

**Modern College of Engineering, Pune-5**

**MCA Department**



**Progressive Education Society's  
Modern College of Engineering,  
Shivajinagar,  
Pune-05**

**MCA DEPARTMENT**

**E-CURRICULUM  
BOOKLET  
(2020Pattern)**

**SY – MCA (UNDER ENGINEERING) SEMESTER IV**



**Progressive Education Society's  
Modern College of Engineering, Pune-5  
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**Quality Policy of the Institute**

We, PES Modern College of Engineering are committed to develop and foster cultured and promising professionals by imparting quality education in the field of Engineering and Management.

**Vision of the Institution**

"To create a collaborative academic environment to foster professional excellence and ethical values"

**Mission of the Institution**

- To develop outstanding professionals with high ethical standards capable of creating and managing global enterprises
- To foster innovation and research by providing a stimulating learning environment
- To ensure equitable development of students of all ability levels and backgrounds
- To be responsive to changes in technology, socio-economic and environmental conditions
- To foster and maintain mutually beneficial partnerships with alumni and industry



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**Department Vision**

“To develop Competent Technocrats in the field of Computer applications imbued with human values”

**Departmental Mission**

- To impart knowledge in the field of Computer applications with a focus on developing the required competencies.
- To improve technical skill of the students through practical and hands-on experience.
- To enhance the quality of the students by collaboration with Alumni and Industry.
- To make students socially responsible citizens.

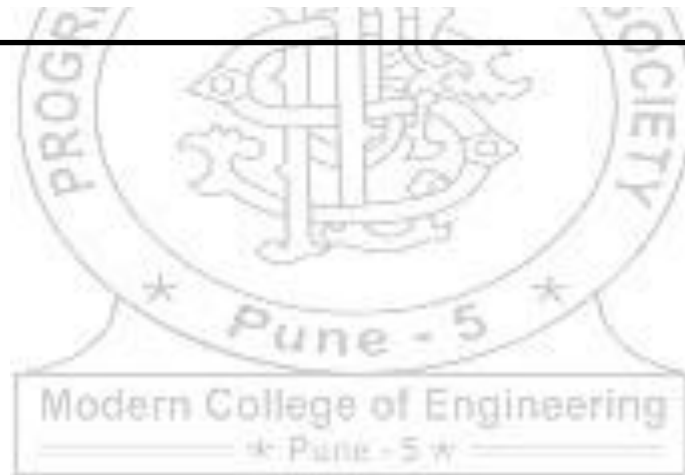




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**Program Educational Objectives**

- PEO 1: The broad knowledge of computer applications for successful careers in industry.
- PEO 2: The habit of lifelong learning for career development in this dynamic and rapidly changing field.
- PEO 3: The ability to inculcate effective communication in the team through demonstration of good analytical design and implementation skills.





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**Program Outcomes:**

To develop Competent Technocrats in the field of Computer applications imbued with human values” **program Outcomes**

After completing MCA degree student will be able to:

- PO1. Apply knowledge of mathematics, computer science appropriate for real world applications.
- PO2. Identify, formulate, analyze and solve complex computing problems using relevant domain disciplines.
- PO3. Design and evaluate solutions for complex computing problems that meet specified needs for real world applications.
- PO4. Apply programming logic including design of algorithm, programs, analysis and interpretation of data to provide valid solutions
- PO5. Apply appropriate techniques and modern computing tools for development of real world applications.
- PO6. Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.
- PO7. Understand the need and develop the capacity to persistent learning for continual development as a computer professional.
- PO8. Participate as a member and leader in a team and stand out in multidisciplinary environments to demonstrate computing and management skills.
- PO9. Communicate effectively to comprehend and present effective technical Documentation.
- PO10. Apply the computing knowledge efficiently & effectively with concern for societal, environmental, and cultural aspects relevant to professional computing practices.
- PO11. To contribute effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.



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- PO12.To identify a timely opportunity and innovation with entire effort to function as an successful entrepreneur.

