

# **Information Bulletin**

## **2021-2022**

**M. Sc. Cybersecurity & Digital Forensics**  
**M. Tech. Cybersecurity & Digital Forensics**



**NAAC 'A+'**

### **Centre For Cyber Forensics (CCF)**

P.G. Department of Mathematics,  
Utkal University, Vani Vihar, Bhubaneswar - 751004  
e-mail: [ccfutkal@gmail.com](mailto:ccfutkal@gmail.com)  
Tel: 9337339522 / 9132172144 (WA)

# UTKAL UNIVERSITY

## INTRODUCTION

Utkal University, established in the year 1943, is the seventeenth oldest University in India. Its present campus at Vani Vihar is located on a sprawling 399.9-acre area in the heart of Bhubaneswar beside the National Highway No.5, connecting Kolkata and Chennai. The foundation stone of the campus was laid by Dr. Rajendra Prasad, the first President of India, on 1st January 1958, and the campus was inaugurated by Dr. S. Radhakrishnan, the second President of India, on 2nd January 1963. A teaching-cum-affiliating university, Utkal University at present has twenty-seven Post-Graduate Departments located in its campus for studies and research in the disciplines of Science, Humanities, Business Administration, Social Sciences, Law and Commerce. The total number of students in the P. G. Departments of the campus at Vani Vihar is about 5,000. Utkal University is the largest affiliating university in the country having 381 affiliated general colleges including 16 Autonomous Colleges, 100 Professional Colleges, 9 Law Colleges and 7 Medical Colleges, which include 2 Homeopathic, 1 Ayurvedic, 2 Dental and 2 Allopathic Medical Colleges.

## **Centre for Cyber Forensics (CCF)**

*“Cyber Forensics-That’s What We Do”*

The Centre for Cyber Forensics is an institution developed by the academia and industry specialists with decades of experience and expertise in Cybersecurity, Digital Intelligence and Forensics. The influence of technological improvements on human existence would be incomplete if Information Security did not play a role on all dimensions. As a result of the pervasiveness of information technology, there is a high need for education in the subject. The continual increase in the number of students choosing to specialise in information technology demonstrates this. Education in Cyber Forensics teaches knowledge that may be used to meet the demands of users in an organisational and social environment.

Also, research in the department aiming on creating and evaluating innovative learning experiences, inspired by educational principles and technical progress. The key areas of research of the department include Cybersecurity, semantic web, data mining, software reliability, wireless sensor networks, network security, big data analytics, IoT, Incident Response management, Digital Forensics and Cloud Computing. Students are motivated to pursue multi-disciplinary research projects on long term basis jointly with other department students.

## VISION & MISSION:

The CRCF's objective is to improve the efficiency and skill of law enforcement agencies in dealing with cybercrime investigations using predictive, proactive, and reactive measures. The goal of the CRCF is to assist law enforcement agencies and other government organisations to develop domestic cyber-crime and security technology platforms.

We take a methodical approach to conducting studies on the gaps and problems that government bodies, including law enforcement agencies, face in the broader spectrum of cyber security, cybercrime, and digital forensics implications, and we develop advanced methods and tools to counter large-scale, sophisticated cyber threats.

## POST-GRADUATE DEPARTMENT

P. G. Departments	Year of Establishment	Degree Strength
1. M.Sc. Cybersecurity & Digital Forensics	2021	32
2. M.Tech. Cybersecurity & Digital Forensics	2021	32

