement/contravention or non-compliance of the Norms and Standards as prescribed by the AICTE, the Council shall take further action to withdraw approval and the liability arising out of such withdrawal of approval will be solely that of the Management/ Trust/ Society and/or Institution.

The Council may inspect/visit the Institute/University at any time it may deem fit to note progress/compliance.

The attention of the Management is drawn to the fact that the approval given now is only for one academic session, at the end of which an Expert Committee shall visit to assess if the Norms and Standards as stipulated by AICTE are fulfilled, and only then will the continuation or otherwise shall be intimated.

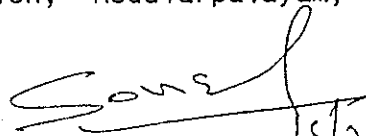
You are requested to kindly monitor the progress made by the above mentioned Institute for fulfillment of the Norms and Standards of the Council and keep the concerned Regional Office and AICTE, New Delhi informed.

Yours faithfully

  
(B.G. Sangameshwara) 15/2/02

Copy to:-

1. Director of Technical Education, Govt. of Pondicherry, Pondicherry - 605 001.
2. The Regional Officer, Southern Regional Office, AICTE, Shastri Bhavan, 26 Haddows Road, Chennai - 600 006.
3. The Registrar, Pondicherry University, University Campus, R. Venkataraman Nagar, Kalapet, Pondicherry - 605 014.
4. The Principal, Pope John Paul II College of Education, Reddiarpalayam, Pondicherry - 605 010

  
(B.G. Sangameshwara) 15/2/02



**APPROVAL PROCESS 2021-22**

**Extension of Approval (EoA)**

F.No. Southern/1-9317590203/2021/EOA

Date: 25-Jun-2021

To,

The Principal Secretary (Education),  
 Govt. of Pondicherry, Chief Secretariat,  
 Beach Road, Goubert Revenue  
 Puducherry-605001

**Sub: Extension of Approval for the Academic Year 2021-22**

Ref: Application of the Institution for Extension of Approval for the Academic Year 2021-22

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations, Notified on 4th February, 2020 and amended on 24th February 2021 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to:

<b>Permanent Id</b>	1-24234541	<b>Application Id</b>	1-9317590203
<b>Name of the Institution /University</b>	POPE JOHN PAUL II COLLEGE OF EDUCATION	<b>Name of the Society/Trust</b>	LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE
<b>Institution /University Address</b>	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010	<b>Society/Trust Address</b>	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001,PONDICHERRY,PUDUCHERRY, Puducherry, 605001
<b>Institution /University Type</b>	Private-Self Financing	<b>Region</b>	Southern

**To conduct following Programs / Courses with the Intake indicated below for the Academic Year 2021-22**

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2020-21	Intake Approved for 2021-22	NRI Approval Status	FN / Gulf quota/ OCI/ Approval Status
MCA	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	Pondicherry University, Pondicherry	30	30	NA	NA

**It is mandatory to comply with all the essential requirements as given in APH 2021-22 (Appendix 6)**

The Institution/ University is having the following deficiencies as per the online application submitted to AICTE (self-disclosure based) and the same shall be complied within Six Months from the date of issue of this EoA

## Deficiencies\* Noted (based on Self Disclosure)

Faculty Pay as per VI pay commission.

\*Please refer Deficiency Report for details

### Important Instructions

1. The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2019-20 is implemented without affecting the reservation percentages of SC/ ST/ OBC/ General. However, this would not be applicable in the case of Minority Institutions referred to the Clause (1) of Article 30 of Constitution of India. Such Institution shall be permitted to increase in annual permitted strength over a maximum period of two years.
2. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time now amalgamated as total intake shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2021-22 for the Total Approved Intake. Further, the Institutions Deemed to be Universities/ Institutions having Accreditation/ Autonomy status shall have to maintain the Faculty: Student ratio as specified in the Approval Process Handbook.
3. Strict compliance of Anti-Ragging Regulation, Establishment of Committee for SC/ ST, Establishment of Internal Complaint Committee (ICC), Establishment of Online Grievance Redressal Mechanism, Barrier Free Built Environment for disabled and elderly persons, Fire and Safety Certificate should be maintained as per the provisions made in Approval Process Handbook and AICTE Regulation notified from time to time.
4. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

**Prof.Rajive Kumar**  
**Member Secretary, AICTE**

Copy \*\* to:

1. **The Director of Technical Education\*\*, Puducherry**
2. **The Registrar\*\*,  
Pondicherry University, Pondicherry**
3. **The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
Villianur Main Road,  
Reddiarpalayam, Pondicherry - 605 010,  
Puducherry,Puducherry,  
Puducherry,605010**
4. **The Secretary / Chairman,  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001  
PONDICHERRY,PUDUCHERRY  
Puducherry,605001**
5. **The Regional Officer,  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu**
6. **Guard File(AICTE)**



Note: Validity of the Course details may be verified at <http://www.aicte-india.org/> .

---

\*\* Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through official Email Address to the concerned Authorities mentioned above.

*This is a computer generated Statement. No signature Required*

# All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg, Vasant Kunj, New Delhi-110070 Website: [www.aicte-india.org](http://www.aicte-india.org)



## APPROVAL PROCESS 2020-21

### Extension of Approval (EoA)

F.No. Southern/1-7101776429/2020/EOA

Date: 09-Jun-2020

To,

The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

#### Sub: Extension of Approval for the Academic Year 2020-21

Ref: Application of the Institution for Extension of Approval for the Academic Year 2020-21

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2020 notified by the Council vide notification number F.No. AB/AICTE/REG/2020 dated 4<sup>th</sup> February 2020 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

<b>Permanent Id</b>	1-24234541	<b>Application Id</b>	1-7101776429
<b>Name of the Institute</b>	POPE JOHN PAUL II COLLEGE OF EDUCATION	<b>Name of the Society/Trust</b>	LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE
<b>Institute Address</b>	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010	<b>Society/Trust Address</b>	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001,PONDICHERRY,PUDUCHERRY, 605001
<b>Institute Type</b>	Private-Self Financing	<b>Region</b>	Southern

#### To conduct following Courses with the Intake indicated below for the Academic Year 2020-21

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2019-20	Intake Approved for 2020-21	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
MCA	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	Pondicherry University, Pondicherry	0	30	NA	NA

#### It is mandatory to comply with all the essential requirements as given in APH 2020-21 (Appendix 6)

The Institution/ University is having the following deficiencies as per the online application submitted to AICTE and the same shall be complied within Six Months from the date of issue of this EoA

Deficiencies Noted based on Self Disclosure	
Particulars	Deficiency
<b>1. Administrative Area</b>	
Central Store	Yes
<b>2. Amenities Area</b>	
Boys Common Room	Yes
Cafeteria	Yes
Stationery Store	Yes
<b>3. Instructional Area – MCA</b>	
Seminar Hall	Yes
<b>4. Instructional Area Common Facilities</b>	
Computer Center	Yes
<b>5. Library Facilities</b>	
Volumes	Yes

\*Please refer Deficiency Report for details

### Important Instructions

1. The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2020-21 is implemented without affecting the reservation percentages of SC/ ST/ OBC/ General. However, this would not be applicable in the case of Minority Institutions referred to the Clause (1) of Article 30 of Constitution of India. Such Institution shall be permitted to increase in annual permitted strength over a maximum period of two years beginning with the Academic Year 2020-21
2. The Institution offering courses earlier in the Regular Shift, First Shift, Second Shift/Part Time now amalgamated as total intake shall have to fulfil all facilities such as Infrastructure, Faculty and other requirements as per the norms specified in the Approval Process Handbook 2020-21 for the Total Approved Intake. Further, the Institutions Deemed to be Universities/ Institutions having Accreditation/ Autonomy status shall have to maintain the Faculty: Student ratio as specified in the Approval Process Handbook. All such Institutions/ Universities shall have to create the necessary Faculty, Infrastructure and other facilities WITHIN 2 YEARS to fulfil the norms based on the Affidavit submitted to AICTE.
3. In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.
4. Strict compliance of Anti-Ragging Regulation: - Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 373/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

**Prof.Rajive Kumar**  
**Member Secretary, AICTE**

Copy to:

1. **The Director Of Technical Education\*\*, Puducherry**
2. **The Registrar\*\*,  
Pondicherry University, Pondicherry**
3. **The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
Villianur Main Road,**

Reddiarpalayam, Pondicherry - 605 010,  
Puducherry,Puducherry,  
Puducherry,605010

4. **The Secretary / Chairman,**  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001  
PONDICHERRY,PUDUCHERRY  
,605001
5. **The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
6. **Guard File(AICTE)**

Note: Validity of the Course details may be verified at <http://www.aicte-india.org/>

---

\*\* Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through official Email Address to the concerned Authorities mentioned above.

# All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg, Vasant Kunj, New Delhi-110070 Website: [www.aicte-india.org](http://www.aicte-india.org)



## APPROVAL PROCESS 2018-19

### Extension of Approval (EOA)

F.No. Southem/1-3512395203/2018/EOA

Date: 04-Apr-2018

To,

The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

**Sub: Extension of Approval for the Academic Year 2018-19**

Ref: Application of the Institution for Extension of approval for the Academic Year 2018-19

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2016 notified by the Council vide notification number F.No.AB/AICTE/REG/2016 dated 30/11/2016 and amended on December 5, 2017 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

<b>Name of the Institute</b>	POPE JOHN PAUL II COLLEGE OF EDUCATION	<b>Name of the Society/Trust</b>	LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE
<b>Institute Address</b>	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010	<b>Society/Trust Address</b>	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001, PONDICHERRY, PUDUCHERRY, Puducherry, 605001
<b>Institute Type</b>	Unaided - Private	<b>Region</b>	Southern

Opted for Change from Women to Co-Ed and vice versa	No	Change from Women to Co-Ed and vice versa Approved or Not	NA
Opted for Change of Name	No	Change of Name Approved or Not	NA
Opted for Change of Site	No	Change of Site Approved or Not	NA
Opted for Conversion from Degree to Diploma or vice versa	No	Conversion for Degree to Diploma or vice versa Approved or Not	NA
Opted for Organization Name Change	No	Change of Organization Name Approved or Not	NA

**To conduct following Courses with the Intake indicated below for the Academic Year 2018-19**

MCA	1st	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	FT	Pondicherry University, Pondicherry	30	NA	NA	NA
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+FT -Full Time, PT-Part Time

### Deficiencies Noted based on Self Disclosure

Particulars	Deficiency
List of faculty and data uploaded on the Institute web portal	Yes
Are all approved teaching faculty being paid as per VI pay commission?	Yes
Constitution of Anti-Ragging Squad	Yes
Barrier free Environment	Yes
General Insurance	Yes
Medical & Counseling	Yes
Establishment of committee for SC/ST	Yes
Establishment of Grievance Redressal Committee in the Institute and Appointment of OMBUDSMAN by the University	Yes
Digital Payment for all Financial Transactions as per MHRD Directives	Yes
Compliance of the National Academic Depository(NAD) as per MHRD Directives	Yes
Display Board within the premises as well as in the Website of the Institution Indicating the Feedback Facility of Students and Faculty available in the AICTE Web Portal	Yes
Implementing Food Safety and Standard Act,2006 in the Institution	Yes
Provision to watch MOOCS Courses through Swayam	Yes
Group Insurance for Employees	Yes
Insurance for Students	Yes
Online Grievance Rederssal Mechanism	Yes
Board Room	Yes
Office All inclusive	Yes
Department Offices/Cabin for Head of Dept	Yes
Central Store	Yes
Maintenance	Yes
Security	Yes
Housekeeping	Yes
Pantry for Staff/Faculty	Yes
Exam Control Office	Yes
Boys Common Room	Yes
Girls Common Room	Yes
Cafeteria	Yes
First aid cum Sick Room	Yes
Internet Bandwidth	Yes
Legal Application S/W	Yes
Internet Bandwidth-Applied Intake	Yes
Legal Application S/W-Applied Intake	Yes
Volumes	Yes
Laboratories-All	Yes
Seminar Hall	Yes

\*Please refer Deficiency Report for details

POPE JOHN PAUL II COLLEGE OF EDUCATION is hereby informed to submit the compliance of the deficiencies mentioned above to the Regional Office within a period of 6 months from the date of issuance of this letter failing which the council shall initiate strict action as defined in Approval Process Handbook 2018-19 during the subsequent Academic Year.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation: - Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will

be liable to take any action as defined under clause 9(4) of the said Regulation.

