

ACADEMIC REGULATIONS & COURSE STRUCTURE

Master of Computer Applications (MCA)

(Applicable for the batches admitted from 2014-15)



**SWARNANDHRA COLLEGE OF ENGINEERING &
TECHNOLOGY**

Seetharampuram, Narsapur – 534 280, W.G.Dt.

Andhra Pradesh

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS

Vision of the institute

- ❖ To provide the society with Centre of Learning in Technical Education and Research that motivates the students to evolve into dynamic professionals.

Mission of the institute

- ❖ Providing Quality education, student centered teaching learning process and state of the art infrastructure for professional aspirants hailing from both rural and urban areas.
- ❖ Evolving this organization into a centre of Academic and Research Excellence.
- ❖ Imparting Technical Education that encourages independent thinking, develops strong domain knowledge and positive attitude towards holistic growth of young minds

Department of MCA VISION:

- ❖ Department of Master of Computer Applications aims to generate groomed, technically competent and skilled intellectual professionals to meet the current challenges of the modern computing industry

Department of MCA MISSION:

- ❖ The department strives for building quality professionals that all are committed and self-motivated with specific skills to prepare the students for the diverse work place of the global environment.
- ❖ The department of Computer Applications strives to provide quality and competency-based education through necessary infrastructure and fine-tune the younger generation to encounter the challenges ahead with courage

PROGRAM EDUCATIONAL OBJECTIVES:

PEO1: Prepare graduates to become Computer Professionals with comprehensive knowledge and skills to produce software for emerging requirements.

PEO2: To provide training in recent technology to the students of Computer Application department as well as collaboration with our academic partners in the field of IT.

PEO3: Prepare graduates to become Consultant/Entrepreneurs in the IT and ITES industries with confidence in self-employment.

PROGRAM OUTCOMES (PO):

1. **Computational Knowledge:** Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialisation to the abstraction and conceptualization of computing models from defined problems and requirements.
2. **Problem Analysis:** Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
3. **Design/Development of Solutions:** Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
4. **Conduct Investigations of Complex Computing Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage:** Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
6. **Professional Ethics:** Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.
7. **Life-long Learning:** Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.
8. **Project management and finance:** Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
9. **Communication Efficacy:** Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
10. **Societal and Environmental Concern:** Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.

11. **Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
12. **Innovation and Entrepreneurship:** identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large

PROGRAM SPECIFIC OUTCOMES:

MCA graduates will be able to:

PSO1: Solve real world computing system problems of various industries by understanding and applying the principles of mathematics, computing techniques and business concepts

PSO2: Design, test, develop and maintain desktop, web, mobile and cross platform software applications using modern tools and technologies

ACADEMIC REGULATIONS

1. INTRODUCTION:

The MCA Degree of the Swarnandhra College of Engineering & Technology shall be conferred on candidates who are admitted to the program and fulfill all the requirements for the award of the Degree.

Swarnandhra College of Engineering & Technology, an autonomous institution, follows Semester pattern for all three years of its Postgraduate MCA programme with internal and external evaluation

Semester Pattern: Each academic year shall be divided in to two semesters; each semester consists of 22 weeks duration with a minimum of 110 working days which includes instruction, mid examinations and final examinations with 42 to 48 contact periods per week.

2. ELIGIBILITY FOR ADMISSIONS

Admission to the above programme shall be made subject to the eligibility, qualification and specialization prescribed by the University from time to time.

Admissions shall be made on the basis of merit rank obtained by the qualifying candidate at ICET examination or at an Entrance Test conducted by the University subject to reservations prescribed by the University from time to time.

AWARD OF MCA DEGREE:

- 2.1. A student shall be declared eligible for the award of MCA degree, if he pursues a course of study and completes it successfully for not less than three academic years and not more than six academic years.
- 2.2. A Student, who fails to fulfill all the academic requirements for the award of the degree within six academic years from the year of their admission, shall forfeit his seat in MCA course.