### AN ABSTRACT OF GUIDELINES FOR FUNCTIONING OF SPONSORED COURSE UNDER PPP MODE PG TEACHING DEPARTMENTS:

1. The University, by virtue of the powers vested in it under section 3(5)(a), 12(2)(d) of the Orissa Universities Act, 1989 and under the statute 252 (4)(g) of the Orissa Universities First Statutes, 1990 read with Statute 23, has instituted courses to be offered to eligible students under P.G. Council of the University and the Constituent Colleges of the University. Such courses are called "SPONSORED COURSES".
2. A Sponsored Course shall, unless otherwise specified, be managed under the administrative control of a Post-Graduate Department.
3. A candidate may apply in downloaded form given at the last page of the bulletin and deposit the requisite fees Rs.600/- (Rupees six hundred) at the corresponding department through Bank Draft drawn in favour of **Comptroller of Finance, Utkal University** payable at S.B.I/Syndicate Bank of Utkal University Campus Branch, Vani Vihar.
4. The application forms accompanied by necessary documents shall be submitted by the candidates to the Course Coordinators/Directors of the Department.
5. The rules relating to the reservation of the seats in the regular courses followed by the P. G. Council shall be applied to the reservation of seats in the Sponsored Courses. In case a reserved seat in a particular category is not filled up, the seat will be converted into a general one.
6. The rules of admission as formulated by the Governing Council in case of Schools and P. G. Council in case of other courses shall be followed.

7. The students of a Sponsored Course shall be issued identity cards by the respective Departments and Library cards by the University Library (Parija Library).
8. Students of integrated / Self-financing courses cannot claim admission in any of the P.G. Hostels.
9. The students of a Sponsored Course are not entitled to be members of the Students' Council, Athletic Society and Dramatic Club of the University and no fees for such purposes shall be collected from them.

## **ENTRANCE TEST & ADMISSION NOTIFICATION, 2021-22**

Online applications are invited for admission into Sponsored Courses for the session 2021-22. Students passed / awaiting Final examinations results can also apply for the entrance tests of Sponsored Courses. The details of eligibility for admission into a particular course are given in the respective Programmes.

## **IMPORTANT DATES FOR SPONSORED COURSES**

- Availability of online Application Form – 30.12.2021
- Last date of Online submission – 20.01.2022
- Download of Admit Cards shall be during – 21.01.2022
- Entrance Test – 22.01.2022
- Result Announcement – 24.01.2022
- Date of Admission – 25.01.2022 and 27.01.2022
- Induction and Start Class – 28.01.2022
- Submission of the hard copy of final online applications along with relevant documents- to be submitted on or before the date of their Entrance Tests at their respective Departments.
- See the website for details on date, time and venue (to be uploaded).

## **HOW TO APPLY**

Visit Utkal University website at [www.utkaluniversity.nic.in](http://www.utkaluniversity.nic.in) for procedure of E-admission 2021-22, Guidelines for Application and deposit of Fees, Information Bulletin, Date, Time and Venue of Entrance Tests before filling up of the Forms. In case of any query write to – [helpdesk.uueadmission@gmail.com](mailto:helpdesk.uueadmission@gmail.com) / [ccfutkal@gmail.com](mailto:ccfutkal@gmail.com)

**NB:** No admission shall be given to a candidate for the second time.

## **ADMISSION PROCEDURE**

Admission to the Sponsored Courses shall be made by adopting **Career-Entrance (MCQ Based)** method and on the basis of criteria fixed by the respective Departments. Application

procedure, eligibility, reservation policy, documents to be submitted with the application form and at the time of admission is same as P.G. Courses. For detailed course structure, visit the website of the University/Department.

### **FEES PAYABLE FOR ADMISSION TO SPONSORED COURSES.**

Admission fee	- Rs. 100/-
Tuition fee (Annual)	- Rs. 180/-
Identity Card	- Rs. 50/-
Medical fee	- Rs. 10/-
Insurance fee (inclusive of service tax)	- Rs. 380/-
Student Welfare fund	- Rs. 20/-
Electrical charges	- Rs. 200/-
Library Development fee (for 1 yr. course)	- Rs. 100/-
(2/3 yrs. Programme)	- Rs. 500/-
(5 yrs. Programme)	- Rs. 750/-
Sports Council fee	- Rs. 50/-
CDC fee	- Rs. 10/-
NCC fee	- Rs. 5/-
NSS fee	- Rs. 20/-
Multi-gym fee	- Rs. 10/-
University Registration fee	- Rs. 150/- (For other University students)
Recognition fee ((for other University students)	- Rs. 10/-

**\* THE above fees shall be collected over and above the course fee.**

### **SELECTION PROCEDURE**

Selection of candidates for admission shall be made on the basis of an entrance test to be conducted by the Course Director in the **P.G. Department of Mathematics**, Utkal University on **22/01/2022 (11:30 AM)**. The questions of the entrance test for **both the courses M. Sc. And M. Tech. Cybersecurity & Digital Forensics** shall be of objective type on the following topics:

The syllabus of entrance test is divided into two parts: -

- I. **40%** would consist of Reasoning, English Grammar, General Knowledge and Mathematics,
- II. **60%** would consist of basics of Computer Science/IT.