Prof. A.P Mittal  
Member Secretary, AICTE

Copy to:

1. The Regional Officer,  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
2. The Director Of Technical Education\*\*,  
Puducherry
3. The Registrar\*\*,  
Pondicherry University, Pondicherry
4. The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY,PUDUCHERRY,  
Puducherry,605010
5. The Secretary / Chairman,  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puducherry,605001
6. Guard File(AICTE)

Note: Validity of the Course details may be verified at <http://www.aicte-india.org/>

\*\* Individual Approval letter copy will not be communicated through Post/Email. However, consolidated list of Approved Institutions(bulk) will be shared through official Email Address to the concerned Authorities mentioned above.



# All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg Vasant Kunj, New Delhi-110067

PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

F.No. Southern/1-3325072648/2017/EOA

Date: 30-Mar-2017

To,

The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

**Sub: Extension of approval for the academic year 2017-18**

Ref: Application of the Institution for Extension of approval for the academic year 2017-18

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2016 notified by the Council vide notification number F.No.AB/AICTE/REG/2016 dated 30/11/2016 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-24234541	Application Id	1-3325072648
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001, PONDICHERRY, PUDUCHERRY, Puducherry, 605 001
Institute Type	Unaided - Private	Region	Southern

Opted for change from Women to Co-ed and Vice versa	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved and Vice versa	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable
Opted for Conversion from degree to diploma	No	Opted for Conversion from diploma to degree	No	Conversion (degree to diploma or vice-versa) Approved	Not Applicable

To conduct following courses with the intake indicated below for the academic year 2017-18

Application Id: 1-3325072648			Course	Full/Part Time	Affiliating Body	Intake Approved for 2016-17	Intake Approved for 2017-18	NRI Approval status	PIO / FN / OC/ Approval status	Foreign Collaboration/Twinning Program Approval status
Program	Shift	Level								
MCA	1st Shift	POST	MASTERS IN COMPUTER	FULL TIME	Pondicherry University,	30	30	NA	NA	NA

Application Number: 1-3325072648

Note: This is a Computer generated Report.No signature is required.

2017

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## All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg Vasant Kunj, New Delhi-110067  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

		GRA DUA TE	APPLICATIONS		Pondicherry					
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The above mentioned approval is subject to the condition that

POPE JOHN PAUL II COLLEGE OF EDUCATION

shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

**Note: Validity of the course details may be verified at [www.aicte-india.org](http://www.aicte-india.org)**

**Prof. A.P Mittal**  
**Member Secretary, AICTE**

Copy to:

- The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
- The Director Of Technical Education\*\*,**  
Puducherry
- The Registrar\*\*,**  
Pondicherry University, Pondicherry
- The Principal / Director,**  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY, PUDUCHERRY,  
Puducherry, 605010
- The Secretary / Chairman,**  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY, PUDUCHERRY,  
Puducherry, 605001

Application Number: 1-3325072648

Note: This is a Computer generated Report.No signature is required.  
2017

Printed By : ae20968561

Page 2 of 3  
Letter Printed On: 1 August



## **All India Council for Technical Education**

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg Vasant Kunj, New Delhi-110067

PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

### **6. Guard File(AICTE)**

**Note: \*\* - Approval letter copy will not be communicated through post/email. However, provision is made in the portal for downloading Approval letter through Authorized login credentials allotted to concerned DTE/Registrar.**

AICTE Web Portal - Microsoft Internet Explorer  
 Address: http://www.aicte-india.org/prmportal\_enu/start.swe?SWECmd=Login&SWEPL=1&SWETS=1496708973718  
 AICTE - Bringing e-Governance to ensure transparency

All New Applications View: > AICTE New Application:

Home | Change Password | PMKY | Student Details | Student Enrollment | New/Extension Approval

Siebel  
 EOA printing enabled successfully(SBL-EXL-00151)

Application- Header  
 Menu | Save

Current Application Number:*	1-3325072648	Current Status:	
Permanent Institute Id:	1-24234541	Sub Status:	
Academic Year:*	2017-2018	Application Opened on:	
Chapter:	Chapter 2	Application Submitted on:	
Approval Status of Application:	EoA Issued on date 30-Mar	Hard Copy Of AICTE Applicatic	

Student Details for UG and Diploma is currently disabled and will be enabled soon

javascript:void(0) | Internet | 9:33 AM



All India Council for Technical Education  
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

F.No. Southern/1-2811317538/2016/EOA

Date: 05-Apr-2016

To,

The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

**Sub: Extension of approval for the academic year 2016-17**

Ref: Application of the Institution for Extension of approval for the academic year 2016-17

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F-No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-2811317538
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Permanent Id	1-24234541
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010
Institute Type	Unaided - Private	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001,PONDICHERRY,PUDUCHERRY,Puducherry,605 031

Opted for change from Women to Co-ed and Vice versa	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved and Vice versa	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

To conduct following courses with the intake indicated below for the academic year 2016-17

Application Id: 1-2811317538			Course	Full/Part Time	Affiliating Body	Intake 2015-16	Intake Approved for 2016-17	NRI Approval status	PIO / FN / Gulf qigita Approval status	Foreign Collaborator/Twinning Program Approval status
Program	Shift	Level								
MCA	1st Shift	POST	MASTERS IN COMPUTER	FULL TIME	Pondicherry University,	30	30	NA	NA	NA

Application Number: 1-2811317538

Note: This is a Computer generated Report.No signature is required.

2017

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Page 1 of 2  
Letter Printed On:20 March



All India Council for Technical Education  
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

		GRADUATE	APPLICATIONS							
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The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

**Note: Validity of the course details may be verified at [www.aicte-india.org](http://www.aicte-india.org)**

**Dr. Avinash S Pant**  
Vice - Chairman, AICTE

Copy to:

- 1. The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
- 2. The Director Of Technical Education,**  
Puducherry
- 3. The Registrar,**  
Pondicherry University,
- 4. The Principal / Director,**  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY,PUDUCHERRY,  
Puducherry,605010
- 5. The Secretary / Chairman,**  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puducherry,605001
- 6. Guard File(AICTE)**



All India Council for Technical Education  
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

F.No. Southern/1-2452408035/2015/EOA

Date: 07-Apr-2015

To,  
The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puduchery-605001

**Sub: Extension of approval for the academic year 2015-16**

Ref: Application of the Institution for Extension of approval for the academic year 2015-16

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F-No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-2452408035
		Permanent Id	1-24234541
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001,PONDICHERRY,PUDUCHERRY,Puducherry,605 001
Institute Type	Unaided - Private		

Opted for change from Women to Co-ed	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

To conduct following courses with the intake indicated below for the academic year 2015-16

Application Number: 1-2452408035\*

Page 1 of 3

Note: This is a Computer generated Letter of Approval.No signature is required.

Letter Printed On:29 April 2015

Printed By : AE20968561



All India Council for Technical Education  
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

Application Id: 1-2452408035			Course	Full/Part Time	Affiliating Body	Intake 2014-15	Intake Approved for 15-16	NRI Approval status	PIO Approval status	Foreign Collaboration Approval status
Program	Shift	Level								
MCA	1st Shift	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	FULL TIME	Pondicherry University,	30	30	NA	NA	NA

Note: Validity of the course details may be verified at [www.aicte-india.org](http://www.aicte-india.org)>departments>approvals

The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

**Dr. Avinash S Pant**  
Actg Chairman, AICTE

Copy to:

- The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
- The Director Of Technical Education,**  
Puduchery

Application Number: 1-2452408035\*

Page 2 of 3

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PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

3. **The Registrar,**  
Pondichery University,
4. **The Principal / Director,**  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY,PUDUCHERRY,  
Puducherry,605010
5. **The Secretary / Chairman,**  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puducherry,605001
6. **Guard File(AICTE)**

Application Number: 1-2452408035\*

Page 3 of 3

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F.No. Southern/1-2016607885/2014/EOA

Date: 04-Jun-2014

To,  
The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

Sub: Extension of approval for the academic year 2014-15

Ref: Application of the Institution for Extension of approval for the academic year 2014-15

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F.No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-2016607885
		Permanent Id	1-24234541
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Society/Trust Address	ARCHBIE. JPS HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001, PONDICHERRY, PUDUCHERRY, Puducherry, 605 001
Institute Type	Private-Aided		

Opted for change from Women to Co-ed	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved	Not Applicable	Change of name Approved	Not Applicable	Change of site approved	Not Applicable

to conduct following courses with the intake indicated below for the academic year 2014-15

Application Number: 1-2016607885\*

Page 1 of 3

Note: This is a Computer generated Letter of Approval. No signature is required.

Letter Printed On: 1 August 2014

Printed By: AE20068561



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7th Floor, Chandratok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-india.org](http://www.aicte-india.org)

Application Id: 1-2016607885			Course	Affiliating Body	Intake 2013/14	Intake Approved for 13/15	NTI Approval Status	PIG Approval Status	Foreign Education Approval Status	
Program	Shift	Level		Full/Part Time						
MCA	1st Shift	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	FULL TIME	Pondicherry University,	30	30	NA	NA	N

Validity of the course details may be verified at [www.aicte-india.org/departments/approvals](http://www.aicte-india.org/departments/approvals)

The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal and subsequently upload and update the student/ faculty/ other data on portal as per the time schedule which will be intimated by AICTE.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case institution fails to take adequate steps to prevent ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

(Dr. Kuncheria P. Isaac)  
Member Secretary, AICTE

Copy to:

1. The Regional Officer,  
All India Council for Technical Education  
Shastri Bhawan 26, Maddows Road  
Chennai - 600 006, Tamil Nadu.
2. The Director Of Technical Education,  
Puduchery

Application Number: 1-2016607885\*

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Page 2 of 3

Letter Printed On:1 August 2014

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PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

3. The Registrar,  
Pondicherry University,
4. The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY, PUDUCHERRY,  
Puducherry, 605010
5. The Secretary / Chairman,  
LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY, PUDUCHERRY,  
Puducherry, 605001
6. Guard File(AICTE).

Application Number: 1-2016607885\*

Page 3 of 3

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Letter Printed On:1 August 2014

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7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

F.No. Southern/1-1484823242/2013/EOA

Date: 19-Mar-2013

To,  
The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

Sub: Extension of approval for the academic year 2013-14

Ref: Application of the Institution for Extension of approval for the academic year 2013-14

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F.No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-1484823242
		Permanent Id	1-24234541
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PUDUCHERRY, PUDUCHERRY, Puducherry, 605010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001,PONDICHERRY,PUDUCHERRY,Puducherry,605 001
Institute Type	Unaided - Private		

Opted for change from Women to Co-ed	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

to conduct following courses with the intake indicated below for the academic year 2013-14

Application Number: 1-1484823242\*

Page 1 of 3

Note: This is a Computer generated Extension of Approval Letter. No signature is required.

Letter Printed On:9 April 2013.

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7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

Application Id: 1-1484823242			Course	Full/Part Time	Affiliating Body	Intake 2012-13	Intake Approved for 13-14	NRI	PIO	Foreign Collaboration
Program	Shift	Level								
MCA	1st Shift	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	FULL TIME	Pondicherry University,	30	30	No	No	No

- Validity of the course details may be verified at [www.aicte-india.org](http://www.aicte-india.org)>departments>approvals

The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

(Dr. Kuncheria P. Isaac)

Member Secretary, AICTE

Copy to:

1. **The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
2. **The Director Of Technical Education,**  
Puducherry
3. **The Registrar,**  
Pondicherry University,
4. **The Principal / Director,**  
POPE JOHN PAUL II COLLEGE OF EDUCATION

Application Number: 1-1484823242\*

Page 2 of 3

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Letter Printed On: 9 April 2013.