3. ATTENDANCE:

A candidate shall be deemed to have eligibility to write End Semester examinations if he has put in a minimum of 75% of attendance in aggregate of all the subjects.

- 3.1. Condonation of shortage of attendance up to 10% i.e. 65% and above, and below 75% may be given by the College academic committee.
- 3.2. Condonation of shortage of attendance shall be granted only on genuine and valid reasons on representations by the candidate with supporting evidence.
- 3.3. Shortage of attendance below 65 % shall in NO case be condoned.
- 3.4. A candidate shall not be promoted to the next semester unless he fulfills the attendance requirements of the previous semester.
- 3.5. A stipulated fee shall be payable towards condonation of shortage of attendance

4. DISTRIBUTION AND WEIGHTAGE OF MARKS:

4.1.1 The performance of the candidate in each semester shall be evaluated subject-wise, with a maximum of 100 marks for theory and 100 marks for Laboratory, on the basis of Internal Evaluation and End Semester Examination.

4.1.2 External Evaluation:

For the theory subjects 60 marks shall be awarded based on the performance in the End Examination Marks. External examination shall be conducted for a duration of 180 minutes with 5 questions to be answered out of 8 questions.

4.1.3 Internal Evaluations:

40 marks shall be awarded based on the Internal Evaluation. Internal Evaluation shall be made based on the Weighted Average of the marks secured in the two Mid Term Examinations conducted, one in the middle of the Semester and the other immediately after the completion of instruction. The weights are 80% for the mid in which the student secured highest marks and 20% for the mid in which the student secured lowest marks.

Each midterm examination shall be conducted for duration of 120 minutes with 4 questions to be answered out of 4 questions

4.1.4 For practical subjects, 40 marks for Internal Evaluation and 60 for external examination.

Out of 40 Internal marks 20 marks shall be awarded for day-to-day work including Record work and the remaining 20 marks to be awarded by conducting internal laboratory test. The External Laboratory examination for MCA

Course must be conducted with two examiners. One of them is the Laboratory Class

Teacher, and the second examiner will be external examiner from outside college

4.2 There shall be a Term Paper presentation during VI semester. For Term paper, a student under the supervision of a faculty member, shall collect the literature on a topic and critically review the literature and submit it to the Department in a report form and shall make an oral presentation before the Department Committee. The Department Committee consists of Head of the Department, supervisor and two other senior faculty members of the department. For Term Paper there will be only internal evaluation of 50marks. A minimum of 50% of maximum marks shall be obtained to earn the corresponding credits

4.3 A candidate shall be deemed to have secured the minimum academic requirement in a subject if he secures a minimum of 40% of marks in the End Examination and a minimum aggregate of 50% of the total marks in the End Semester Examination and Internal Evaluation taken together. If a candidate secures a minimum of 40% of marks in the End Examination and 40 % -49 % of the total marks in the End Semester Examination and Internal Evaluation taken together and secures an overall aggregate of 50% in the total semester he may be passed in those subjects also.

4.4 In case the candidate does not secure the minimum academic requirement in any subject (as specified in 4.4) he has to reappear for the End Examination in that subject. A candidate shall be given one chance to re-register for each subject provided the internal marks secured by a candidate are less than 50% and he has failed in the end examination. In such case candidate must re-register for subjects(s) and secure required minimum attendance. Attendance in there-registered subjects(s) shall be calculated separately to decide up on the eligibility for writing the end examination in those subjects(s). In the event of taking another chance, the internal marks and end examination marks obtained in the previous attempt are nullified. At a given time a candidate is permitted to re-register for maximum of two subjects in addition to the subjects of regular semester.

4.5 A candidate shall be allowed to submit the project report only after fulfilling the attendance requirements of all the semesters. The viva-voce examination shall be conducted at the end of the course work (6th semester).