### **RESERVATION AND WEIGHTAGE**

The reservation and weightage policy for candidates belonging to SC, ST, PH, Children of Ex-servicemen of the IAF, Children of serving defence personnel, Sports or Games personnel categories shall be applicable as per the rules followed by the P.G. Council.

### UNIVERSITY LIBRARY:

The University Library policy for candidates shall be applicable as per the rules followed by the P.G. Council.

## SPONSORED COURSES UNDER PPP MODE

### 1. **M.Tech. Cybersecurity & Digital Forensics:** Two Years (Four Semesters) Full Time.

Year of Establishment	: 2021-22
Venue	: P.G. Department of Mathematics, Utkal University.
Number of Seats	: 32 (Thirty-Two)

### ELIGIBILITY CRITERIA:

- I. M.Sc. in Math /Statistics /Physics /Cybersecurity & Digital Forensics /Electronics Science or M.Sc. in Computer Science (CS) /Information Technology (IT) / Information Science & Telecommunication (IST) or Master of Computer Application (MCA) or any other qualification considered equivalent.
- II. Bachelor's Degree in Engineering /Technology / or any other qualification considered equivalent (such as AMIEE or DOEACC 'B' Level) from any Recognised University.

### SELECTION PROCEDURE:

The selection would be based on the career & entrance score (Entrance Test conducted by concerned Department (Centre for Cyber Forensics)).

### HOW TO APPLY:

Download application form from the website [www.utkaluniversity.nic.in](http://www.utkaluniversity.nic.in) filling up the application form along with a DD of Rs.600/- in favour of **Comptroller of Finance, Utkal University** payable at S.B.I/Syndicate Bank of Utkal University Campus Branch, Vani Vihar & send it to Centre for Cyber Forensics, P.G. Department of Mathematics, Utkal University, Vani Vihar, Bhubaneswar – 751004. Last date of receiving of the application form: 20.01.2022 by 05.00 PM.

Course fees	: ₹ 70000/- (Annually).
Contact Persons	: Mr. Gyana Ranjana Panigrahi, Centre for Cyber Forensics.
Contact	: 9337339522 / 9132172144 (WA), <a href="mailto:ccfutkal@gmail.com">ccfutkal@gmail.com</a>

## **CURRICULUM HIGHLIGHTS:**

### **Semester-I**

Mathematical Foundations for Cybersecurity  
Cyber Law, Policies and Compliance  
Introduction to OS and Scripting  
Network Security and Forensics  
Number Theory & Cryptography  
Data Structure & Algorithm  
Cyber Forensics Lab-I

### **Semester-II**

Forensic Application Development and Networking Concepts  
Machine Learning in Cybersecurity  
Introduction to Intelligent System  
Threats to Web Infrastructure, its Defence and Resilience  
Android Security (OWASP)  
IoT Security  
Cyber Forensics Lab-II

### **Semester-III**

Cryptocurrency & Blockchain  
Social Network Analysis and Investigation (Or) Disaster Recovery & Risk Management  
Critical Infrastructure Security (or) Cloud Security & Forensics.  
Malware Analysis & Reverse Engineering  
Banking Technology and Management  
Forensic Data Exploration and Visualization  
Minor Project and Viva Voce

### **Semester-IV**

Dissertation

## **2. M.Sc. Cybersecurity & Digital Forensics: Two Years (Four Semesters) Full Time.**

<b>Year of Establishment</b>	: 2021-22
<b>Venue</b>	: P.G. Department of Mathematics, Utkal University.
<b>Number of Seats</b>	: 32 (Thirty-Two)

## **ELIGIBILITY CRITERIA:**

- i. B.Sc. with Math /Statistics /Physics /Cybersecurity & Digital Forensics / Electronics Science as a subject or B.Sc. with Computer Science (CS) /Information Technology (IT) / Information Science & Telecommunication (IST) /Information Technology and

Management (ITM) or Bachelor in Computer Application (BCA) or any other qualification considered equivalent.