Printed By : AE20968561

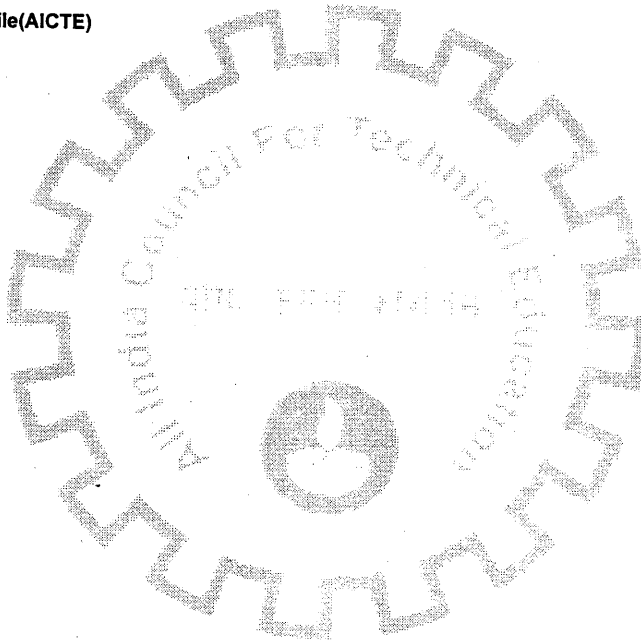


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PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PUDUCHERRY,PUDUCHERRY,  
Puducherry,605010

5. **The Secretary / Chairman,**  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puducherry,605001
6. **Guard File(AICTE)**





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(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-india.org

F.No. Southern/1-721457802/2012/EOA

Date: 10/05/2012

To,  
The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

Sub: Extension of approval for the academic year 2012-13

Ref: Application of the Institution for Extension of approval for the academic year 2012-13

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2010 notified by the Council vide notification number F.No.37-3/Legal/2010 dated 10/12/2010 and amendment vide notification number F.No.37-3/Legal/2011 dated 30/09/2011 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Southern	Application Id	1-721457802
		Permanent Id	1-24234541
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PONDICHERRY, PUDUCHERRY, Puducherry, 605010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001, PONDICHERRY, PUDUCHERRY, Puducherry, 605 001
Institute Type	Unaided - Private		

Opted for change from Women to Co-ed	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

to conduct following courses with the intake indicated below for the academic year 2012-13

Application Number: 1-721457802\*

Page 1 of 3

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Letter Printed On: 18 January 2013.

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7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

Application Id: 1-721457802			Course	Full Part Time	Affiliating Body	Intake 2011-12	Intake Approved for 12-13	NRI	PIO	Foreign Collaboration
Program	Shift	Level								
MCA	1st Shift	POST GRADUATE	MASTERS IN COMPUTER APPLICATIONS	FULL TIME	Pondicherry University, Pondicherry	30	30	No	No	No

The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

(Dr. K P Isaac)

Member Secretary, AICTE

Copy to:

1. The Regional Officer,  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
2. The Director Of Technical Education,  
Puducherry
3. The Registrar,  
Pondicherry University, Pondicherry
4. The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD,  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PONDICHERRY, PUDUCHERRY,

Application Number: 1-721457802\*

Page 2 of 3

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Letter Printed On: 18 January 2013.

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Puducherry,605010

5. The Secretary / Chairman,  
LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puducherry,605001

6. Guard File(AICTE)

Application Number: 1-721457802

Page 3 of 3

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PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

F.No. Southern/1-413118161/2011/EOA

Date: 01-09-2011

To,  
The Principal Secretary (Education),  
Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubert Revenue  
Puducherry-605001

Sub: Extension of approval for the academic year 2011-12.  
Ref: Application of the Institution for Extension of Approval for the Year 2011-12

Sir/Madam,

In terms of the Regulations notified by the Council vide F.No. 37-3/Legal/2011 dated 10/12/2010 and norms, standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the extension of approval of the Council to

Regional Office	Southern	Application Id	1-413118161
		Permanent Id	1-24234541
Name of the Institute	POPE JOHN PAUL II COLLEGE OF EDUCATION	Institute Address	VILLIANUR MAIN ROAD, REDDIARPALAYAM, PONDICHERRY - 605 010, PONDICHERRY, PUDUCHERRY, Puducherry, 605 010
Name of the Society/Trust	LE CONSEIL D'ADMINISTRATION DE L'ARCHIDIOCESE	Society/Trust Address	ARCHBISHOP'S HOUSE NO.206, CATHEDRAL STREET, PONDICHERRY, 605 001, PONDICHERRY, PUDUCHERRY, Puducherry, 605 001
Institute Type	Unaided - Private		

to conduct following courses with the intake indicated below for the academic year 2011-12

Application Id: 1-413118161			Course	Full/Part Time	Affiliating Body	Intake 2010-11	Intake Approved for 11-12	NRI	PIO	Foreign Collaboration
Program	Shift	Level								
MCA	1st Shift	POST GRAD UATE	MASTERS IN COMPUTER APPLICATIONS	FULL TIME	Pondicherry University, Pondicherry	30	30	No	No	No

The above mentioned approval is subject to the condition that POPE JOHN PAUL II COLLEGE OF EDUCATION shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Application Number : 1-413118161

Page 1 of 2

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Printed By : AE20968561

Date of printing: 24-04-2012



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7th Floor, Chandralok Building, Janpath, New Delhi- 110 001  
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 [www.aicte-India.org](http://www.aicte-India.org)

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

(Dr. K P Isaac)

Member Secretary, AICTE

Copy to:

1. **The Regional Officer,**  
All India Council for Technical Education  
Shastri Bhawan 26, Haddows Road  
Chennai - 600 006, Tamil Nadu
2. **The Director Of Technical Education,**  
Puduchery
3. **The Registrar,**  
Pondichery University, Pondicherry
4. **The Principal / Director,**  
POPE JOHN PAUL II COLLEGE OF EDUCATION  
VILLIANUR MAIN ROAD  
REDDIARPALAYAM, PONDICHERRY - 605 010,  
PONDICHERRY,PUDUCHERRY,  
Puduchery,605010
5. **The Secretary / Chairman,**  
LE CONSEIL D'ADMINISTRATION DE L'ARCHDIOCESE  
ARCHBISHOP'S HOUSE  
NO.206, CATHEDRAL STREET,  
PONDICHERRY,  
605 001,  
PONDICHERRY,PUDUCHERRY,  
Puduchery,605001
6. **Guard File(AICTE)**



**All India Council for Technical Education**  
(A Statutory Body Under Ministry of HRD, Govt of India)

7th floor, Chandralok Building, Janpath, New Delhi-110001  
Phone: (11) 23724151-57 FAX: (11) 23724183 www.aicte-india.org

No.: Southern Region/1-20968561/2010/EOA

August 23, 2010

To,  
Principal Secretary (Education), Govt. of Pondicherry, Chief Secretariat,  
Beach Road, Goubart Revenue Puducherry-605001

Sub.: Extension of approval for the academic year 2010-11.

Sir,

In terms of the Regulations notified by the Council vide F. No. 37-3/Legal/2010 and norms, standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the extension of approval of the Council to:

POPE JOHN PAUL II COLLEGE OF EDUCATION,, PONDICHERRY

for conduct of the following courses with the Intake Indicated below in the academic year 2010-11:

Sr. No.	Program	Level	Shift	Course	Intake 2009-10	Intake 2010-11
1	COMPUTER-APPLICATION	PG	First Shift	MCA (FULL TIME)	30	30

The above mentioned approval is subject to the condition that:  
POPE JOHN PAUL II COLLEGE OF EDUCATION,, PONDICHERRY

shall follow and adhere to the regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal and hard copy to Regional Office.

Anti Ragging - The approval is subject to the institutions strictly complying with all the provisions made under the Anti ragging regulation notified by council vide F.No. 37/Legal/AICTE/2008 dated 1-7-2008 failing which, it will be liable to any action defined under clause 9(4) of the regulation.

Yours faithfully,

  
Dr. S. G. Bhilrud  
Director

- Copy to:
1. The Regional Office, Southern Region, Pondicherry
  2. The Director of Technical Education, ~~Govt. of Pondicherry~~
  3. Guard File (AICTE)
  4. The Registrar, Affiliating University
  5. The Principal / Director,  
POPE JOHN PAUL II COLLEGE OF EDUCATION,, PONDICHERRY



Application Number	State	NAME	Programme	Level	Shift	Courses	Intake 2009-10	Applied Intake 2010-11	Approved Intake 2010-11
1-6602191	Puducherry	RVS College of Engg. & Tech., Karaikal	Engg. & Tech.	Under Graduate	First Shift	Computer Science & Engg.	60	60	60
1-6602191	Puducherry	RVS College of Engg. & Tech., Karaikal	Engg. & Tech.	Under Graduate	First Shift	Electrical & Electronics Engg.	60	120	120
1-6602191	Puducherry	RVS College of Engg. & Tech., Karaikal	Engg. & Tech.	Under Graduate	First Shift	Electronics & Commn. Engg.	60	120	60
1-6602191	Puducherry	RVS College of Engg. & Tech., Karaikal	Engg. & Tech.	Under Graduate	First Shift	Information Tech.	60	60	60
1-6602191	Puducherry	RVS College of Engg. & Tech., Karaikal	Engg. & Tech.	Under Graduate	First Shift	Mechanical Engg.	0	60	60
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Under Graduate	First Shift	Computer Science & Engg.	120	120	120
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Under Graduate	First Shift	Electrical & Electronics Engg.	90	90	90
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Under Graduate	First Shift	Electronics & Commn. Engg.	120	120	120
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Under Graduate	First Shift	Information Tech.	45	45	45
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Under Graduate	First Shift	Mechanical Engg.	60	60	60
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Post Graduate	First Shift	MBA [Full Time]	60	60	60
1-4215395	Puducherry	Regency Institute of Technology,	Engg. & Tech.	Post Graduate	First Shift	MCA [Full Time]	60	60	60
	Pondicherry	Bharathiar College of Engg. & Tech.,	Computer Application	Post Graduate	First Shift	MCA (Full Time)	60		60
cr August	Pondicherry	Pondicherry Engg. College,	Computer Application	Post Graduate	First Shift	MCA (Full Time)	30	30	30
	Pondicherry	Pondicherry University,	Computer Application	Post Graduate	First Shift	MCA (Full Time)	60		60
1-20968561	Pondicherry	Pope John Paul II College of Education,	Computer Application	Post Graduate	First Shift	MCA (Full Time)	30	30	30

20/10  
CORRESPONDENT

Pope John Paul II College of Education  
Dodd...



**अखिल भारतीय तकनीकी शिक्षा परिषद्**  
**ALL INDIA COUNCIL FOR TECHNICAL EDUCATION**  
(भारत सरकार का एक सांविधिक निकाएँ) (A STATUTORY BODY OF THE GOVT. OF INDIA)

F. No.: PON-01/MCP-CS/97

Date: 30.05.2008

To

**The Secretary**  
Dept. of Education,  
Govt. of Puducherry,  
Puducherry - 605 001

**Sub: Extension of approval to Pope John Paul II College Of Education, Reddiarapalayam, Pondicherry - 605 010 beyond the academic year 2007-08.**

Sir,

As per the Regulations notified by the All India Council for Technical Education vide F.No. 37-3/1egal/ 2006 dated 14<sup>th</sup> Sept 2006 and Norms, Standards, Procedures and Conditions prescribed by it from time to time and based on the recommendations of Appraisal Committee / Expert Committee, I am directed to convey the extension of approval of the Council to **John Paul II Collage Of Education, Reddiarapalayam, Pondicherry - 605 010** for conduct of the following courses with the intake indicated below:

Name of the Course(s)	Existing Intake	Revised Intake	Period of approval
MCA	30	30	2008-09 *
Total	30	30	

- \* *The Compliance Report along with requisite processing fee is required to be submitted every year by 31st August, Irrespective of the period of approval.*

The above approval is subject to rectification of the following observations / deficiencies / specific conditions by 31<sup>st</sup> August 2008.

**Faculty:**

- > Sr. level faculty in cadre ratio as per AICTE norms should be appointed.

**Others:**

- > Library Facility in terms of books are inadequate as per AICTE norms.  
> Previously communicated deficiencies partially complied.

**Note: The mandatory disclosure in prescribed format if not hosted on the website should be hosted by 31<sup>st</sup> May, 2008, failing which action would be initiated as per the rules and regulations of the AICTE including No Admission / Withdrawal of approval.**

Contd. 2/-

7<sup>वीं</sup> तल, चन्द्रलोक भवन, जनपथ नई दिल्ली-110001  
7th Floor, Chander Lok Building, Janpath, New Delhi-110001

Phone: 011-23704451, 23704452

**Note: The mandatory disclosure in prescribed format if not hosted on the website should be hosted by 31<sup>st</sup> May, 2008, failing which action would be initiated as per the rules and regulations of the AICTE including No Admission / Withdrawal of approval.**

The institution is required to submit two copies of the Compliance Report, indicating the rectification of deficiencies along with mandatory disclosure and details of faculty recruited for each course in the prescribed format (available at AICTE Website [www.aicteernet.in](http://www.aicteernet.in)) to the concerned Regional Office latest by 31<sup>st</sup> August 2008 for consideration of approval beyond the session 2008-09. **It may be noted that all the institutions are required to submit the Compliance Report along with requisite processing fee by 31<sup>st</sup> August, every year, irrespective of the period of approval.**

The Compliance Report must be accompanied with a processing fee of Rs. 40,000/- in the form of demand draft in the favour of "The Member Secretary, AICTE", payable at New Delhi. In the absence of processing fee the Compliance Report will not be entertained. Following the Compliance report, the Council would verify the status in respect of rectification of deficiencies through surprise random inspection without any prior notice.