4.6 **Seminar:** The seminar paper has two components one from the course work without repetition, from the topics studied and the other component is suggested by The advisor. A

hardcopy of the information on seminar paper topic in the form of a report is to be submitted for evaluation along with presentation. The two components of the seminar are distributed between two halves of the semester paper and are internally evaluated for 50 marks each. The average of the two components shall be taken as the finals core. A minimum of 50% of maximum marks shall be obtained to earn the corresponding credits

4.7 MiniProject: The Mini project shall be carried out during the summer break for a minimum of 4 weeks after the IV Semester and to be completed before the start of the V Semester. A report has to be submitted at the beginning of V Semester for assessment by an internal evaluation committee comprising Head of the Department and two faculty of the department including the project Supervisor for 50 Marks. A minimum of 50% maximum marks shall be obtained to earn the corresponding credits

5.0 EVALUATION OF PROJECT WORK

Every candidate shall be required to submit thesis or dissertation after taking up a topic approved by the Project Review Committee.

5.1 A Project Review Committee (PRC) shall be constituted with Principal/Director as chair person, Head of the Department and two other senior faculty members of the concerned department.

5.2 Registration of Project Work: A candidate is permitted to register for the project work after satisfying the attendance requirement of all the subjects (theory and practical subjects) up to V semester.

5.3 After satisfying 5.2, a candidate has to submit, in consultation with his project supervisor, the title, objective and plan of action of his project work to the Project Review Committee for its approval before the fifth semester end examinations. After obtaining the approval of the Committee the student can initiate the Project work after the fifth semester end examinations.

5.4 Every candidate shall work on projects approved by the PRC of the College.

5.5 The duration of the project is for one semester.

5.6 If a candidate wishes to change his supervisor or topic of the project the can do so with approval of the PRC. However, the Project Review Committee (PRC) shall examine whether the change of topic/supervisor leads to a major change of his initial plans of project proposal. If so, his date of registration for the project work starts from the date of change of Supervisor or topic as the case may be.

5.7 A candidate shall submit status report in two stages at least with a gap of one month

between them.

5.8 The work on the project shall be initiated in the beginning of the Sixth semester and the duration of the project is for one semester. A candidate shall be allowed to submit the project report only with the approval of PRC and not earlier than 20 weeks from the date of registration of the project work. For the approval of PRC the candidate shall submit the draft copy of thesis to the Principal (through Head of the Department) and shall make an oral presentation before the PRC.

5.9 Three copies of the Project Thesis certified by the supervisor & HOD shall be submitted to the College/Department.

5.10 The Project thesis shall be adjudicated by one examiner selected by the Principal from a panel of three examiners, who are eminent in the field and nominated by the concerned Head of the Department.

5.11 The viva-voce examination shall be conducted by a board consisting of the supervisor, Head of the Department and the examiner who adjudicated the Thesis. The Board shall jointly report candidates work as:

- A. Excellent
- B. Good
- C. Satisfactory
- D. Unsatisfactory

If the report of the viva-voce is unsatisfactory, the candidate will retake the viva-voce examination after three months. If he fails to get a satisfactory report at these cond viva-voce examination, he will not be eligible for the award of the degree unless the candidate is asked to revise and resubmit. If the report of the examiners is unfavorable again, the project shall be summarily rejected.

Head of the Department shall coordinate and make arrangements for the conduct of viva-voce examination.

SEMESTER WISE DISTRIBUTION OF CREDITS

Semester	Theory	Lab	Total Credits
1 st Semester	5	3	21
2 nd Semester	5	2	19
3 rd Semester	5	2 + Seminar	21
4 th Semester	5	2 + Mini Project	21
5 th Semester	5	2 + Soft Skills/Aptitude Lab	21
6 th Semester	Project + Term Paper		17

6. GRADING SYSTEM:**6.1 Award of Grade:**

(i) Grade Point Average (GPA):

a) The Grade Point Average (GPA) will be calculated according to the formula.

$$\text{GPA} = \frac{\sum C_i G_i}{\sum C_i}$$

Where C_i = number of credits for the subject i

G_i = grade points obtained by the student in the subject.

b) To arrive at Cumulative Grade Point Average (CGPA), the formula is used considering the student's performance in all the courses taken in all the semesters completed up to the particular point of time.

$$\text{CGPA} = \frac{\sum C_i G_i}{\sum C_i}$$

Where C_i = number of credits for the subject i

G_i = grade points obtained by the student in the subject.

