

**SCHOOL OF FORENSIC SCIENCES**  
**ACADEMIC REGULATIONS**  
**M.Sc. Cyber Security and Digital Forensics (2020)**



**Centurion**  
**UNIVERSITY**

***Shaping Lives...  
Empowering Communities!***

# CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENT

## SCHOOL OF FORENSIC SCIENCES

### M.Sc. Cyber Security and Digital Forensics

#### PREFACE

Objective of the programme is to strengthen the foundations of cyber forensics at national & International level. The following are the objectives of this programme:

- a) To prevent or mitigate harm to—or destruction of—computer networks, applications, devices, and data. For cybersecurity strategy to succeed, it must continually evolve to keep pace with the shifting strategies and technologies used by hackers.
- b) The goal of computer forensics is to examine digital data with the aim of identifying, preserving, recovering, analyzing and presenting facts and opinions about the digital information. It is used in both computer crime and civil proceedings.
- c) To identify evidence in a short time frame, and estimate the overall menace and impact of the malicious cyber-attack.
- d) Activity on the victim user or organization and suggest for protection against the attack.
- e) To emphasize the importance of technical methods in cybercrime investigation.
- f) To publicize information on the developments in the field of digital forensic sciences.
- g) To highpoint the importance of digital forensic for resolution of the modern society.
- h) To review the steps necessary for achieving highest excellence in digital forensic.
- i) To generate talented human resource, commensuration with latest requirements of information security.
- j) To provide a platform for students and security professionals to exchange views, chalk-out collaborative programs and work in an all-inclusive manner for the advancement of digital science.
- k) To train knowledge and skill of cyber forensics so that it can be applied in digital forensic lab.

#### **1. Academic Regulations & Policies:**

This section gives an overview of the different Academic Rules and Regulation to be followed in the Centurion University of Technology and Management (CUTM) for M.Sc. Cyber Security and Digital Forensics. It contains information on eligibility criteria, including Registration, Selection of Subjects, Grading System, Examination Policy, Attendance Policy and Academic Rules applicable at CUTM.

#### **2. Minimum qualification for admission:**

Qualification for M.Sc. Cyber Security and Digital Forensics is B.e, B.tech in CE/IT/EC/CS or BCA or B.SC. IT/CS/Maths/Physics or equivalent with atleast with minimum 50% aggregate.

### **3. Duration of the program**

The Programme for M.Sc. Cyber Security and Digital Forensics shall extend over a period of four semesters (two academic years).

### **4. Medium of instruction and examinations**

Medium of instruction and examination shall be in English.

### **5. Working days in each semester**

Each year shall be divided into two Semesters – Autumn Semester (July to December) and Spring Semester (January to June). Students normally join in Autumn Semester. The number of teaching weeks in each semester will be 15 to 18 with a minimum of 90 teaching days, excluding the period of examination.

Each year the University will draw out a calendar of academic and associated activities. Detailed curricula and syllabi will be as decided by the Academic Council with provision for required modification.

### **6. Registration, Selection of Subjects & Time Table**

This section gives the details of the University Registration Card, Registration to different Subjects and Time Table for Course work. Immediately after admission, the students' particulars are to be stored in ERP/MIS of the University. Any information related to the students required by any Department/Entity will be collected from the ERP/MIS only.

#### **University Registration Card**

A Student is issued University Registration Card after admission process. University Registration number continues to be his/her Registration Number for all examinations during his/her tenure of study. This card is also essential for attending classes in a college and appearing in examinations. This is an IMPORTANT document and the student must take care of it. Duplicate University Registration Card will be issued only after recommendation by the Dean of respective college on paying the prescribed fee.

#### **Subject-wise Registration**

All registered students of the University have to register for each of the subjects they are required to study before commencement of a semester. A student has to apply in a specified format for subject wise registration for each semester with prescribed fees to his/her college

Dean. The same will be scrutinized and registration confirmation will be displayed on the notice board and in MIS. The following methodology is adopted for registration procedure.

