

(Abstract)

New Generation Course in M.Sc. Computer Science with Specialization in Artificial Intelligence Programme under Credit Based Semester System, at Govt. College, Thalassery, Chokli - Scheme, Syllabus and Pattern of Question Papers of Core and Generic Elective Courses - with effect from 2020 admission -implemented orders issued.

ACADEMIC C SECTION

Acad/C2/16584/NGC/2021

Dated: 22.02.2021

- Read:-1. G.O(Ms) No.389/2020/HEDN dated 05.11.2020
2. Minutes of the meeting of Syndicate held on 17.11.2020 vide item No.2020.550
 3. U.O No. Acad.A3/389/NEW COURSES/ 2020-21 dated 23.12.2020
 4. U.O No Acad.C1/11460/2013 dated 12.03.2014
 5. Minutes of the meeting of Curriculum Syllabus Monitoring Committee held on 20.11.2020
 6. U.O No. Acad/C2/2408/2020 dated 27.11.2020
 7. Syllabus submitted by the convenor Expert Committee dated 12.02.2021

ORDER

1. As per read (1) above, sanction was accorded by the Government to start New Generation UG/PG Courses in 15 Govt and Aided Colleges under Kannur University, during the academic year 2020-21.
2. Subsequently, the meeting of the Syndicate as per paper read (2) above resolved to start the newly Sanctioned UG & PG Programmes in Govt/Aided Colleges/University Departments from the academic year 2020-21.
3. Accordingly, provisional affiliation was granted for conducting the New Generation Course M.Sc. Computer Science with Specialization in Artificial Intelligence programme at Govt. College, Thalassery, Chokli, Kannur in the academic year 2020-21, as per paper read (3).
4. Further, the Curriculum Syllabus Monitoring Committee, as per paper read (5) above, resolved to follow the the existing Regulation for PG programmes in affiliated colleges under Credit Based Semester System implemented w.e.f 2014 admission as per read (4), for the New Generation Courses also. An Expert Committee was constituted for preparing the draft curriculum, Syllabus of New Generation Courses, by conducting two days' workshop as per paper read (6).
5. Accordingly, the scheme, Syllabus & Pattern of Question papers of M.Sc. Computer Science with Specialization in Artificial Intelligence programme CBSS prepared by the Expert Committee was submitted by the Convenor of Curriculum Syllabus Monitoring Committee as per paper read (7), for implementation w.e.f 2020 admission at Govt. College, Thalassery, Chokli, Kannur.
6. The Vice Chancellor after considering the matter in detail and in exercise of the power of the Academic Council conferred under Section 11(1) Chapter III of Kannur University Act 1996 accorded sanction to implement the Scheme, Syllabus and Pattern Question Papers of Core, and Generic Elective Courses of M.Sc Computer Science with Specialization in Artificial Intelligence programme(CBSS), at Govt. College, Thalassery, Chokli, Kannur, with effect from 2020 admission, subject to reporting to the Academic Council.
7. The Scheme, Syllabus & Pattern of Question Papers of M.Sc. Computer Science with

Specialization in Artificial Intelligence programme CBSS are uploaded in the University website. (www.kannuruniversity.ac.in).

8. Orders are issued accordingly.

Sd/-

BALACHANDRAN V K
DEPUTY REGISTRAR (ACAD)
For REGISTRAR

To: The Principal, Govt. College, Thalassery
Chokli, Kannur

Copy To: 1. The Examination Branch (through PA to CE)
2. PS to VC/ PA to PVC/ PA to Registrar
3. DR/AR I Academic/Academic A Section
4. The Computer Programmer (for uploading website)
5. SF/DF/FC

Forwarded / By Order


SECTION OFFICER



KANNUR  UNIVERSITY

M.SC. COMPUTER SCIENCE
with Specialization in Artificial Intelligence

under
KUCBSS

Scheme and Syllabus

2020-21

Programme Specific Outcomes (PSO):

After the successful completion of two year MSc Computer Science program in Artificial Intelligence, a student should be capable of:

- Communicate computer science concepts, designs, and solutions effectively and professionally.
- Apply knowledge of computing to produce effective designs and solutions for specific problems.
- Use software development tools, software systems, and modern computing platforms
- An understanding of the fundamental design mechanisms, algorithms, and state-of-the-art system architectures in AI, along with knowledge of the core areas of AI, including machine learning, natural language processing, and computer vision.
- The ability to apply creative thinking, algorithmic design skills, and coding skills to build modern AI systems.
- The ability to convert descriptions of abstract AI challenges into descriptions of specific AI project requirements.