## INDEX

Course Code	Course Contents	Teaching Scheme Hours/Week		Examination Scheme					Total Marks	Credit
		TH	PR	Int	Ext	T W	OR	PR		
410912	* <a href="#">Major Project</a>	-	15	100	200	-	-	-	300	15
410913	<a href="#">Seminar on Major Project</a>	-	2	50	-	-	-	-	50	1
	Total	-	17	150	200	-	-	-	350	16
410914	** <a href="#">Audit Course-4</a>									Grade

\* **410910-Audit Course 3(AC3) Options:**

[410910A-AC3-I Foreign Language](#)

[410910B-AC3-II Professional Ethics and Etiquettes](#)

[410910C-AC3-III Mobile App Development](#)

\* **Major Project with Industrial Internship**

\*\* **410914-Audit Course 4(AC4) Options:**

[410914A -AC4-I:Entrepreneurship Development](#)

[410914B -AC4-II: Digital and Social Media Marketing](#)



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**Course Structure SY MCA SEM IV**

**Structure for Second Year MCA (Semester IV)**

**\*\*Non Credit MOOC Courses:** Non Credit course is compulsory. No grade points are associated with non-credit courses and are not accounted in the calculation of the performance indices SGPA & CGPA. Result of assessment will be PP or NP. Set of non-credit courses offered is provided. **Conduction and assessment of performance in said course is to be done at institute level.** The selection of 3 distinct non-credit MOOC courses, one per semester (Sem I, II & III) should be decided by respective institute. The list of non credit MOOC courses suggested is given below

**Suggested MOOC Courses- Swayam /Spoken Tutorial/NPTEL**

Sr. No.	Non Credit Course -1	Non Credit Course -2
1	C programming -8 weeks	Introduction To Soft Computing-8 weeks
2	Enhancing soft skill and personality – 8 wks	RDBMS Postgres SQL -6 Weeks
3	Design and analysis of algorithms -8 weeks	Privacy and Security in Online Social Media -8 weeks
4	Linux (Spoken tutorial)	Employment Communication A Lab based course – 8 weeks
5	Soft Skill Development-8 weeks	PHP and MySQL (Spoken tutorial)
6	Speaking Effectively -8 weeks	Scilab (Spoken tutorial)

**\*\* Institute may choose any one of suggested MOOC Course or decide any other MOOC course at Institute level.**



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# SEMESTER IV

## 410912: Major Project

Teaching Scheme	Credit	Examination Scheme
Teaching Scheme: TH: 15 Hours/Week	15	Examination Scheme: Internal: 100 Marks External: 200 Marks





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**Guidelines**

**Preamble**

An internship/Industrial training/Project work is the form of experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional setting. The students can opt for internship/Industrial training/Project work in any industry/academic institute/R&D/PSU/Government or semi government organizations. This caters students, the opportunity to gain valuable applied experience and explore networks in professional fields they are considering for career paths; and give employers the opportunity to guide and evaluate talent. This will not only help students in gaining professional know-how but also benefits, corporate on fresh perspectives on business issues and even discovering future business leaders.

**Course Objectives:**

- To expose students to product development cycle using industrial experience, use of state of art technologies.
- Evaluate the various validation and verification methods.
- To Work in TEAM and learn professionalism
- To consolidate the work as furnished report.
- To apply communication skills to effectively promote ideas, goals or products. □

**Course Outcomes:**

On completion of the course, learner will be able

**CO1:** Learn team work and professionalism.

**CO2:** Apply SDLC to project

**CO3:** Apply communication and presentation skills

**CO4:** Recognize the importance of documentation.

In Major Project with Industrial Internship, the student shall undergo industrial training and work on real life application as a project work. Student shall apply Software Development Life Cycle to project, draw design diagrams using tools, implement the system and test it before deployment.

The student shall prepare and submit the report of Project work in standard format for satisfactory completion of the work that is the duly certified by the concerned guide and head of the Department/Institute.



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□ Progress of project work is monitored regularly on weekly project slot/project day. Regular interval presentations are to be arranged to review and assess the work. During process of monitoring and continuous assessment AND evaluation the individual and team performance is to be measured.

Project work is monitored and continuous assessment is done by guide and authorities

During university examination internal examiner and External examiners jointly, evaluate the project work.