- a) Head of the Departments to submit the titles of the subjects to be offered, for all the Baskets, to the Dean.
- b) The MIS section has to upload all these subjects in the MIS/ERP.
- c) One week slot will be provided to the students for counselling & registration in every semester.
- d) Immediately after admission in the first year, each faculty mentor will be allotted 20 students for continuous guidance.
- e) It is the responsibility of faculty mentor and concerned HOD to counsel and make the students understand the CBCS and select the subjects of their choice (aligned to their goal). Student-wise tracker will be developed at the beginning of the first semester. It will consist of a portfolio of subjects keeping in mind student's goal (i.e. employment/higher education/entrepreneurship). Colleges will prepare slots for students and their faculty mentors for this purpose.
- f) The Mentor concerned can make note of the subjects selected by his/her students from the tracker and then the students are guided to freeze these in MIS.
- g) A student can register for more than normal credits in a semester. He/she can judiciously credit Subjects in advanced topics, interdisciplinary areas and undertake skill Subjects and project works.
- h) A Student is allowed to register for a subject only after clearing its pre requisites, if any.
- i) After the choice lock, the time table will be finalized. Care will be taken to accommodate maximum number of students for the subject choices locked. Wherever it is not feasible, concerned student(s) will be guided to defer the subject chosen to future semesters and register another feasible subject.
- j) If any student does not register during the given slot or joins the college later, then he/she will have to exercise choice based on the time table.
- k) Any student falling short of credits for graduation after the final semester examination, has the chance to complete the required shortfall by appearing the examination organized before the convocation of his/her batch.
- l) MIS will show cumulative student credits under "My Credits". A report on student wise credits can be obtained from MIS for documentation.

### **Time Table for Instructions**

Department will provide Time Table for the subjects being offered in a semester after the subject registration for that semester. The time table will indicate the name of the Subject facilitators.

## **7. Program/Course credit structure**

As per the Credit Based Semester System, certain quantum of academic work viz. theory classes, tutorial hours, practical classes, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other academic, co/extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week.

## 8. Programme Structure:

<b>Semester I</b>			
<b>Code</b>	<b>Course</b>	<b>Course Type (Lecture- Tutorial- Practice)</b>	<b>Credit</b>
<b>CUTM1618</b>	Principles of Information Security	4-0-0	4
<b>CUTM1619</b>	Digital Forensics	4-0-2	6
<b>CUTM1620</b>	Computer Networks	4-0-2	6
<b>CUTM1621</b>	Cyber Crime & Investigations	4-0-0	4
<b>CUTM1622</b>	Intellectual Property Rights	4-0-0	4
	<b>Total Credits</b>		<b>24</b>

<b>Semester II</b>			
<b>Code</b>	<b>Course</b>	<b>Course Type (Lecture- Tutorial-Practice)</b>	<b>Credit</b>
<b>CUTM1623</b>	Number theory & Cryptography	4-0-0	4
<b>CUTM1624</b>	Advanced Information Security	4-0-0	4
<b>CUTM1625</b>	Cyber Forensics	4-0-2	6
<b>CUTM1626</b>	System and Network Security	4-0-2	6
<b>CUTM1627</b>	Cyber Law	4-0-0	4
	<b>Total Credits</b>		<b>24</b>

<b>Semester III</b>			
<b>Code</b>	<b>Course</b>	<b>Course Type (Lecture- Tutorial-Practice)</b>	<b>Credit</b>
<b>CUTM1628</b>	Mobile Security Analysis	4-0-2	6
<b>CUTM1629</b>	IT Governance, Risk and Compliance	4-0-0	4
<b>CUTM1630</b>	Business Continuity Planning (BCP) And Disaster Recovery (Dr)	4-0-0	4
<b>CUTM1631</b>	Penetration Testing & Vulnerability Assessment	4-0-2	6
<b>CUTM1632</b>	Digital Frauds	4-0-0	4
	<b>Total Credits</b>		<b>24</b>

<b>Semester IV</b>			
<b>Code</b>	<b>Course</b>	<b>Course Type (Lecture-Tutorial- Practice)</b>	<b>Credit</b>
<b>CUTM1633</b>	Project/Dissertation		<b>24</b>