(ii) After a student satisfies the requirements prescribed for the award of UG/PG Program he/she shall be placed in one of the following four grades. The award of the degree is based on CGPA on a grade point scale of 10.

CGPA	Award of Division
$\geq 8.00^*$	First Class with Distinction
≥ 7.00 and < 8.00	First Division
≥ 6.00 and < 7.00	Second Division
< 6.00	Unsatisfactory

* In addition to the required CGPA of 8, the student must have necessarily passed all the courses of every semester in the minimum stipulated period for the programme.

6.2 Award of Grade in Each Semester:

- (i) Based on the student performance during a given semester, a final letter grade will be awarded at the end of the semester for each subject. The letter grades and the corresponding grade points are as given in the Table.

Percentage of Marks Scored	Letter Grade	Grade points
≥ 90	S	10
80 - 89	A	9
70-79	B	8
60-69	C	7
50-59	D	6
< 50	E	Fail

- (ii) A student earns a minimum of 6 grade points (E grade) in a subject is declared to have successfully completed the subject, and is deemed to have earned the credits assigned to that subject. However it should be noted that a pass in any subject/term paper/seminar/project/mini project shall be governed by the rules mentioned in S.No.7.
- (iii) Grade Sheet: A grade sheet (memorandum) will be issued to each student indicating his/her performance in all courses taken in that semester and also indicating the grades and SGPA.
- (iv) Transcripts: After successful completion of the total programme of study, a Transcript containing performance of all academic years will be issued as a final record. Duplicate transcripts will also be issued up to any point of study to any student on request and by paying the stipulated fee in force.

- (v) Candidates shall be permitted to apply for recounting/revaluation within the stipulated period with payment of prescribed fee.
- (vi) The Academic Council has to approve and recommend to the JNTUK, Kakinada for the award of a degree to any student.

7.0 WITH HOLDING OF RESULTS:

If the candidate has not paid any dues to the College or if any case of indiscipline is pending against him, the result of the candidate will be withheld. The issue of degree is liable to be withheld in such cases.

8.0 TRANSISTORY REGULATIONS

Candidates who have discontinued or have been detained for want of attendance or who have failed after having undergone the course are eligible for admission to the same or equivalent subjects as and when subjects are offered, subject to 4.5.

9.0 GENERAL:

9.1 The academic regulations should be read as a whole for purpose of any interpretation.

9.2 In case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Principal is final

9.3 The College may change or amend the academic regulations and syllabus at any time and the changes and amendments made shall be applicable to all the students with effect from the date notified by the college.

9.4 Wherever the word he, him or his occur, it will also include she, her and hers.

**SWARNANDHRA COLLEGE OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)**

NAAC with 'A' Grade (3.32/4.00 CGPA)

Approved by A.I.C.T.E, New Delhi, Permanently Affiliated to J N T U K, KAKINADA
Seetharampuram, NARSAPUR – 534 280, W.G.Dist., Andhra Pradesh

Tel.: 08814 – 240599

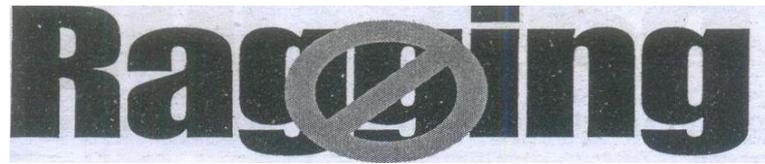


⇒ Prohibition of ragging in educational institutions Act 26 of 1997 Salient Features

⇒ Ragging within or outside any educational institution is prohibited.