The above approval, if granted after rectification of deficiencies would be subject to the fulfillment of the following general conditions:

1. That the management shall provide adequate funds for development of land and for providing related infrastructural, instructional and other facilities as per norms and standards laid down by the Council from time to time and for meeting recurring expenditure.
2.
  - (a) That the admission shall be made only after adequate infrastructure and all other facilities are provided as per norms and guidelines of the AICTE.
  - (b) That the admissions shall be made in accordance with the regulations notified by the Council from time to time.
  - (c) That the curriculum of the course, the procedure for evaluation/ assessment of students shall be in accordance with the norms prescribed by the AICTE.
  - (d) That the Institution shall not allow closure of the Institution or discontinuation of the course(s) or start any new course(s) or alter intake capacity of seats without the prior approval of the Council.
  - (e) That no excess admission shall be made by the Institution over and above the approved intake under any circumstances. In case any excess admission is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution.
  - (f) That the Institutions shall not have any collaborative arrangements with any Indian and/ or Foreign Universities for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution.
  - (g) That the Institution shall not conduct any course(s) in the field of technical education in the same premises/ campus and / or in the name of the Institution without prior permission/ approval of AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution.
  - (h) The institution shall not conduct any non-technical course(s) in the same premises/ campus under any circumstances. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution.
3. That the institution shall operate only from the approved location, and that the institution shall not open any off campus study centers/ extension centers directly or in collaboration with any other institution/ university/ organization for the purpose of imparting technical education without obtaining prior approval from the AICTE.

Contd. 3/-

- 4 That the tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students/ guardians of students in any form.
- 5 That the accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or any body or persons authorized by it.
- 6 That the Director/ Principal and the teaching and other staff shall be selected according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are as per the norms prescribed by the Council from time to time.
- 7
  - (a) That the institution shall furnish requisite returns and reports as desired by AICTE in order to ensure proper maintenance of administrative and academic standards.
  - (b) That the technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses/ programmes being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education on cost basis. The mandatory disclosure information shall be put on the Institution Website. The information shall be revised every year with updated information about all aspects of the Institution.
  - (c) That it shall be mandatory for the technical institution to maintain a Website providing the prescribed information. The Website information must be continuously updated as and when changes take place.
  - (d) That a compliance report in the prescribed format along with mandatory disclosures on fulfillment of the above conditions, shall be submitted each year by the Institution within the time limit prescribed by the Council from time to time i.e. 31<sup>st</sup> August 2007 for the current year.
  - (e) That if Technical Institution fails to disclose the information or suppress and/ or misrepresent the information, appropriate action could be initiated including withdrawal of AICTE approval.
- 8 That all the laboratories, workshops etc. shall be equipped as per the syllabi of the concerned affiliated University and shall be in operational condition before making admissions.
- 9 That a library shall be established with adequate number of titles, books, journals (both Indian & Foreign) etc as per AICTE norms.
- 10 That a computer center with adequate number of terminals, Printers etc. shall be established as per AICTE norms.
- 11 AICTE may carry out random inspections round the year for verifying the status of the Institutions to ensure maintenance of norms and standards.
- 12 That the AICTE may also conduct inspections with or without notifying the dates to verify specific complaints of mis-representation, violation of norms and standards, mal-practices etc.
- 13 That the Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid from the Central or State Government.
- 14 That in the event of a student / candidate withdrawing before the starting of the course, the wait listed candidates should be given admission against the vacant seat. The entire fee collected from the student, after a deduction of the processing fee of not more than Rs. 1000/- (Rupees One thousand only) shall be refunded and returned by the Institution / University to the student / candidate withdrawing from the programme. It would not be permissible for Institutions and Universities to retain the School / Institution Leaving Certificates in original to force retention of admitted students (See Public Notice/DPG/03(01)/2008).

Contd. 4/-



(4)

- 15 That the institution shall take appropriate measures for prevention of ragging in any form, in the light of directions of Supreme Court of India in Writ Petition No. (C) 656/1998. In case of failure to prevent the instances of ragging by the institutions, the Council shall take the appropriate action withdrawal of approval.
- 16 That the Management shall strictly follow further conditions as may be specified by the Council through various notifications in media including AICTE official website ([www.aicte.ernet.in](http://www.aicte.ernet.in)), from time to time.
- 17 In the event of non-compliance by the John Paul II College Of Education, Reddiarapalayam, Pondicherry - 605 010 with regard to guidelines, norms and conditions prescribed from time to time the Council shall be free to take measures for withdrawal of its approval or recognition, without consideration of any related issues and that all liabilities arising out of such withdrawal would solely be that of John Paul II College Of Education, Reddiarapalayam, Pondicherry - 605 010.

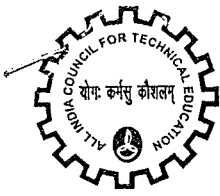
Yours faithfully,



(Prof. Harish C. Rai)  
Advisor- (M&T)

Copy to:

- 1 **The Principal**  
John Paul II College Of Education,  
Reddiarapalayam,  
Pondicherry - 605 010
- 2 **The Regional Officer**  
AICTE Southern Regional Office  
26, Haddows Road, Shastri Bhawan  
Chennai - 600 006
- 3 **The Director of Collegiate & Technical Education**  
Govt. of Puducherry,  
PIPDATE Campus, Lawspet  
Puducherry - 605 008
- 4 **The Registrar,**  
(He is requested to complete the process of affiliation for facilitating admissions).
- 5 **Guard File (M&T)**



अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(भारत सरकार का एक सांविधिक निकाय) (A STATUTORY BODY OF THE GOVT. OF INDIA)

F. No.PON-01/MCP-CS/97

Date: 10/05/2007

To,

The Secretary (Education Deptt.)  
Dept. of Education  
Govt. of Puducherry,  
Puducherry - 605 001

Sub: Extension of approval to Pope John Paul II College of Education,, Reddiarapalayam, Pondicherry - 605 010 for the academic year 2007-2008.

Sir,

As per the Regulations notified by the Council vide F.No. 37-3/Legal/2004 dated 14<sup>th</sup> Sept 2006 and Norms, Standards, Procedures and Conditions prescribed by the Council from time to time and based on the recommendations of Appraisal Committee / Expert Committee, I am directed to convey the extension of approval of the Council to **Pope John Paul II College of Education,, Reddiarapalayam, Pondicherry - 605 010** for conduct of the following courses with the intake indicated below:

Name of the Course(s)	Existing Intake	Revised Intake	Period of approval
1. MCA (Full Time)	30	30	2007-2008

The above approval is subject to rectification of the following observations / deficiencies / specific conditions by 31<sup>st</sup> August 2007.

**Faculty:**

- Principal / Director of the institution is not qualified (Ph.D. not in relevant discipline) as per AICTE norms. Eligible Principal / Director should be appointed by 30th June, 2007.
- Cadre Ratio not maintained as per AICTE norms.

**Library:**

- Books short by 76% (required 8000 & available books are 1939).
- Journal (National) short by 67% (required 06 & available 02).

**Others:**

- Previously communicated deficiencies partially complied.

इंदिरा गांधी खेल परिसर, इन्द्रप्रस्थ एस्टेट, नई दिल्ली - 110002  
Indira Gandhi Sports Complex, I. P. Estate, New Delhi-110 002  
दूरभाष / Phone : 23392506, 63-65-68, 71, 73-75 फैक्स / Fax : 011-26092554  
वेबसाइट / Website : www.aicte.ernet.in

*ndeev*

*B8 B6 D45*

*23724131-133*

*011-23724131, 52, 53, 54, 55, 56,*

*57*

**Note: The mandatory disclosure in prescribed format if not hosted on the website should be hosted by 31<sup>st</sup> May, 2007, failing which action would be initiated as per the rules and regulations of the AICTE including No Admission / Withdrawal of approval.**

The institution is required to submit two copies of the Compliance Report, indicating the rectification of deficiencies along with mandatory disclosure and details of faculty recruited for each course in the prescribed format (available at AICTE Website [www.aicte.ernet.in](http://www.aicte.ernet.in)) to the concerned Regional Office latest by 31<sup>st</sup> August 2007 for consideration of approval beyond the session 2007-2008.

The Compliance Report must be accompanied with a processing fee of Rs. 40,000/- in the form of demand draft in the favour of Member Secretary, AICTE, payable at New Delhi. In the absence of processing fee the Compliance Report will not be entertained. Following the Compliance report, the Council would verify the status in respect of rectification of deficiencies through surprise random inspection without any prior notice.

The approval if granted after rectification of deficiencies would be subject to the fulfillment of the following general conditions:

- 1 That the management shall provide adequate funds for development of land and for providing related infrastructural, instructional and other facilities as per norms and standards laid down by the Council from time to time and for meeting recurring expenditure.
2. (a) That the admission shall be made only after adequate infrastructure and all other facilities are provided as per norms and guidelines of the AICTE.
- (b) That the admissions shall be made in accordance with the regulations notified by the Council from time to time.
- (c) That the curriculum of the course, the procedure for evaluation/ assessment of students shall be in accordance with the norms prescribed by the AICTE.
- (d) That the Institution shall not allow closure of the Institution or discontinuation of the course(s) or start any new course(s) or alter intake capacity of seats without the prior approval of the Council.
- (e) **That no excess admission shall be made by the Institution over and above the approved intake under any circumstances. In case any excess admission is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (f) **That the institutions shall not have any collaborative arrangements with any Indian and/ or Foreign Universities for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (g) **That the Institution shall not conduct any course(s) in the field of technical education in the same premises/ campus and / or in the name of the Institution without prior permission/ approval of AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (h) **The institution shall not conduct any non-technical course(s) in the same premises/ campus under any circumstances. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**

(3)

- 3 That the institution shall operate only from the approved location, and that the institution shall not open any off campus study centers/ extension centers directly or in collaboration with any other institution/ university/ organization for the purpose of imparting technical education without obtaining prior approval from the AICTE.
- 4 That the tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students/ guardians of students in any form.
- 5 That the accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or any body or persons authorized by it.
- 6 That the Director/ Principal and the teaching and other staff shall be selected according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are as per the norms prescribed by the Council from time to time.
7. (a) That the institution shall furnish requisite returns and reports as desired by AICTE in order to ensure proper maintenance of administrative and academic standards.  
(b) That the technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses/ programmes being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education on cost basis. The mandatory disclosure information shall be put on the Institution Website. The information shall be revised every year with updated information about all aspects of the institution.  
(c) That it shall be mandatory for the technical institution to maintain a Website providing the prescribed information. The Website information must be continuously updated as and when changes take place.  
(d) That a compliance report in the prescribed format along with mandatory disclosures on fulfillment of the above conditions, shall be submitted each year by the Institution within the time limit prescribed by the Council from time to time **i.e. 31<sup>st</sup> August 2007 for the current year.**  
(e) That if Technical Institution fails to disclose the information or suppress and/ or misrepresent the information, appropriate action could be initiated including withdrawal of AICTE approval.
- 8 That all the laboratories, workshops etc. shall be equipped as per the syllabi of the concerned affiliated University and shall be in operational condition before making admissions.
- 9 That a library shall be established with adequate number of titles, books, journals (both Indian & Foreign) etc as per AICTE norms.
- 10 That a computer center with adequate number of terminals, Printers etc. shall be established as per AICTE norms.
- 11 AICTE may carry out random inspections round the year for verifying the status of the Institutions to ensure maintenance of norms and standards.
- 12 That the AICTE may also conduct inspections with or without notifying the dates to verify specific complaints of mis-representation, violation of norms and standards, mal-practices etc.
- 13 That the Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid form the Central or State Government.
- 14 That the Management shall strictly follow further conditions as may be specified by the Council from time to time.

(4)

- 15 In the event of non-compliance by the **Pope John Paul II College of Education,, Reddiarapalayam, Pondicherry - 605 010** with regard to guidelines, norms and conditions prescribed from time to time the Council shall be free to take measures for withdrawal of its approval or recognition, without consideration of any related issues and that all liabilities arising out of such withdrawal would solely be that of **Pope John Paul II College of Education,, Reddiarapalayam, Pondicherry - 605 010**.