Recommended performance measure parameters may include-Problem definition and scope of the project, Exhaustive and Rational Requirement Analysis, Comprehensive Implementation-Design, modelling, documentation, Usability, Optimization considerations(Time, Resources, Costing), Thorough Testing, Project Presentation and Demonstration(ease of use and usability), Presentation of work in the form of Project Report(s), Understanding individual capacity, Role & involvement in the project, among other parameters The student shall prepare the duly certified final report of project work in standard format for satisfactory completion of the work by the concerned guide and head of the Department/Institute.

**410913**  
**Seminar on Major  
Project**



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**Teaching Scheme, Credit, Examination Scheme**

Teaching Scheme	Credit	Examination Scheme
Teaching Scheme: TH: 02 Hours/Week	Credit 01	Examination Scheme: Internal: 50 Marks

**Companion Course, if any:** Major Project with Industrial Internship (410912)

**Course Objectives:**

- ❖ Develop skills of technical presentation
- ❖ Prepare documentation
- ❖ Perform literature survey

**Course Outcomes:**

On completion of the course, learner will be able to–

- CO1:** Analyze recent topic or emerging trends
- CO2:** Summarize literature survey
- CO3:** Identify, understand and discuss current real-world issues.
- CO4:** Suggest future scope for the topic
- CO5:** Use professional ethics
- CO6:** Develop proficiency in presentation skills and written communication

**Guidelines**

- ❖ Each student will make a presentation on any topic in the area of his Major Project area preferably keeping track with recent technological trends and development.
- ❖ The topic must be selected in consultation with the institute guide.
- ❖ Each student will make the seminar presentation in the term making use of audio/video aids for the duration of 30-35 minutes and submit two copies of the seminar report in a



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prescribed format provided by the host institution duly signed by the guide and the head of the department. Plagiarism Check can be done for Seminar report

- ❖ Attendance for all seminars for all students is compulsory. Staff members of the institute will assess the seminars internally.
- ❖ Research articles could be referred from IEEE, ACM, Science direct, Springer, Elsevier, IETE, CSI or from freely available digital libraries like Digital Library of India (dli.ernet.in), National Science Digital Library, Research Gate, worldwidescience.org etc

**Recommended Format of the Seminar Report:**

- ❖ Title Page with Title of the topic, Name of the candidate with Exam Seat Number / Roll Number, Name of the Guide, Name of the Department, Institution and Year & University
  - Seminar Approval Sheet/Certificate
- ❖ Abstract and Keywords
- ❖ Acknowledgements
- ❖ Table of Contents, List of Figures, List of Tables and Nomenclature
- ❖ Chapters Covering topic of discussion- Introduction with section including organization of the report, Literature Survey/Details of design/technology/Analytical and/or experimental work, if any, Discussions and Conclusions, Bibliography/References
  - Plagiarism Check report

**Learning Resources:**

**Reference Books:**

1. Sharon J. Gerson, Steven M. Gerson, Technical Writing: Process and Product, Pearson Education Asia, ISBN :130981745, 4th Edition
2. Andrea J. Rutherford, Basic Communication Skills for Technology, Pearson Education Asia, 2<sup>nd</sup> Edition

**MOOC Courses: <web links>**

1. <https://www.coursera.org/specializations/presentation-skills>



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# 410914A: Audit Course 4-I: Entrepreneurship Development

## Course Objectives:

- To create entrepreneurial awareness among the students.
- To help students to develop their entrepreneurial competence.
- To develop knowledge and understanding in creating and managing new Venture.

To help students to up bring out their own business plan.

## Course Outcomes:

On completion of the course, learner will be able to–

**CO1:** Develop awareness about entrepreneurship

**CO2:** Develop an entrepreneurial mind-set by learning key skills such as design, personal selling, and communication

**CO3:** Identify business opportunities.

**CO4:** Develop comprehensive business plans.

**CO5:** Understand the entrepreneurial finances and policies

## Course Contents

### Module-I: Introduction to Entrepreneurship

Concept and meaning of Entrepreneurship, history of entrepreneurship development, role of entrepreneurship in economic development, Myths about entrepreneurs, agencies in entrepreneurship management.