**Total Credits for M.Sc. Cyber Security and Digital Forensics : 96**

### **9. Credit assignment**

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and /or tutorial (T) hours, and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and tutorial hours, and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having three lectures and one tutorial per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

### **10. Grading System & Degree Requirement**

Qualification	Grade	Score on 100 Percentage Point	Point
Outstanding	‘O’	90 & above up to 100	10
Excellent	‘E’	80 & above but less than 90	9
Very Good	‘A’	70 & above but less than 80	8
Good	‘B’	60 & above but less than 70	7
Fair	‘C’	50 & above but less than 60	6
Pass	‘D’	40 & above but less than 50	5
Failed	‘F’	Below 40	2
Malpractice	‘M’	---	0
Absent	‘S’	---	0

### Definition of Terms

The terms used in the above table are defined as follows:

- a) Point – Integer equivalent of each letter grade
- b) Credit – Integer signifying the relative emphasis of individual Subject item(s) in a semester as indicated by the course structure and syllabus
- c) Credit Point – (b) multiplied by (a) for each Subject item
- d) Credit Index – Sum of Credit Points, [i.e. Sum of (c)] of Subject items in a semester
- e) Grade Point – (c) / (d)
- f) Grade Point Average – Represented by Grade Point Indices as per section 1.4.3.
  - Semester Grade Point Index (SGPI)
  - Cumulative Grade Point Index (CGPI)

#### Grade Point Index

The formulas for calculating the SGPI and CGPI are as follows:

$$SGPI = (Credit\ Index) / (Sum\ of\ Credits\ for\ a\ Semester)$$

$$CGPI = (Sum\ of\ Credit\ Index\ of\ all\ previous\ Semester) / (Credits\ of\ all\ previous\ Semesters)\ up\ to\ a\ semester$$

## 11. Examination Policy



The section on Examination Policy gives specific guidelines, rules of the Examination and expected Examination Code of Conduct.

### **Eligibility for Examinations**

The eligibility criteria for appearing in the examinations of CUTM are as follows:

- a) A student has to maintain overall 75% attendance to be able to write all papers at end-semester examinations in a semester. The attendance is considered from the date of commencement of classes as per academic calendar of the university and is calculated based on the total number of working days available in a semester.
- b) The schedule of classes shall be notified through a time table before the beginning of the classes in the Semester. Attendance record will be compiled at the time of each class test and the students with poor attendance will be informed through notification. The guardian may be informed through a letter/SMS. Letters will be issued to the student and the guardian before he/she is debarred for appearing at University examination due to shortage of attendance. Examination Section shall be informed about the list of eligible/ineligible students for the Examination. Dean will monitor students' attendance.
- c) Concessions: A student who has been absent for short periods on health ground or due to participation in cultural, sports and other academic/official assignments in the interest of students, with prior written permission of the Dean/Head of the Department shall be permitted a concession of 10% in attendance (i.e. will be eligible for appearing in examination with a minimum of 65% attendance).
- d) A student will be allowed to appear in the Semester Examination in those theory subjects where his/her attendance is not less than 75% in case he/she does not have 75% overall attendance.
- e) A candidate shall be allowed in a Semester Examination only after he/she is issued an Admit Card for the relevant examination by the University through the Examination Section of the College.
- f) Students who have been found to indulge in malpractice during examination will be awarded 'M' grade in that subject. The University will take appropriate disciplinary action, as per rule.
- g) A student who is absent in any subject(s) for which he/she has registered will be awarded 'S' grade. He/she is permitted to appear in those Subjects in subsequent semester examinations after compensating for the course work missed and obtaining due permission from the respective College and University.
- h) A student may register to appear in a semester examination which she/he has not passed, with appropriate fee.

### **Evaluation System**

The University has a continuous evaluation system for each type of Subjects (Theory, Practice, Project, Theory & Practice, Theory & Project, Practice & Project, Theory, Practice & Project). For this purpose the university holds the following examinations.