Yours faithfully,

  
(Prof. K. Madhu Murthy)  
Advisor- (M&T)

**Copy to:**

1. **The Principal,  
Pope John Paul II College of Education,,  
Reddiarapalayam, Pondicherry - 605 010**
2. **The Regional Officer, AICTE Southern Regional Office, 26, Haddows Road, Shastri Bhawan,  
Chennai - 600 006**
3. **The Director of Collegiate & Technical Education,  
Govt. of Puducherry,  
PIPMATE Campus, Lawpet  
Puducherry - 605 008**
4. **The Registrar, Concerned Affiliating University  
(He is requested to complete the process of affiliation for facilitating admissions).**
5. **Guard File (M&T).**



अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(भारत सरकार का एक सांविधिक निकाय) (A STATUTORY BODY OF THE GOVT. OF INDIA)

Date: 20/07/2006

To,

The Secretary to Government (Education Deptt.)  
Govt. of Pondicherry, Pondicherry – 605 001

**Sub: Extension of approval to the Pope John Paul – II, College of Education, Reddiarpalayam, Pondicherry for the academic year 2006-07.**

Sir,

As per the Regulations notified by the Council vide F.No. 37-3/Legal/2004 dated 28<sup>th</sup> November 2005 and norms, standards, procedures and conditions prescribed by the Council from time to time and based on the recommendations of Appraisal Committee / Expert Committee, I am directed to convey the extension of approval of the Council to **Pope John Paul – II, College of Education, Reddiarpalayam, Pondicherry** for conduct of the following courses with the intake indicated below:

Name of the Course(s)	Existing Intake	Revised Intake	Period of approval
MCA (FT)	30	30	2006-2007

The above approval is subject to rectification of the following observations / deficiencies / specific conditions by 31<sup>st</sup> August 2006.

➤ **Faculty:**

- ❖ Cadre ratio is not as per AICTE norms.
- ❖ Principal / Director of the institution is not qualified (in relative discipline) as per AICTE norms.

➤ **Others:**

- ❖ The deficiencies communicated in the last approval letter are not fully complied with.

**Note:** *The mandatory disclosure in prescribed format if not hosted on the website should be hosted by 31<sup>st</sup> May, 2006, failing which action would be initiated as per the rules and regulations of the AICTE including No Admission / Withdrawal of approval.*

The institution is required to submit two copies of the Compliance Report, indicating the rectification of deficiencies along with mandatory disclosure and details of faculty recruited for each course in the prescribed format (available at AICTE Website [www.aicte.ernet.in](http://www.aicte.ernet.in)) to the concerned Regional Office latest by 31<sup>st</sup> August 2006 for consideration of approval beyond the session 2006-07.

The Compliance Report must be accompanied with a processing fee of Rs. 40,000/- in the form of demand draft in the favour of Member Secretary, AICTE, payable at New Delhi. In the absence of processing fee the Compliance Report will not be entertained. Following the Compliance report, the Council would verify the status in respect of rectification of deficiencies through surprise random inspection without any prior notice.

The above approval if granted after rectification of deficiencies would be subject to the fulfillment of the following general conditions:


- 1 That the management shall provide adequate funds for development of land and for providing related infrastructural, instructional and other facilities as per norms and standards laid down by the Council from time to time and for meeting recurring expenditure.
2. (a) That the admission shall be made only after adequate infrastructure and all other facilities are provided as per norms and guidelines of the AICTE.
- (b) That the admissions shall be made in accordance with the regulations notified by the Council from time to time.
- (c) That the curriculum of the course, the procedure for evaluation/ assessment of students shall be in accordance with the norms prescribed by the AICTE.
- (d) That the Institution shall not allow closure of the Institution or discontinuation of the course(s) or start any new course(s) or alter intake capacity of seats without the prior approval of the Council.
- (e) **That no excess admission shall be made by the Institution over and above the approved intake under any circumstances. In case any excess admission is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (k) **That the institutions shall not have any collaborative arrangements with any Indian and/ or Foreign Universities for conduct of technical courses other than those approved by AICTE without obtaining prior approval from AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (g) **That the Institution shall not conduct any course(s) in the field of technical education in the same premises/ campus and / or in the name of the Institution without prior permission/ approval of AICTE. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- (h) **The institution shall not conduct any non-technical course(s) in the same premises/ campus under any circumstances. In case any violation is reported to the Council, appropriate penal action including withdrawal of approval shall be initiated against the Institution**
- 3 That the institution shall operate only from the approved location, and that the institution shall not open any off campus study centers/ extension centers directly or in collaboration with any other institution/ university/ organization for the purpose of imparting technical education without obtaining prior approval from the AICTE.
- 4 That the tuition and other fees shall be charged as prescribed by the Competent Authority within the overall criteria prescribed by the Council from time to time. No capitation fee shall be charged from the students/ guardians of students in any form.
- 5 That the accounts of the Institution shall be audited annually by a certified Chartered Accountant and shall be open for inspection by the Council or any body or persons authorized by it.

- 6 That the Director/ Principal and the teaching and other staff shall be selected according to procedures, qualifications and experience prescribed by the Council from time to time and pay scales are as per the norms prescribed by the Council from time to time.
- 7 (a) That the institution shall furnish requisite returns and reports as desired by AICTE in order to ensure proper maintenance of administrative and academic standards.
- (b) That the technical institution shall publish an information booklet before commencement of the academic year giving details regarding the institution and courses/ programmes being conducted and details of infrastructural facilities including faculty etc. in the form of mandatory disclosure. The information booklet may be made available to the stakeholders of the technical education on cost basis. The mandatory disclosure information shall be put on the Institution Website. The information shall be revised every year with updated information about all aspects of the institution.
- (c) That it shall be mandatory for the technical institution to maintain a Website providing the prescribed information. The Website information must be continuously updated as and when changes take place.
- (d) That a compliance report in the prescribed format along with mandatory disclosures on fulfillment of the above conditions, shall be submitted each year by the Institution within the time limit prescribed by the Council from time to time i.e. **31<sup>st</sup> August 2006 for the current year.**
- (e) That if Technical Institution fails to disclose the information or suppress and/ or misrepresent the information, appropriate action could be initiated including withdrawal of AICTE approval.
- 8 That all the laboratories, workshops etc. shall be equipped as per the syllabi of the concerned affiliated University and shall be in operational condition before making admissions.
- 9 That a library shall be established with adequate number of titles, books, journals (both Indian & Foreign) etc as per AICTE norms.
- 10 That a computer center with adequate number of terminals, Printers etc. shall be established as per AICTE norms.
- 11 AICTE may carry out random inspections round the year for verifying the status of the Institutions to ensure maintenance of norms and standards.
- 12 That the AICTE may also conduct inspections with or without notifying the dates to verify specific complaints of mis-representation, violation of norms and standards, mal-practices etc.
- 13 That the Institution by virtue of the approval given by Council shall not automatically become claimant to any grant-in-aid from the Central or State Government.
- 14 That the Management shall strictly follow further conditions as may be specified by the Council from time to time.



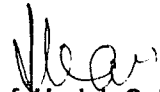
15 In the event of non-compliance by the **Pope John Paul – II, College of Education , Reddiarpalayam, Pondicherry** with regard to guidelines, norms and conditions prescribed from time to time the Council shall be free to take measures for withdrawal of its approval or recognition, without consideration of any related issues and that all liabilities arising out of such withdrawal would solely be that of **Pope John Paul – II, College of Education , Reddiarpalayam, Pondicherry.**

Yours faithfully,

  
(Prof. Harish C. Rai)  
Advisor- UG/PG (M&T)

**Copy to:**

1. ✓ The Principal,  
**Pope John Paul – II, College of Education ,  
Reddiarpalayam, Pondicherry**
2. The Regional Officer, AICTE Southern Regional Office, 26, Haddows Road, Shastri Bhawan, Chennai - 600 006
3. The Director of Technical Education, Govt. of Pondicherry, Pondicherry – 605 001
4. The Registrar, Concerned University  
(He is requested to complete the process of affiliation for facilitating admissions).
5. Guard File (UG/PG).

  
(Prof. Harish C. Rai)  
Advisor- UG/PG (M&T)





अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(एन ए आर टी ए के अधिनियम 1987) (A STATUTORY BODY OF THE GOVT. OF INDIA)

F.No. PON-01/ET-MCA/2001  
June 24, 2005

To  
Secretary to Government (Education)  
Govt. of Pondicherry,  
Pondicherry – 605 001

**Sub: Extension of approval to Pope John Paul II College of Education Reddiarpalayam, Pondicherry- 605 010 for the year 2005-06-reg.**

Sir/ Madam,

As you are aware, **All India Council for Technical Education** has been mandated under the AICTE Act, 1987 to ensure **maintenance of norms and standards** with regard to technical education in the country. In exercise of this mandate, the Council insists on fulfillment of the minimum requirements prescribed for imparting technical education by the institution so that **quality of courses** is not compromised and stakeholders are satisfied. The Council also undertakes an **annual Inspection** of the institutions and conveys deficiencies to them for **rectification**.

It has been observed however that notwithstanding the Council's **repeated advice** to comply with minimum norms and standards, many institutions continue to be **complacent** about taking steps to remedy the deficiencies.

Such institutions suffer from **critical deficiencies** of faculty in proper cadre ratio, qualification, experience and other requirements. Feed back of students with regard to quality of education imparted by such institutions has evoked grave concern. The Expert Committees, following **holistic appraisal** during inspections, have also pointed out severe shortcomings

The institution has been found to be suffering from several deficiencies, which are listed in **Annexure-A** for your perusal. Shortage of faculty is of gravest concern.

The deficiencies in respect of faculty (including proper cadre ratio & qualification etc.) could have rendered your institution liable for punitive action including being placed in no admission/ reduced intake category. However the Council has decided to take a lenient view and give you yet another **last opportunity** to rectify the deficiencies particularly with regard to faculty shortage, proper cadre ratio & requisite qualification. Course-wise approved intake in respect of **Pope John Paul II College of Education, Reddiarpalayam, Pondicherry- 605 010** for the year 2005-06 is as under: -

COURSE (S)	APPROVED INTAKE	APPROVED INTAKE
	2004-05	2005-06
MCA (FT) (Standalone)	30	30

**Note: - Additional intake/new courses/PIO quota not granted on account of deficiencies in respect of running existing courses/intake.**

The above approval is subject to your rectification of deficiencies latest by August end, 2005. A compliance report indicating rectification of deficiencies and details of faculty recruited for each course must be received by the Council, with a copy to concerned Regional Officer latest by **31<sup>st</sup> August, 2005** to entitle your institution for **extension of approval** for the year **2006-07**.

The compliance report must be accompanied with a **visiting/processing fee** as prescribed by the Council in the form of demand draft in favour of **Member Secretary, AICTE payable at New Delhi**. In the absence of the processing/visiting fee, the compliance report may not be entertained.

Following the compliance report, the Council would verify the status in respect of rectification of deficiencies through physical inspection without any prior intimation. The institution should therefore be prepared for random inspection without any prior notice. Extension of approval for the year 2006-07 shall be dependent on the compliance report and the outcome of the surprise inspection.

**Enclosure:- Annexure-A**

**Note:- Details available on website [www.aicte.ernet.in](http://www.aicte.ernet.in)**

Yours faithfully



(Dr. P. Venkateswara Rao)  
Adviser (UG/ PG)

Copy to :

1. The Principal,  
**Pope John Paul II College of Education**  
**Reddiarpalayam,**  
**Pondicherry- 605 010**
2. The Regional Officer, AICTE Southern Regional Office, 26, Haddows Road, Shastri Bhawan, Chennai - 600 006
3. Director of Technical Education, Govt. of Pondicherry, Pondicherry – 605 001.
4. The Registrar, PONDICHERRY UNIVERSITY, PONDICHERRY  
(He is requested to complete the process of affiliation for facilitating admissions).
5. Guard File.

**Annexure – ‘A’**

<b>Name &amp; address of the institution</b>	<b>Programme</b>
<b>File No. : PON-01/ET-MCA/2001</b> <b>POPE JOHN PAUL II COLLEGE OF EDUCATION</b> REDDIARPALAYAM, PONDICHERRY- 605 010  PRIVATE NO-GRANT	Degree Engineering & Technology

**Faculty**

- Principal/Director is not eligible as per AICTE norms; Principal, experienced & qualified as per AICTE norms is to be appointed.
- Faculty is the soul of an institution and in the absence thereof an institution cannot impart quality education. Head of Dept is a non Ph.D. person in Assistant Professor Scale 12,000/- with PGDCA qualification. This needs to be rectified immediately.
- All faculty are to be recruited as per AICTE norms.
- AICTE pay scales along with prescribed DA, are to be implemented for all the faculty members.