### Module-II: The Entrepreneur

Why to become entrepreneur, the skills/ traits required to be an entrepreneur, Creative and Design Thinking, the entrepreneurial decision process, skill gap analysis, and role models, mentors and support system, entrepreneurial success stories.



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**Module-III: Communication**

Importance of communication, barriers and gateways to communication, listening to people, the power of talk, personal selling, risk taking & resilience, negotiation.

**Module-IV: Business Opportunity Identification**

Opportunity search: Divergent Thinking Mode, Opportunity Selection, Convergent Thinking Mode

Preliminary Project Report (PPR), Meaning and Importance, Objectives, Selections Contents, Marketing and Technical Feasibility, Financial Viability, Precautions to be taken by entrepreneur while preparing Business Plan

**Module-V: Entrepreneurial Finance**

Debt or equity financing, Sources of Finance - Commercial banks, private placements, venture capital, financial institutions supporting entrepreneurs; Lease Financing; Funding opportunities for Startups in India.

**Module-VI: Institutional Support and Policies:**

Institutional support towards the development of entrepreneurship in India, technical consultancy organizations, government policies for small scale enterprises.

**Learning Resources:**

**Reference Books:**

1. Taneja Satish and Gupta S.L. : Entrepreneurship Development – New Venture Creations – Galgotia Publishing Company, New Delhi
2. Jain P.C. (ed) : Handbook for New Entrepreneurs Entrepreneurship Development Institute of India.
3. Gupta C.B. & Srinivas : Entrepreneurial Development, Sultan D, Chand & sons, New Delhi.
4. Desai Vasant : Management of Small Scale Industries Himalaya Publishing House.

**e-Books: <web links>**

1. <https://www.freebookcentre.net/business-books-download/Entrepreneurship-and-Small-Scale-Businesses.html>

**MOOC Courses: <web links>**

1. <https://nptel.ac.in/courses/127/105/127105007/>  
<https://www.udemy.com/course/business-development-in-e-business-era/>



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# 410914B:AC4-II Digital and Social Media Marketing

**Preamble:** This course provides an introduction to digital and social media marketing. It is built around a proven eight-step social media planning model provides you with a cumulative learning experience, showing you how to construct social media strategies that achieve desired marketing goals. These marketing goals shape the development of tailored social media strategies. Special attention is given to the most effective techniques for identifying targeted marketing on the social web, with emphasis on the creation of personas that represent the critical online market segments for a company. You will discover how to put these well-defined personas to work in selecting the optimal social media platforms for reaching an organization's marketing goals.

With these guidelines in mind, the most productive marketing tactics for each type of major social media platform are examined in depth. These platform-specific tactics are brought together to create a comprehensive social media marketing plan, with detailed explanations and illustrations from a real world plan.

## Course Objectives

Understand the landscape of traditional, digital, and social media marketing

## Course Outcomes:

On completion of the course, learner will be able to

- ❖ **CO1:** Understand social media marketing
- ❖ **CO2:** Define social media marketing goal setting necessary to achieve successful online campaigns.
- ❖ **CO3:** Understand digital marketing concepts

## Course Contents

**Module-I: Introduction to social media marketing**



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Introduction and importance of social media and its types, Define social media marketing, Explain the 7 myths of social marketing, History of social media marketing, characteristics of a successful social media marketer, careers in social media marketing **Module-II: Goal setting in a social environment**

social media plan, social media marketing planning cycle, step in the social media marketing planning

cycle, set social media marketing goals, social media objectives, 8 C's of Strategy Development

**Module-III: Introduction to Digital Marketing**

Concept of Digital Marketing, characteristics of digital marketing, difference between traditional marketing and digital marketing, Importance, Trends and scenario of the digital marketing

**Learning Resources:**

**Text Books:**

1. An Introduction to Social Media Marketing, Alan Charlesworth
2. Digital Marketing, Dave Chaffey, Fiona Ellis-Chadwick

**Reference Books:**

1. Digital Marketing An Overview, Dr. Antony Puthussery
2. Social Media Marketing Tracy L. Tuten, Michael R. Solomon