Ragging means doing an act which causes or is likely to cause Insult or Annoyance or Fear or Apprehension or Threat or Intimidation or outrage of modesty or Injury to a student

	Imprisonment upto		Fine upto
Teasing, Embarrassing and Humiliation	 6 Months	+	Rs.1, 000/-
+ Assaulting or Using Criminal Force or Criminal Intimidation	 1 Year		Rs.2, 000/-
+ Wrongfully restraining or confining or causing hurt	 2 Years		Rs.5000/-
+ Causing grievous hurt, kidnapping or Abducts or rape or committing unnatural offence	 5 Years		Rs.10, 000/-
Causing death or abetting suicide	 10 Years		Rs. 50,000/-



ABSOLUTELY NO TO RAGGING

1. Ragging is prohibited as per Act 26 of A.P. Legislative Assembly, 1997.
2. Ragging entails heavy fines and/or imprisonment.
3. Ragging invokes suspension and dismissal from the College.
4. Outsiders are prohibited from entering the College and Hostel without permission.
5. Girl students must be in their hostel rooms by 7.00 p.m.
6. All the students must carry their Identity Card and show them when demanded.
7. The Principal and the Wardens may visit the Hostels and inspect the rooms any time.

**MASTER OF COMPUTER APPLICATIONS
COURSE STRUCTURE - PG**

MCA
SEMESTER I

S.NO	Course Code	Course Title	L	P	C	I	E	TM
1	PGMC1T01	Fundamentals of computer and c programming	4	--	3	40	60	100
2	PGMC1T02	Digital Logic & Computer System Organization	4	--	3	40	60	100
3	PGMA1T01	Discrete Mathematical Structures & Graph Theory	4	--	3	40	60	100
4	PGMA1T02	Probability & Statistical Applications	4	--	3	40	60	100
5	PGMB1T06	Accounting & Financial Management	4	--	3	40	60	100
6	PGBS1L01	Communications Skills Lab	4	--	3	40	60	100
7	PGMC1L01	C Programming Lab	--	4	2	40	60	100
8	PGMC1L02	Digital Logic & Computer System Organization Lab	--	4	2	40	60	100
		TOTAL	20	12	21	320	480	800

MCA
SEMESTER II

S.NO	Course Code	Course Title	L	P	C	I	E	TM
1	PGMC2T01	OOPS through JAVA	4	--	3	40	60	100
2	PGMC2T02	Operating System	4	--	3	40	60	100
3	PGMC2T03	Data Structures using C	4	--	3	40	60	100
4	PGMB2T08	Perspectives of Organization & Management	4	--	3	40	60	100
5	PGMA2T01	Operations Research	4	--	3	40	60	100
6	PGMC2L01	OOPS through JAVA Lab		4	2	40	60	100
7	PGMC2L02	Data Structures using C Lab	--	4	2	40	60	100
		TOTAL	20	08	19	280	420	700

L-LECTUREHOURS,P-PRACTICALHOURS,C-CREDITS,
I-INTERNALMARKS,E-EXTERNALMARKS,TM-TOTALMARKS

**MASTER OF COMPUTER APPLICATIONS
COURSE STRUCTURE - PG**

MCA
SEMESTER III

S.NO	Course Code	Course Title	L	P	C	I	E	TM
1	PGMC3T01	Database Management Systems	4	--	3	40	60	100
2	PGMC3T02	Computer Communications	4	--	3	40	60	100
3	PGMC3T03	Design Analysis & Algorithms	4	--	3	40	60	100
4	PGMC3T04	Unix Programming	4	--	3	40	60	100
5	PGMC3T05	Software Engineering	4	--	3	40	60	100
6	PGMC3L01	Database Management Systems	--	4	2	40	60	100
7	PGMC3L02	Unix Programming Lab	--	4	2	40	60	100
8	PGMC3S01	Seminar	--	--	2	50	--	50
TOTAL			20	08	21	330	420	750