**Library**

- Against the requirement of 12 journals, there are 4 journals available thereby causing a shortfall of 8 (67%).

**Others**

- Financial position of the Institute to be improved.



अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(भारत सरकार का एक सांविधिक संस्थान) (A STATUTORY BODY OF THE GOVERNMENT OF INDIA)

F.No.: PN-01/MCP-CS/97

Date: 7 th May, 2003

To

The Secretary to Government (Education),  
Govt. of Pondicherry,  
Pondicherry - 605 001

Sub: Extension of AICTE approval to POPE JOHN PAUL II COLLEGE OF EDUCATION,, REDDIARPALAYM,, PONDICHERRY - 605 010 .

Sir/Madam,

The Application/ Proposal and/ or the Compliance Report received from POPE JOHN PAUL II COLLEGE OF EDUCATION,,REDDIARPALAYM,,PONDICHERRY - 605 010,, has been processed as per laid down procedure, guidelines, policy and/or norms & standards of AICTE, mentioned in AICTE Regulations and/ or "AICTE Hand Book for Approval Process".

I am directed to state that the All India council for Technical Education (AICTE) is pleased to accord approval for extension / variation in intake to POPE JOHN PAUL II COLLEGE OF EDUCATION,, REDDIARPALAYM,, PONDICHERRY - 605 010, for the course with annual intake and period of approval as given below :-

COURSE	EXISTING ANNUAL INTAKE	REVISED APPROVED INTAKE	PERIOD OF APPROVAL
MCA (FT)	30.	30	2003-2005

*[Handwritten Signature]*

Cont...2

- 2 -

The approval accorded above is subject to fulfillment of the following Conditions:

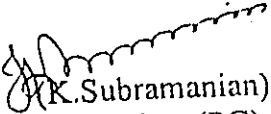
1. All full time faculty members as per AICTE Norms must be recruited before making admissions.
2. The Institution must have Affiliation to a University for the above courses before making admissions. In the absence of such Affiliation, this Letter of approval shall be treated as Withdrawn. (Order of the High Court of Madras in W.P. No. 33256 of 2002 and other Batch of Petitions).
3. All the required Laboratories/ Workshops/ Machineries/ Equipment, as per approved syllabi of the affiliating University, must be operational before making admissions.
4. The approved course(s) shall commence as per the academic calendar of the Affiliating University.
5. If this Letter of approval is received by you after the closing date of State / National Level Central Counseling for Admissions in the concerned State / Union Territory, this Letter of approval will not be valid for making any admission during the above specified academic year, and shall be treated as withdrawn.
6. No excess admission shall be made by the Institution during any academic year.
7. The approval is valid only for the academic year 2003-2004. If no further extension of AICTE approval is received beyond the academic year 2003-2004, this Approval Letter will not be valid for making any admission for the subsequent years.
8. Name of the Institution. Name of the Society/Trust, are not allowed to be changed without prior approval of AICTE. The name and title of the institution should be such that "the Emblems and Names (Prevention of Improper use) Act 12 (1950)" of Government of India, is not violated in any manner.  
  
The use of word "Indian" and /or "National" and/or "All India" and/or "All India Council" and/or Commission" in any part of the name of a Technical Institution and/ or any name whose abbreviated form leads to "IIM"/ "IIT"/"IISC"/"IIIT"/ "AICTE"/ "UGC" shall not be permitted. These restrictions will not be applicable for those institutions which are established with the name approved by the Govt. of India.
9. In exercise of power conferred under 10(p) of the AICTE Act, AICTE, may inspect the Institution any time it may deem fit to verify the progress, compliance of the conditions.
10. Any other conditions, as may be specified by AICTE from time to time.

It may please be noted that consequent to judgement of Hon'ble Supreme Court delivered on 31/10/2002 in TMA Pai Case, the AICTE had issued interim policy regulations, which has been notified in the Gazette of India on 20/03/2003. All the provisions contained in the interim policy regulations shall be applicable for the academic year 2003-2004 in respect of all the AICTE approved institutions.

*Signature*

In the event of infringement/ contravention or non-compliance of the above Conditions and/or the provision of AICTE Act & Regulations/ Guidelines/ Norms & Standards as prescribed by AICTE, further actions leading to 'Reduced Intake' or "No Admission or Withdrawal of Approval, may be taken by AICTE and the liability arising out of such actions will be solely that of the Management of the Institution.

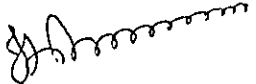
Your faithfully,

  
(K. Subramanian)  
Adviser (PG)

Encl: (1) Improvements to be made

Copy to:

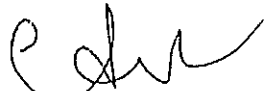
- Regional Officer, Southern Regional office, AICTE, 26, Haddows Road, Chennai - 600 006
- The Registrar, PONDICHERRY UNIVERSITY
- The Principal  
POPE JOHN PAUL II COLLEGE OF EDUCATION,,  
REDDIARPALAYM,,  
PONDICHERRY - 605 010,
- Director of Tech. Education, Govt. of Pondicherry, Pondicherry - 605 001.
- Guard File Bureau (PG)



POPE JOHN PAUL II  
COLLEGE OF EDUCATION,,  
REDDIARPALAYM,,  
PONDICHERRY - 605 010

IMPROVEMENTS TO BE MADE

- ❖ More no. of relevant and licensed Software to be procured.
- ❖ Library books & Journals are to be augmented.
- ❖ Academic Performance of the students needs to be improved.
- ❖ Financial status of the Institution needs to be improved.
- ❖ Qualified faculty at senior level should be recruited.

  
Aradhana Chopra  
(Asstt. Director)



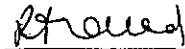


Further, in the event of infringement/contravention or non-compliance of the norms & standards prescribed by the AICTE during the last approved academic year, the Council shall take further action to withdraw approval to this case for admission during subsequent academic year and the liability arising out of such withdrawal of approval will be solely that of Management / Trust /Society and/or institutions .

The Council reserves the right to visit the Institution any time it may deem fit to verify the compliance of norms and standards of AICTE.

You are requested to kindly monitor the progress made by this institution for fulfillment of the norms & standards of the Council & keep the concerned Regional Committee and AICTE informed.

Yours faithfully



(Prof.R.S.Gaud)  
Adviser (E&T)

copy to:

1. The Regional Officer , AICTE, Southern Regional Office , 26 Haddows Road , Shastri Bhavan , Chennai - 600006.

He is requested to monitor compliance with the norms & standards and conditions stipulated by the Council and keep the concerned Regional Committee and the AICTE informed of the same.

He is also requested to ensure the receipt of notarised undertaking as specified by the Council from the institution / management concerned within the stipulate time frame.

2. The Director of Technical Education, Govt. of Pondicherry, Pondicherry - 605 001.
3. The Registrar,

He is requested to complete the process of affiliation for facilitating admissions.

4. The Principal. PONDICHERRY UNIVERSITY, R.VENKATARAMAN NAGAR KALAPET  
PONDICHERRY TAMIL NADU FAX: 0413-852211,65 PH : 852177,212.

- 
5. Guard File.



अखिल भारतीय तकनीकी शिक्षा परिषद्  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION  
(भारत सरकार का एक सांविधिक संस्थान) (A STATUTORY BODY OF THE GOVERNMENT OF INDIA)

Prof. A.M. Agrawal  
Adviser (E&T)

F.No.: PN-60/MCP-CS/97  
Date: 26th December, 2000

Secretariat to Government (Education),  
Government of Pondicherry,  
Pondicherry - 605 001

Sub.:Extension of AICTE approval to POPE JOHN PAUL II COLLEGE OF EDUCATION,  
REDDIARPALAYAM, PONDICHERRY - 605 010, PONDICHERRY for conduct of MCA  
programme for the academic year(s) 2000-2001

Sir,

I am directed to state that on consideration of the reports of the Expert Committee and in consultations with the concerned agencies in this regard, the All India Council for Technical Education (AICTE), is pleased to accord extension of approval to POPE JOHN PAUL II COLLEGE OF EDUCATION, REDDIARPALAYAM, PONDICHERRY - 605 010, PONDICHERRY only for the course(s) and intake capacity as given below with the specific conditions that admission shall be made through the Central Counselling by the Govt. of PONDICHERRY only:

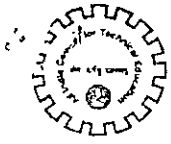
Course(s)	Approved Intake
MASTER IN COMPUTER APPLICATION (MCA) FULL TIME 3 YEARS DAY PROGRAMME	30

This approval has been accorded subject to fulfillment of norms & standards of the Council for the course(s) and intake approved above.

Further, the observations and specific conditions(if any) of the expert committee are annexed to this letter. The institution shall fulfill all the conditions without any delay. Nonfulfillment will lead to withdrawal of approval without the need of any more opportunity, as the institution is well aware of the deficiencies.

The admission will be made in accordance with Regulations notified by the AICTE vide GSR 476(E) dated 20.05.1994 based on the Hon'ble Supreme Court Judgement dated 04.02.1993 with regard to WP(C) No. 607 of 1992 in the case of Unni Krishanan JP and other etc. V/s. State Government of Andhra Pradesh and others etc. and later judgements. No Management/Institute/Trust or Society shall announce admissions directly under any circumstances. Any action contrary to this provision taken by the institute will make it liable to be derecognised.

Contd\2...



अखिल भारतीय तकनीकी शिक्षा परिषद्, नई दिल्ली  
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION, New Delhi

Continuation Sheet .....

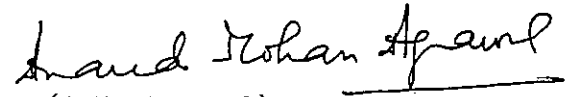
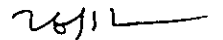
- 2 -

Further, in the event of infringement/contravention or non-compliance of the norms & standards prescribed by the AICTE during the last approved academic year, the Council shall take further action to withdraw approval to this case for admission during subsequent academic year and the liability arising out of such withdrawal of approval will be solely that of Management/Trust/Society and/or Institutions.

The Council reserves the right to visit the institution any time it may deem fit to verify the compliance of Norms & Standards of AICTE.

You are requested to kindly monitor the progress made by this institution for fulfillment of the Norms & Standards of the Council & keep the concerned Regional Committee and AICTE informed.

Yours faithfully,

  
(A.M. Agrawal) 

Copy to :

1. The Regional Officer, AICTE, Southern Regional Office, 26 Haddows Road, Shastri Bhavan, Chennai - 600 006. - 160 002.

He is requested to monitor compliance with the Norms and Standards and conditions stipulated by the Council and keep the concerned Regional Committee and the AICTE informed of the same.

He is also requested to ensure the receipt of notarised undertaking as specified by the Council from the institution/management concerned within the stipulated time frame.

2. The Director of Technical Education, Govt. of Pondicherry, Pondicherry - 605 001.
3. The Registrar, Pondicherry University, Pondicherry

He is requested to complete the process of affiliation for facilitating admissions.

4. The Principal, POPE JOHN PAUL II COLLEGE OF EDUCATION, REDDIARPALAYAM, PONDICHERRY - 605 010, PONDICHERRY
5. Guard File.



## AUDIT REPORT

I have audited the attached Income & Expenditure and Balance Sheet of **“POPE JOHN PAUL II COLLEGE OF EDUCATION – A UNIT OF LE CONSEIL DE ADMINISTRATION DE PONDICHERRY”** for the year ending **31.03.2021** with the books of accounts and vouchers produced before me for verification and report that:

These financial statements are the responsibility of the Trust’s management. My responsibility is to express my opinion on these financial statements based on my audit.

I conducted the audit in accordance with the auditing standards generally accepted in India. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that the audit provides a reasonable basis for my opinion.

Further to my comments in the annexure referred above, I report that :

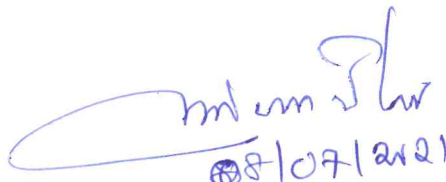
1. I have obtained all the information & explanations, which to the best of my knowledge and belief were necessary for the purpose of audit;
2. The Balance Sheet and the Income and Expenditure Account dealt with by this report are in agreement with the Books of accounts.