- ii. Bachelor's Degree in Engineering /Technology / or any other qualification considered equivalent (such as AMIEE or DOEACC 'B' Level) from any Recognised University.

## **SELECTION PROCEDURE:**

The selection would be based on the career and entrance score (Entrance Test conducted by Department).

## **HOW TO APPLY:**

Download application form from the website [www.utkaluniversity.nic.in](http://www.utkaluniversity.nic.in) filling up the application form along with a DD of Rs.600/- in favour of **Comptroller of Finance, Utkal University** payable at S.B.I/Syndicate Bank of Utkal University Campus Branch, Vani Vihar & send it to Centre for Cyber Forensics, P.G. Department of Mathematics, Utkal University, Vani Vihar, Bhubaneswar – 751004. Last date of receiving of the application form: 20.01.2022 by 05.00 PM.

**Course fees** : ₹ 60000/- (Annually).

**Contact Persons** : Mr. Gyana Ranjana Panigrahi, Centre for Cyber Forensics.

**Contact** : 9337339522 / 9132172144(WA), [ccfutkal@gmail.com](mailto:ccfutkal@gmail.com)

## **CURRICULUM HIGHLIGHTS:**

### **Semester-I**

Principles of Information Security  
Mathematical Foundations for Cybersecurity  
Introduction to forensic sciences and law  
Digital Forensics Part – I  
Data Structure & Algorithm  
Python for Cybersecurity  
Cyber Forensic Lab-I

### **Semester-II**

Discrete Mathematical Structures  
Computer Networks  
Operating System Security  
Digital Forensics Part – II  
Number theory & Cryptography  
Cybersecurity Lab-II  
Digital Forensic Lab-II



### **Semester-III**

Server Administration & Security

Cyber Law and IRM

Mobile Security and Forensics

Ethical Hacking and Countermeasures: Threats and Defense Mechanisms

Machine Learning

Minor Project

Cyber Forensic Lab-III

### **Semester-IV**

Advanced Java

Malware Analysis (Or)

IT Asset Security

Comprehensive Viva-Voce

Project/Dissertation

## **COLLABORATIVE INITIATIVES**

The department is looking forward for academic collaboration with NFSU and also decides for future academic pacts with ISEA, NIELIT, CDAC, EC-Council through academic alliance program. Dell, Microsoft, CISCO, TCS, Symantec, Mahindra Satyam, IBM and ORACLE are other corporate giants with which our department will collaborate for the benefit of students to carry out internships and project work.

## **SCOPE & PLACEMENTS**

Department intends to provide internship and job placement support in the 2<sup>nd</sup> year. MNC companies may tie up and can visit to our campus in the 4<sup>th</sup> semester only for internship placement. Adequate information and training will be provided to students in order to place them in different organizations. Department will also organize campus/off campus/online placement drives and will assist the students to acquire jobs at the end of the programme.

## **CAREER PROSPECTS**

A PG Degree in this domain may be an unusual choice for career, but due to world-wide growth, the vast nature of the subjects and advancements in this subject, there are more than a handful of options to pursue. There are many openings in both Govt. and private sectors. Here is a brief list of careers one can consider taking up in India and the agencies that hire forensic experts.

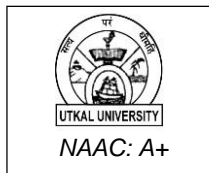
- Security Specialist
- Security Administrator
- Security Architect
- Security Analyst
- Security Auditor
- Security Consultant
- Security Engineer
- Cryptographer

- Chief Information Security Officer
- Vulnerability Assessor
- Incident Responder
- Forensic Expert
- Penetration Tester
- Source Code Auditor
- Security Manager
- Cryptanalyst

## **RECRUITMENT AGENCIES IN INDIA**

There are several recruitment agencies in India. And this trend is increasing day by day. But still there is huge dearth of qualified manpower. Some agencies are listed below:

- Intelligence Bureau (IB)
- Central Bureau of Investigation (CBI)
- Central Forensic Labs
- State Forensic Labs
- Police Department
- Quality Control Bureau
- Banks
- Corporates
- Universities
- Defense/Army
- Private Detective Agencies
- Law Firms
- Insurance Companies
- Cyberops Infosec LLP.
- eSec Forte Technologies.
- Hicube Infosec Pvt. Ltd.
- K7 Computing Pvt. Ltd.
- Quick Heal Technologies Ltd.