- End Semester Examinations at the end of the Odd and Even Semester course work
- Examination on Demand (EOD) to be notified from time to time. In general, there will be one EOD in each semester, in addition to a special EOD towards the end of Academic Year.
- All Internal marks will be recorded in ERP and uploaded to EMS. All external marks to be sent to QA cell in a sealed cover as per the direction of QA.
- Grading pattern to be followed as specified in the Subject Depository.
- Pass marks for Theory, Practice and Project will be as follows:

Theory	Practice	Project
40%	50%	50%

Student has to get pass percentage in individual components

- In case, a student gets "F" grade in theory course, he/ she will only appear for External component as the internal marks are locked. But, in case of combination courses, the student will have to appear for all the external components (theory + practice + project), even if the student has cleared in some/ failed in some of the components.
- Registration of a paper having pre-requisite condition indicates that, a student will only be allowed to register provided he/she has cleared the pre-requisite paper at the time of registration.
- A student may apply for rechecking and photocopy as per the norms.
- A student can appeal against the rechecking result(s) with a fee of Rs 5000/- per paper. The fee will be refunded to the student in case the revised result (marks) is 10% or more than the earlier rechecked marks.

S. No.	Course Type	Total Marks for Assessment	Internal Evaluation			External Evaluation		
			Theory	Practice	Project	Theory	Practice	Project
1	Theory	100	40	-	-	60	-	-
2	Practice	100	-	50	-	-	50	-
3	Project	100	-	-	50	-	-	50
4	Theory + Practice	100	20	30	-	30	20	-
5	Theory + Project	100	20	-	25	30	-	25
6	Theory + Practice	300*	40	50	50	60	50	50

	<b>+ Project</b>							
<b>7</b>	<b>Practice + Project</b>	<b>200</b>	<b>-</b>	<b>50</b>	<b>50</b>	<b>-</b>	<b>50</b>	<b>50</b>

### Evaluation Systems:

#### 1. Theory + Practice:

	<b>Component</b>	<b>% of Marks</b>	<b>Method of Assessment</b>
<b>Internal Examination</b>	Internal Theory	30	Written examination
	Assignment	5	Report or Presentation + Learning Record
	Attendance	5	Based on class attended
<b>External Examination</b>	External Theory	60	Written examination
<b>Total</b>		<b>100</b>	

#### 2. Theory:

	<b>Component</b>	<b>% of Marks</b>	<b>Method of Assessment</b>
<b>Internal Examination</b>	Internal Theory	30	Written examination
	Assignment	5	Report or Presentation + Learning Record
	Attendance	5	Based on class attended
<b>External Examination</b>	External Theory	60	Written examination
<b>Total</b>		<b>100</b>	

#### 3. Practice:

	<b>Component</b>	<b>% of Marks</b>	<b>Method of Assessment</b>
<b>Internal Examination</b>	Internal Practice	50 (40+10)	Lab work + Learning Record
<b>External Examination</b>	External Practice	50	Lab work
<b>Total</b>		<b>100</b>	

### **Assessments of Projects:**

There will be Process and Output of the Project. Process will be dealt and marks will be given by Internal Faculty/ Guide. Output will be evaluated by External Examiner (External Examiner + Faculty committee of the Dept.). Internal Evaluation is 50% and External Evaluation is 50%.

### **Examination & evaluation systems for Back Papers**

#### Back paper (Theory)

- a. Option 1: Students can re-register back paper subject during a semester (if it is offered in that semester), attend all class appear internal examination and end semester examination by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session.
- b. Option 2: Student can appear EOD for external component only. This external mark along with previous internal marks scored by student will be considered for final grade. No scope for change in internal marks.

#### Back Paper (Lab/Practice/Workshop)

- a. Option 1: Student can re-register back paper during a semester (if it is offered in that semester) by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session.
- b. Option 2: Student can re-register for summer course, conduct all Lab experiments and appear internal & external examination by paying requisite registration fee per subject. The previous internal/external marks will be invalid. The student will be evaluated and grades will be awarded as per the marks scored in the current session. Student has to pay exam fee as applicable.

## **12. General**

- a. The academic regulations should be read as a whole for the purpose of interpretation.
- b. In case of doubt or ambiguity in the interpretation of the above regulations, the decision of the Vice-Chancellor is final.
- c. The University may change or amend the academic regulations at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the University.