MCA
SEMESTER IV

S.NO	Course Code	Course Title	L	P	C	I	E	TM
1	PGMC4T01	Data Warehousing & Mining	4	--	3	40	60	100
2	PGMC4T02	Advanced JAVA & Web Technologies	4	--	3	40	60	100
3	PGMC4T03	Software Testing Methodologies	4	--	3	40	60	100
4	---	Elective-I	4	--	3	40	60	100
5	---	Elective-II	4	--	3	40	60	100
6	PGMC4L01	Data Warehousing & Mining Lab	--	4	2	40	60	100
7	PGMC4L02	Advanced JAVA & Web Technologies Lab	--	4	2	40	60	100
8	PGMC4M01	Mini Project	--	--	2	50	--	50
TOTAL			20	08	21	330	420	750

L-LECTURE HOURS, P-PRACTICAL HOURS, C-CREDITS,
I-INTERNAL MARKS, E-EXTERNAL MARKS, TM-TOTAL MARKS

**MASTER OF COMPUTER APPLICATIONS
COURSE STRUCTURE - PG**

MCA

SEMESTER V

S.NO	Course Code	Course Title	L	P	C	I	E	TM
1	PGMC5T01	Information Security	4	--	3	40	60	100
2	PGMC5T02	Object Oriented Analysis & Design using UML	4	--	3	40	60	100
3	PGMC5T03	Multimedia Application Development	4	--	3	40	60	100
4	---	Elective – III	4	--	3	40	60	100
5	---	Elective – IV	4	--	3	40	60	100
6	PGMC5L01	Object Oriented Analysis & Design using UML Lab	--	4	2	40	60	100
7	PGMC5L02	Multimedia Application Development Lab	--	4	2	40	60	100
8	PGBS5L01	Soft Skill/Aptitude Lab	--	--	2	50	--	50
TOTAL			20	08	21	330	420	750

MCA

SEMESTER VI

S.NO	Course Code	Course Title	L	T	P	C
1	PGMC6Q01	Term Paper	2	50	--	50
2	PGMC6P01	Dissertation/Thesis	--	--	--	Excellent/Good/Satisfactory/Unsatisfact
TOTAL			02	50	--	50

L-L ECTUREHOURS,P-PRACTICALHOURS,C-CREDITS,

L-M I-INTERNALMARKS,E-EXTERNALMARKS,TM-TOTALMARKS

ELECTIVE SUBJECTS

Elective-I		
1	PGMC4TE1	Human Computer Interaction
2	PGMC4TE2	ERP & Supply Chain Management
3	PGMC4TE3	Mobile Computing
Elective – II		
1	PGMC4TE4	Computer Graphics
2	PGMC4TE5	Artificial Intelligence
3	PGMC4T46	Cloud Computing
Elective – III		
1	PGMC5TE1	E-Commerce
2	PGMC5TE2	Animation & Gaming
3	PGMC5TE3	Computer Forensics
Elective – IV		
1	PGMC5TE4	Middle Ware Technologies
2	PGMC5TE5	Software Project Management
3	PGMC5TE6	Big Data Analytics

SWARNANDHRA COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

Department of Master of Computer Applications

COURSE STRUCTURE

S.NO	SEMESTER	C	I	E	TM
1	I-SEMESTER	21	320	480	800
2	II-SEMESTER	19	280	420	700
3	III-SEMESTER	21	330	420	750
4	IV-SEMESTER	21	330	420	750
5	V-SEMESTER	21	330	420	750
6	VI-SEMESTER	--	50	---	50
TOTAL		105	1640	2160	3800

C-CREDITS, I-INTERNAL MARKS, E-EXTERNAL MARKS, TM-TOTAL MARKS