Expert Committee

1. Dr. Thomas Monoth
(Convener)
Associate .Professor,
Department of Computer Science
Mary Matha College
Mananthavady
2. Dr. Sabu M K,
Professor,
Department of Computer Applications,
CUSAT, Cochin.
3. Dr.Rajesh R,
Associate .Professor,
Department of Computer Science,
Central University of Kerala.
4. Dr. Sanil Sankar
Assistant .Professor
Department of IT
Kannur University

KANNUR UNIVERSITY

M Sc COMPUTER SCIENCE

(Credit Based Semester System)

Regulations, Curricula, Syllabus and Scheme of Evaluation

(With Effect from 2014 admission)

REGULATIONS

1. Duration of the M. Sc. (Computer Science) programme shall be 2 years, divided into 4 semesters. Each semester shall have 90 working days. The maximum period of completion is eight semesters (4 years).

2. Eligibility for admission: As announced by the University from time to time.

3. Programme Structure

3.1 Attendance: The minimum attendance required for each course shall be 75% of the total number of classes conducted for that semester. Those who secure the minimum attendance in a semester alone will be allowed to register for the End Semester Examination. Condonation of shortage of attendance may be granted as per Kannur University PG regulation.

3.2 Credits: The total minimum credits, required to complete M. Sc. Computer Science programme is 80 in which minimum credits required for core (including practical and project) courses is 60 and for Elective courses is 12.

3.3 Theory and Practical courses

The evaluation scheme for each Theory and Practical courses except MCS3C16 Research Methodology shall contain two parts; (a) Continuous Assessment (CA) and (b) End Semester Evaluation (ESE). 20% marks shall be given to CA and the remaining 80 % to ESE. For MCS3C16 Research methodology the evaluation is 100% internal and shall follow the distribution applicable to theory CA.

CONTINUOUS ASSESSMENT (CA)

Theory : The components of theory evaluation are as follows:

	COMPONENTS	% OF MARKS
i	Test papers	40%
ii	Assignment	20%
iii	Case Study / Seminar / Viva	20%
iv	Attendance	20%

- i. *Test Papers*: There shall be a minimum of two test papers to be conducted for each course. If more than two test papers are conducted, then two best scores shall be taken for the award of IA marks. The dates of test papers shall be announced well in advance and the marks should be displayed in the notice board.
- ii. *Assignments*: One or more assignments (including practical assignments) shall be given for each course. The mode of assessment of the assignments shall be decided by the faculty concerned with due approval from the department council and shall be declared at the beginning of the semester. (It is suggested that to the extent possible, give individual assignments and also conduct short viva based on the assignment submitted).
- iii. *Case study / Seminar / viva*: The faculty with due approval from the department council shall choose one or more from this category, depending on the nature of subject and the mode of assessment is to be declared at the commencement of the semester. For seminar, topics outside but related to the syllabus shall be chosen.
- iv. *Attendance* :

Attendance	% of Marks for attendance
≥ 90	100
85 to 89	80
80 to 84	60
76 to 79	40
75	20

Practical :The Components of CA for practical courses except Case study I and II are as follows:

	COMPONENTS	% OF MARKS
i	Lab Test (Minimum one)	20%
ii	Completion of the list of Lab assignments prescribed by the faculty	20%
iii	Periodical assessment of Lab assignments through execution of programs and viva	40%
iv	Attendance (Mark distribution is same as that of theory)	20%