In my opinion and to the best of my information and according to the information given to me, the said accounts give a true and fair view:

- a. In the case of the **Balance Sheet** of the state of affairs of the above named association as at **31-03-2021**.
- b. In the case of the Income and Expenditure account of **the Excess of Income over Expenditure** for the year ending as on that date.

Place: Pondicherry

Date : 10.06.2021

  
08/07/2021  
Secretary  
Pope John Paul II College of Education  
Reddarpalayam, Pondicherry - 605 010



POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010					
RECEIPTS & PAYMENTS ACCOUNT FOR THE YEAR ENDING 31-03-2021					
To	<b>Opening Balances:</b>		By	Audit Fees ✓	75000
	Cash in hand	12793	"	AICTE Fees ✓	10024
			"	Bank Charges	15151
	<b>Bank:</b>		"	Charity & Gift	257753
	SIB SB-12990	264783	"	Electricity Charges	143525
	SIB SB-3268	23012	"	Exam Fees	1450450
	IOB SB-8836	30738	"	Exam Remuneration	35000
	SBI SB-2896	173451	"	Generator Maintenance	28154
	IOB SB-26804	107109	"	Gratuity	389289
	SIB SB-4432	4651	"	Book Purchases	1280882
	PB Bank	26718	630462	Medical Expenses	29072
			"	Miscellaneous Expenses ✓	235472
"	<b>Tuition Fees:</b>		"	Postage & Courier ✓	10846
	I.C	15352175	"	Printing & Stationery	82771
	BCA	1156000	"	Remuneration ✓	40980
	B.Ed	6751500	"	Hospitality & Celebrations	195791
	MCA	650500	23910175	Repairs & Maintenance	1382344
			"	Staff salary adv - COVID	626000
"	Other Fees	9522000	"	Salary to Staffs	22947858
			"	Teaching Staff Allowances (T.P)	223064
"	Ladies Hostel Collection - Sch-1	2430456	"	Telephone & Internet Charges	278548
"	Application Sales	337163	"	Travelling Expenses	174538
"	Bank Interest	86049	"	University Fees ✓	346918
"	SIB Car Loan	930000	"	Vehicle Maintenance	32850
"	Book Collection	1317550	"	Donations	15500
"	Advances Recovered	1168258	"	Water Tax	4680
"	Exam Fees	2049650	"	Security salary ✓	269040
"	Exam Remuneraion	74930	"	Honorarium ✓	4000
"	Other Income	283092	"	Library Books	328945
"	Staff salary adv - COVID	174000	"	Advances paid	1536267
			"	Ladies Hostel Expenses - Sch-2	2246859
			"	Endowment Fund	1000000
			"	<b>Fixed Assets:</b>	
			"	Cash Counting Machine	12500
			"	Furnitures & Fittings	10812
			"	Car	1122931
			"	<b>Closing Balances:</b>	
				<b>Bank:</b>	
				SIB SB-12990	681205
				SIB SB-3268	4110470
				IOB SB-8836	31003
				SBI SB-2896	178216
				IOB SB-26804	156762
				SIB SB-4432	413562
				PB Bank	145316
					5716534
				Cash in hand	366230
					42926578
		<b>42926578</b>			<b>42926578</b>

Place: Puducherry  
Date : 10-06-2021

*Subashini B*  
CA. B. SUBASHINI, B.Com., FCA.,  
Chartered Accountant  
B-8, Rose Apartments,  
Venkata Nagar,  
Pondicherry - 605 011.

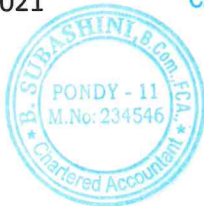
*[Signature]*  
**Secretary**  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry - 605 010

**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010**

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31-03-2021**

By	Audit Fees	75000	By	Tution Fees received	23910175
"	AICTE Fees	10024	"	Other Fees	9522000
"	Bank Charges	15151			
"	Charity & Gift	257753	"	Ladies Hostel Collection - Sch-1	2430456
"	Electricity Charges	143525			
"	Exam Fees	1450450	"	Application Sales	337163
"	Exam Remuneration	35000	"	Bank Interest	86049
"	Generator Maintenance	28154	"	Exam Fees	2049650
"	Gratuity	389289	"	Exam Remuneration	74930
"	Book Purchases	1280882	"	Book Collection	1317550
"	Medical Expenses	29072	"	Other Income	283092
"	Miscellaneous Expenses	235472			
"	Postage & Courier	10846			
"	Printing & Stationery	82771	"		
"	Remuneration	40980			
"	Hospitality & Celebrations	195791			
"	Repairs & Maintenance	1382344			
"	Salary to Staffs	22947858			
"	Teaching Staff Allowances	223064			
"	Telephone Charges	278548			
"	Travelling Expenses	174538			
"	University Fees	346918			
"	Vehicle Maintenance	32850			
"	Donations	15500			
"	Water Tax	4680			
"	Security salary	269040			
"	Honorarium	4000			
"	Library Books	328945			
"	Ladies Hostel Expenses - Sch-2	2246859			
"	Depreciation	2251621			
"	Excess of Income over Expenditure	5224140			
		<b>40011065</b>			<b>40011065</b>

Place: Puducherry  
Date : 10-06-2021



*Subashini B*  
CA B. SUBASHINI, B.Com., FCA.,  
Chartered Accountant  
B-8, Rose Apartments,  
Venkata Nagar,  
Pondicherry - 605 011.

*Secretary*  
**Secretary**

Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-605 010

**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605 010**

**2020-2021**

**FIXED ASSETS SCHEDULE**

Particulars	Rate	Op. WDV	Additions		Total	Depreciatio	Cl. WDV
			>180 days	<180 days			
Airconditioner	15	107655			107655	16148	91507
Building & Compound Wall	10	8299780			8299780	829978	7469802
Computer	40	26520			26520	10608	15912
Computer Room	10	32288			32288	3229	29059
Car	15	95255		1122931	1218186	98508	1119678
Electrical Fittings	10	294963			294963	29496	265467
Furnitures & Fittings	10	1583530		10812	1594342	158894	1435448
Generator	15	12247			12247	1837	10410
Sports Equipments	15	737			737	111	626
Hostel Shed & Toilet	10	82972			82972	8297	74675
Stage Work	10	23514			23514	2351	21163
Telephone	15	2253			2253	338	1915
UPS	15	98845			98845	14827	84018
Fax Machine	15	1031			1031	155	876
Xerox Machine	15	188753			188753	28313	160440
Coffee Machine	15	774			774	116	658
Motor & Motor Equipments	15	5301			5301	795	4506
Air Compressor	15	40975			40975	6146	34829
Aquaguard	15	64297			64297	9645	54652
Battery	15	166			166	25	141
Borewell	10	11345			11345	1135	10211
CD Camera & Digital	15	43076			43076	6461	36615
Lab & Kitchen Equipment	15	281855			281855	42278	239577
Fish Tank	10	3183			3183	318	2865
Fountains	10	5541			5541	554	4987
Garden Work	10	15728			15728	1573	14155
Generator Room	10	3992			3992	399	3593
Green Room	10	18508			18508	1851	16657
Intercom	15	3402			3402	510	2892
CD Projector	15	19451			19451	2918	16533
Plumbing	10	16579			16579	1658	14921
TVS	15	689			689	103	586
Water Cooler	15	2158			2158	324	1834
Water Filter	15	735			735	110	625
Fridge	15	5654			5654	848	4806
Counting Machine	15	1136		12500	13636	1108	12528
Grinder & Mixie	15	454			454	68	386
TV & Tape Recorder, Dish	15	44554			44554	6683	37871
Gas Fittings	15	739			739	111	628
Vessels	10	3516			3516	352	3164
Steam Boiler	15	223			223	33	190
Iron Box	15	39			39	6	33
Phone Booth	10	2551			2551	255	2296
Fire Extinguisher	15	350497			350497	52575	297922
Wooden Platform	10	2283			2283	228	2055
Software	40	119959			119959	47984	71975
Printer	15	1550			1550	233	1318
Vending Machine	15	8291			8291	1244	7047
Ladies Hostel Building	10	6442202			6442202	644220	5797982
Bio Metric Machine	15	40937			40937	6141	34796
Lift	15	1301500			1301500	195225	1106275
Website	25	45000			45000	11250	33750
Scanning Machine	15	20322			20322	3048	17274
		<b>19779498</b>	<b>0</b>	<b>1146243</b>	<b>20925741</b>	<b>2251621</b>	<b>18674120</b>



*Subashini B*

*Secretary*

Pope John Paul II College of Education



**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010**

**BALANCE SHEET AS ON 31-03-2021**

<b>Capital Fund:</b>			<b>Fixed Assets:</b>		
Opening Balance	21704646		As per Schedule		18674120
Add: Excess of Income			<b>Investments:</b>		
over Expenditure	5224140	26928786	Endowment Fund	1675000	
Old Boy's Fund		5000	Old Boy's FD	5000	1680000
<b>Loans &amp; Advances:</b>			<b>Deposits:</b>		
BMT School	361782		Telephone	8230	
South Indian Bank - Car Loan	930000		Electricity	33740	
<b>Outstanding Liabilities:</b>			Security Deposit	275390	
Audit Fees	75000		Gas	8474	325834
			Advances		1537850
			<b>Bank:</b>		
			SIB SB-12990	681205	
			SIB SB-3268	4110470	
			IOB SB-8836	31003	
			SBI SB-2598	178216	
			IOB SB-26804	156762	
			SIB SB-4432	413562	
			Pudhuvai Bharathiyar	145316	5716534
			Cash in hand		366230
	<b>28300568</b>				<b>28300568</b>



**CA B. SUBASHINI, B.Com.,FCA.,**  
**Chartered Accountant**  
 B-8, Rose Apartments,  
 Venkata Nagar,  
 Pondicherry - 605 011.

*(Signature)*  
**Secretary**

Pope John Paul II College of Education  
 Reddiarpalayam, Pondicherry-605 010

Place: Puducherry

Date : 10-06-2021



## AUDIT REPORT

I have audited the attached Income & Expenditure and Balance Sheet of "**POPE JOHN PAUL II COLLEGE OF EDUCATION – A UNIT OF LE CONSEIL DE ADMINISTRATION DE PONDICHERRY**" for the year ending **31.03.2020** with the books of accounts and vouchers produced before me for verification and report that:

These financial statements are the responsibility of the Trust's management. My responsibility is to express my opinion on these financial statements based on my audit.

I conducted the audit in accordance with the auditing standards generally accepted in India. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that the audit provides a reasonable basis for my opinion.

Further to my comments in the annexure referred above, I report that :

1. I have obtained all the information & explanations, which to the best of my knowledge and belief were necessary for the purpose of audit;
2. The Balance Sheet and the Income and Expenditure Account dealt with by this report are in agreement with the Books of accounts.

In my opinion and to the best of my information and according to the information given to me, the said accounts give a true and fair view:

- a. In the case of the **Balance Sheet** of the state of affairs of the above named association as at **31-03-2020**.
- b. In the case of the Income and Expenditure account of **the Excess of Expenditure over Income** for the year ending as on that date.

Place: Pondicherry

Date : 10.12.2020

*Subashini B*





**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010**

**INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31-03-2020**

By	Audit Fees	65000	By	Tution Fees received	24313650	
"	AICTE Fees	210024		Less: Receivables in(18-19)	1050000	23263650
"	Archbishop Education Fund	75000				
"	Bank Charges	2630	"	Other Fees		11182350
"	Charity & Gift	218368				
"	Electricity Charges	277538	"	Ladies Hostel Collection - Sch-1		5357502
"	Exam Fees	1536840				
"	Generator Maintenance	39200	"	Application Sales		317500
"	Gratuity	768007	"	Bank Interest		499797
"	Book Purchases	964187	"	Exam Fees		1963545
"	Medical Expenses	11767	"	Book Collection		1383394
"	Miscellaneous Expenses	158810	"	Other Income		143023
"	Postage & Courier	13154				
"	Printing & Stationery	202208	"	Excess Of Expenditure over Income		2793699
"	Remuneration	120140				
"	Hospitality & Celebrations	317556				
"	Repairs & Maintenance	1033525				
"	Sports Expenses	151213				
"	Salary to Staffs	31726620				
"	Teaching Staff Allowances	284500				
"	Telephone Charges	44125				
"	Travelling Expenses	259566				
"	University Fees	423716				
"	Vehicle Maintenance	98940				
"	Donations	26000				
"	Seminar, Practical Exam, Camp exp	56660				
"	Water Tax	6060				
"	Security salary	222300				
"	Honorarium	21000				
"	Library Books	361231				
"	Convocation Expenses	138485				
"	Ladies Hostel Expenses - Sch-2	4631549				
"	Depreciation	2438541				
		<b>46904460</b>				<b>46904460</b>

Place: Puducherry  
Date : 10-12-2020

**CA B. SUBASHINI, B.Com., FCA.,**  
Chartered Accountant  
B-8, Rose Apartments,  
Venkata Nagar,  
Pondicherry - 605 011.