# Centre for Cyber Forensics (CCF)

For M. Sc. & M. Tech. Admission

P.G. Department of Mathematics, Utkal University,

Vani Vihar, Bhubaneswar - 751004

## APPLICATION FORM- 2021-22

**Select your Course:** M. Sc. Cybersecurity & Digital Forensics ☐  
 M. Tech. Cybersecurity & Digital Forensics ☐

<b>Application No:</b>			
<b>Personal Details:</b>			
<b>Full Name (in Block Letters):</b>		<b>Photo:</b>	<b>Signature:</b>
<b>E-mail ID:</b>	<b>Mobile No:</b>	<b>WhatsApp No:</b>	<b>Date of Birth:</b>
<b>Gender:</b>	<b>Category:</b>	<b>Nationality:</b>	<b>Religion:</b>
<b>Blood Group:</b>	<b>Mother Tongue:</b>	<b>Aadhaar No:</b>	<b>Father's Name:</b>
<b>Mother's Name:</b>	<b>Parents Mobile No:</b>		
<b>Emergency Contact:</b>			
<b>Full Name:</b>			
<b>Relationship with you in case of emergency contact:</b>		<b>Emergency Contact:</b>	
<b>Address for Correspondence:</b>			
<b>Present Address:</b>		<b>Permanent Address:</b>	
<b>Educational Qualification -: 10<sup>th</sup> / Secondary School Examination / Equivalent</b>			
<b>Board / University Name:</b>	<b>Name of the School / Institute:</b>	<b>Year of Passing:</b>	
<b>Total Marks:</b>	<b>Marks Secured:</b>	<b>% of Marks:</b>	<b>Division:</b>

<b>Educational Qualification -: +2 / Higher Secondary / Equivalent</b>			
<b>Board/University Name:</b>	<b>Name of the College/Institute:</b>	<b>Stream:</b>	<b>Division:</b>
<b>Year of passing:</b>	<b>Total Marks:</b>	<b>Marks Secured:</b>	<b>% of Marks:</b>
<b>Educational Qualification -: Graduation/B.TECH. /BE/ Equivalent</b>			
<b>Board/University Name:</b>	<b>Name of the College/Institute:</b>	<b>Stream:</b>	<b>Year of passing:</b>
<b>Result Declared:</b>	<b>Total Marks:</b>	<b>Marks Secured:</b>	<b>% of Marks:</b>
<b>Division:</b>		<b>Semester Marks:</b>	
<b>Educational Qualification -: ( Post Graduation): MCA / M.Sc. / Equivalent</b>			
<b>Board/University Name:</b>	<b>Name of the College/Institute:</b>	<b>Stream:</b>	<b>Year of passing:</b>
<b>Result Declared:</b>	<b>Total Marks:</b>	<b>Marks Secured:</b>	<b>% of Marks:</b>
<b>Do you have any Work Experience?</b>		<b>Work Experience:</b>	
<p><b>DECLARATION BY THE CANDIDATE:</b> I hereby declare that all the particulars stated in this application are true to the best of my knowledge and belief. I have read the Information Brochure and I shall abide by the terms and conditions therein. In the event of suppression or distortion of any fact like suppressing the category or educational qualifications or nationality, etc. made in my application form, I understand that I will be denied the opportunity to admission and if already admitted, my admission/degree acquired is liable for cancellation. I understand that the decision of the Institution regarding my admission is final and I shall abide by the decision. Further, if admitted, I promise to abide by the rules and norms of discipline of the Institution.</p> <p><u>Signature of the Candidate</u></p>			
<b>Note : Print this application form to retain a copy for future reference.</b>			