For Case study I and II :

	COMPONENTS	% OF MARKS
i	Periodical viva / short quizzes / short programming assignments to evaluate the basic knowledge/understanding of the tool.	30%
ii	Coding – Logic, Selection of appropriate constructs / features of the Tool, Style etc.	30%
iii	Execution of the case study - output	20%
iv	Viva based on case study	20%

Note :All the records in respect of Continuous Assessment (CA) must be kept in the department and must be made available for verification by university. The results of the CA shall be displayed on the notice board within 5 working days from the last day of a semester. It should be get signed by the candidates. The marks awarded for various components of the CA shall not be rounded

off, if it has a decimal part. The total marks of the CA shall be rounded off to the nearest whole number.

END SEMESTER EVALUATION (ESE):

There shall be double valuation system of answer books. The average of two valuations shall be taken in to account. If there is a variation of more than 10% of the maximum marks, the answer books shall be valued by a third examiner. The final marks to be awarded shall be the average of the nearest two out of three awarded by the examiners. After that there shall be no provision for revaluation

Pattern of questions: Questions shall be set to assess knowledge acquired, standard application of knowledge, application of knowledge in new situations, critical evaluation of knowledge and the ability to synthesize knowledge. Question paper for end semester theory examination shall consist of:

- i. Short answer type : 12 questions of which 10 to be answered. $10 \times 3 = 30$ marks,
- ii. Essay type: 5 questions (one either –or question from each module) $\times 10$ marks = 50 marks

End Semester Evaluation in Practical courses shall be conducted and evaluated by two examiners- one internal and one external. Details of scheme of evaluation of ESE practical courses are given along with respective syllabus.

3.4 Project: A project work has to be undertaken by all students. The project can be software development following all or some of the software development lifecycle or an R&D project. The hours allotted for project work may be clustered into a single slot so that students can do their work at a centre or location for a continuous period of time. The Major project work should be carried out in the Department /Institution or in a level Industry / R & D organization of national repute. Project work shall be carried out under the supervision of a Teacher. If the project is carried out in an Industry / R & D organization outside the campus, then a co-guide shall be selected from the concerned organization. If the project work is of interdisciplinary in nature, a co-guide shall be taken from the other department concerned. Every student should do the Project individually and no grouping is allowed. All the candidates are required to get the approval of their synopsis and the guide before commencement of the project from the Department. A co-guide should be a postgraduate in CS or allied subject or a person of eminence in the area in which student has chosen the project. At the end of the semester the candidate shall submit the Project report (two bound copies and one soft copy) duly approved by the guide and co-guide for End Semester Evaluation. The project report shall be prepared according to the guidelines approved by the University.

Evaluation of Project:

- i. A Departmental committee duly constituted by the Head of the Department will review the project periodically.
- ii. **Continuous Assessment of project work:** There shall be three internal presentations before the committee (Minimum two members, including the guide). The assessment is based on presentation, interim report and viva voce. The total mark for CA shall be divided among the three presentations in the ratio 20%:30%:50%. Each internal presentation shall be evaluated based on the following components:

Component	% of marks
Understanding of the problem / concepts	25
Adhering to methodology.	20
Quality of presentation and demonstration (Demonstration is optional)	15
Quantum of work / effort	30
Organization and content of mid-term report	10

- iii. End Semester Assessment of Project:** A board of two examiners appointed by the University shall conduct ESE evaluation. The evaluation shall be based on the report, presentation of the work, demonstration of the work (optional) and a detailed viva voce based on the work carried out. A candidate will not be permitted to attend the Project evaluation without duly certified project reports. Also a project will be evaluated only if the candidate attend the ESE presentation and Viva voce on the scheduled date and time. A board shall evaluate a maximum of 10 candidates in a day. The ESE evaluation shall consist of the following components:

Component	% of marks
Understanding of the problem/requirements/ concepts related to the project	15
Adhering to methodology (Software engineering phases or research methodology) and the candidates understanding of the components of methodology	15
Quality of Modeling of the problem and solution/ database design / form design / reports / testing (For research projects - relevance /novelty of the work(s)/ use of data/ proposal of new models /analysis of algorithms/ comparison and analysis of results /findings)	20
Quality of presentation / demonstration	15
Quantum of work / effort - assessed through the content of report, presentation and viva.	25
Organization and content of report	10

- iv.** A student shall be declared to pass in the Project report course if she/he secures minimum 40 % marks of the aggregate and 40% separately for external.
- v.** If a candidate fail in the evaluation of Project, he/she has to repeat the project course along with the next batch and undergo both CA and ESE. *Unlike theory/practical courses, the CA mark will not retained.*
- vi.** There shall be no improvement chance for the marks obtained in the Project course.

3.5 Seminar: Each student shall select a relevant topic, prepare a seminar report and give a presentation (30 to 45 minutes), under the guidance of a faculty member. The evaluation of seminar

is 100% internal and components and mode of evaluation shall be formulated by the department council (May include components like content, Presentation, interaction and structure of report).

3.6 VIVA VOCE: A general Viva Voce covering all courses in the Programme shall be conducted in the fourth semester. The Viva voce shall be conducted by two external examiners. The Viva voce *shall not be clubbed* with the project evaluation. The details of the mode of conduct and evaluation of Viva Voce shall be decided by the BOE.

4. GRADING SYSTEM

Seven Point Indirect Relative grading system:

Evaluation(both internal and external) is carried out using Mark system .The grading on the basis of a total internal and external marks will be indicated for each course and for each semester and for the entire programme.

The guidelines of grading is as follows-

% of Marks (CA+ESE)	Grade	Interpretation	Range of grade points	Class
90 and above	O	Outstanding	9-10	First class with Distinction
80 to below 90	A	Excellent	8-8.9	
70 to below 80	B	Very good	7-7.9	First class
60 to below 70	C	Good	6-6.9	
50 To below 60	D	Satisfactory	5-5.9	Second class
40 to below 50	E	Pass/Adequate	4-4.9	Pass
Below 40	F	Failure	0-3.9	Fail

$$\text{S.G.P.A} = \frac{\text{SUM OF CREDIT POINTS OF ALL COURSES IN THE SEMESTER}}{\text{TOTAL CREDITS IN THAT SEMESTER}}$$

$$\text{CREDIT POINT} = \text{GRADE POINT (G)} \times \text{CREDIT (C)}$$

$$\text{C.G.P.A} = \frac{\text{Sum of credit points of all completed semesters}}{\text{Total credits acquired}}$$

$$\text{OGPA} = \frac{\text{Sum of credit points obtained in four semesters}}{\text{Total credits (80)}}$$

PASS REQUIREMENT:

COURSE:

A CANDIDATE SECURING E GRADE WITH 40% OF AGGREGATE MARKS AND 40% SEPARATELY FOR ESE FOR EACH COURSE SHALL BE DECLARED TO HAVE PASSED IN THAT COURSE.

SEMESTER

Those who secure not less than 40 % marks (both ESE and CA put together) for all the courses of a semester shall be declared to have successfully completed the semester.

The marks obtained by the candidates for CA in the first appearance shall be retained (irrespective of pass or fail)

The candidates who fail in theory unit shall reappear for theory unit only, and the marks secured by them in practical unit, if passed in practical, will be retained.

A candidate who fails to secure a minimum for a pass in a course will be permitted to write the same examination along with the next batch.

For the successful completion of a semester, a candidate should pass all courses and secure a minimum SGPA of 4. However a student is permitted to move to the next semester irrespective of his/her SGPA. A student will be permitted to secure a minimum SGPA of 4.00 required for the successful completion of a Semester or to improve his results at ESE of any semester, by reappearing for the ESE of any course of the semester concerned, along with the examinations conducted for the subsequent admission

IMPROVEMENT:

A candidate who secures minimum marks (40 %) for a pass in a course will be permitted to write the same examination along with the next batch if he/she