*[Signature]*  
**Secretary**  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry-605 010

**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010**

**BALANCE SHEET AS ON 31-03-2020**

<b>Capital Fund:</b>			<b>Fixed Assets:</b>		
Opening Balance	24498345		As per Schedule		19779498
Less: Excess of Exps. over			<b>Investments:</b>		
Income	2793699	21704646	Endowment Fund	675000	
			Old Boy's FD	5000	680000
Old Boy's Fund		5000	<b>Deposits:</b>		
			Telephone	8230	
<b>Loans &amp; Advances:</b>			Electricity	33740	
BMT School		361782	Security Deposit	275390	
			Gas	8474	325834
<b>Outstanding Liabilities:</b>			Advances		717841
Audit Fees		75000	<b>Bank:</b>		
			SIB SB-12990	264783	
			SIB SB-3268	23012	
			IOB SB-8836	30738	
			SBI SB-2598	173451	
			IOB SB-26804	107109	
			SIB SB-4432	4651	
			Pudhuvai Bharathiyar	26718	630462
			Cash in hand		12793
		<b>22146428</b>			<b>22146428</b>

*Subashini B*

*[Signature]*  
**Secretary**  
 Pope John Paul II College of Education  
 Reddiarpalayam, Pondicherry - 605 010

Place: Puducherry  
 Date : 10-12-2020

**CA B. SUBASHINI, B.Com., FCA.,**  
**Chartered Accountant**  
 B-8, Rose Apartments,  
 Venkata Nagar,  
 Pondicherry - 605 011.



**POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605 010**

**2018-2019**

**FIXED ASSETS SCHEDULE**

Particulars	Rate	Op. WDV	Additions		Total	Depreciatio	Cl. WDV
			>180 days	<180 days			
Airconditioner	15	126653			126653	18998	107655
Building & Compound Wall	10	8772234	449744		9221978	922198	8299780
Computer	40	8384	11950	17900	38234	11714	26520
Computer Room	10	35876			35876	3588	32288
Car	15	112065			112065	16810	95255
Electrical Fittings	10	299302	28435		327737	32774	294963
Furnitures & Fittings	10	1180139	339042	227649	1746830	163300	1583530
Generator	15	14408			14408	2161	12247
Sports Equipments	15	867			867	130	737
Hostel Shed & Toilet	10	92191			92191	9219	82972
Stage Work	10	26127			26127	2613	23514
Telephone	15	2650			2650	398	2253
UPS	15	116288			116288	17443	98845
Fax Machine	15	1213			1213	182	1031
Xerox Machine	15	240232			240232	51479	188753
Coffee Machine	15	910			910	137	774
Motor & Motor Equipments	15	6237			6237	936	5301
Air Compressor	15	706	47500		48206	7231	40975
Aquaguard	15	29063	46581		75644	11347	64297
Battery	15	195			195	29	166
Borewell	10	12606			12606	1261	11345
CD Camera & Digital	15	50678			50678	7602	43076
Lab & Kitchen Equipment	15	228168		95040	323208	41353	281855
Fish Tank	10	3537			3537	354	3183
Fountains	10	6157			6157	616	5541
Garden Work	10	17475			17475	1748	15728
Generator Room	10	4435			4435	444	3992
Green Room	10	20564			20564	2056	18508
Intercom	15	4002			4002	600	3402
CD Projector	15	22884			22884	3433	19451
Plumbing	10	18421			18421	1842	16579
TVS	15	811			811	122	689
Water Cooler	15	2539			2539	381	2158
Water Filter	15	865			865	130	735
Fridge	15	6652			6652	998	5654
Counting Machine	15	1337			1337	201	1136
Grinder & Mixie	15	534			534	80	454
TV & Tape Recorder, Dish	15	52416			52416	7862	44554
Gas Fittings	15	869			869	130	739
Vessels	10	3907			3907	391	3516
Steam Boiler	15	262			262	39	223
Iron Box	15	46			46	7	39
Phone Booth	10	2834			2834	283	2551
Fire Extinguisher	15	412349			412349	61852	350497
Wooden Platform	10	2537			2537	254	2283
Software	40	712	199219		199931	79972	119959
Printer	15	1823			1823	273	1550
Vending Machine	15	9754			9754	1463	8291
Ladies Hostel Building	10	6251148	906854		7158002	715800	6442202
Bio Metric Machine	15		48161		48161	7224	40937
Lift	15		1270000	240000	1510000	208500	1301500
Website	25		60000		60000	15000	45000
Scanning Machine	15	23908			23908	3586	20322
		<b>18229964</b>	<b>3407486</b>	<b>580589</b>	<b>22218039</b>	<b>2438541</b>	<b>19779498</b>



*Subashini B*

CA B. SUBASHINI, B.Com., FCA.,  
Chartered Accountant  
B-8, Rose Apartments,  
Venkata Nagar,  
Pondicherry - 605 011.

*Secretary*  
Secretary  
Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry - 605 010



## AUDIT REPORT

I have audited the attached Income & Expenditure and Balance Sheet of "**POPE JOHN PAUL II COLLEGE OF EDUCATION – A UNIT OF LE CONSEIL DE ADMINISTRATION DE PONDICHERY**" for the year ending **31.03.2019** with the books of accounts and vouchers produced before me for verification and report that:

These financial statements are the responsibility of the Trust's management. My responsibility is to express my opinion on these financial statements based on my audit.

I conducted the audit in accordance with the auditing standards generally accepted in India. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that the audit provides a reasonable basis for my opinion.

Further to my comments in the annexure referred above, I report that :

1. I have obtained all the information & explanations, which to the best of my knowledge and belief were necessary for the purpose of audit;
2. The Balance Sheet and the Income and Expenditure Account dealt with by this report are in agreement with the Books of accounts.

In my opinion and to the best of my information and according to the information given to me, the said accounts give a true and fair view:

- a. In the case of the **Balance Sheet** of the state of affairs of the above named association as at **31-03-2019**.
- b. In the case of the Income and Expenditure account of **the Excess of Income over Expenditure** for the year ending as on that date.

Place: Pondicherry

Date : 07.06.2019

*Subashini*





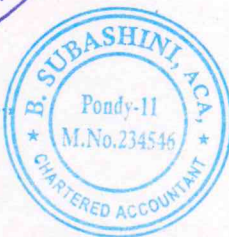


POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605010						
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDING 31-03-2019						
To	Advertisement	8209	By	Tution Fees received	25659200	
"	Audit Fees	75000		Add: Recd.in adv(17-18)	3467500	
"	AICTE Fees	75024		Receivables(17-18)	1050000	
"	Archbishop Education Fund	98300			30176700	
"	Bank Charges	1002		Less: Receivables in(16-	915000	29261700
"	Charity & Gift	237663				
"	Electricity Charges	252588	"	Other Fees		10965941
"	Exam Fees	1342675				
"	Generator Maintenance	45500	"	Ladies Hostel Collection - Sch-1		5575391
"	Gratuity	1313937				
"	Book Purchases	1271298	"	Application Sales		332000
"	Medical Expenses	3793	"	Bank Interest		491815
"	Miscellaneous Expenses	162796	"	Exam Fees		2049245
"	Postage & Courier	10976	"	Book Collection		1504855
"	Printing & Stationery	174862				
"	NCTE Inspection expenses	183025				
"	Remuneration	41700				
"	Refreshment	250278				
"	Repairs & Maintenance	840009				
"	Sports Expenses	117465				
"	Salary to Staffs	30133554				
"	Teaching Staff Allowances	214000				
"	Telephone Charges	35313				
"	Travelling Expenses	266542				
"	University Fees	259338				
"	Vehicle Maintenance	87069				
"	Donations	57000				
"	Seminar, Practical Exam, Camp exp	103000				
"	Water Tax	6240				
"	Security salary	238570				
"	Staff Contribution to retired staff	72600				
"	Honorarium	11500				
"	Library Books	184394				
"	Concession	356500				
"	Ladies Hostel Expenses - Sch-2	4115803				
"	Depreciation	1923182				
"	Excess of Income over xpenditure	5610242				
		<b>50180947</b>				<b>50180947</b>

Place: Puducherry  
Date : 07-06-2019

*Subashini B*

CA B. SUBASHINI, A.C.A.  
Chartered Accountant  
B-8, Rose Apartments,  
Venkata Nagar,  
Pondicherry - 605 011.

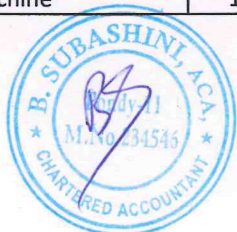


*[Signature]*  
Secretary

Pope John Paul II College of Education  
Reddiarpalayam, Pondicherry - 605 010



POPE JOHN PAUL II COLLEGE OF EDUCATION :: REDDIARPALAYAM :: PUDUCHERRY - 605 010							
2018-2019							
FIXED ASSETS SCHEDULE							
Particulars	Rate	Op. WDV	Additions		Total	Depreciation	Cl. WDV
			>180 days	<180 days			
Airconditioner	15	149004			149004	22351	126653
Building & Compound Wall	10	9256667	490260		9746927	974693	8772234
Computer	60	20961			20961	12577	8384
Computer Room	10	39862			39862	3986	35876
Car	15	131841			131841	19776	112065
Electrical Fittings	10	332558			332558	33256	299302
Furnitures & Fittings	10	1183665	127600		1311265	131127	1180139
Generator	15	16951			16951	2543	14408
Sports Equipments	15	1020			1020	153	867
Hostel Shed & Toilet	10	102434			102434	10243	92191
Stage Work	10	29030			29030	2903	26127
Telephone	15	3118			3118	468	2650
UPS	15	69884		61500	131384	15096	116288
Fax Machine	15	1427			1427	214	1213
Xerox Machine	15	291711			291711	51479	240232
Coffee Machine	15	1071			1071	161	910
Motor & Motor Equipments	15	7338			7338	1101	6237
Air Compressor	15	830			830	125	706
Aquaguard	15	33576			33576	4513	29063
Battery	15	229			229	34	195
Borewell	10	14007			14007	1401	12606
CD Camera & Digital	15	32371	27250		59621	8943	50678
Lab & Kitchen Equipment	15	40843	106678	111108	258629	30461	228168
Fish Tank	10	3930			3930	393	3537
Fountains	10	6841			6841	684	6157
Garden Work	10	19417			19417	1942	17475
Generator Room	10	4928			4928	493	4435
Green Room	10	22849			22849	2285	20564
Intercom	15	4708			4708	706	4002
CD Projector	15	26922			26922	4038	22884
Plumbing	10	20468			20468	2047	18421
TVS	15	954			954	143	811
Water Cooler	15	2987			2987	448	2539
Water Filter	15	1018			1018	153	865
Fridge	15	7826			7826	1174	6652
Counting Machine	15	1573			1573	236	1337
Grinder & Mixie	15	628			628	94	534
TV & Tape Recorder, Dish	15	36266	25400		61666	9250	52416
Gas Fittings	15	1022			1022	153	869
Vessels	10	4341			4341	434	3907
Steam Boiler	15	308			308	46	262
Iron Box	15	54			54	8	46
Phone Booth	10	3149			3149	315	2834
Fire Extinguisher	15	898	484219		485117	72768	412349
Wooden Platform	10	2819			2819	282	2537
Software	60	1780			1780	1068	712
Printer	15	2145			2145	322	1823
Vending Machine	15	11475			11475	1721	9754
Ladies Hostel Building	10	3061874		3679433	6741307	490159	6251148
Scanning Machine	15	28127			28127	4219	23908
		<b>15039698</b>	<b>1261407</b>	<b>3852041</b>	<b>20153146</b>	<b>1923182</b>	<b>18229964</b>



*(Handwritten Signature)*  
Secretary