



# Indian Institute of Information Technology Sri City, Chittoor

(An Institute of National importance under an Act of Parliament)

Advt. No: IIITS/Acad/Ph.D./2020/11/6018

21<sup>st</sup> November 2020

## PhD Admissions (Full-Time) - Spring 2021

Indian Institute of Information Technology Sri City Chittoor (IIITS) was established by Government of India as an Institute of National Importance under the Act of Parliament along with Government of Andhra Pradesh and Industry Partners-Sri City Foundation and Sri City Pvt. Limited.

IIITS is located in Sri City ([www.sricity.in](http://www.sricity.in)), a decade-old state of the art industrial city located about 60 KMs North of Chennai on “Chennai – Nellore – Kolkata highway” (AH45). Sri City is spread over 8000 acres encompassing a multi-product Special Economic Zone (SEZ), Domestic Tariff Zone (DTZ), Free Trade & Warehousing Zone (FTWZ) and Electronics Manufacturing Cluster. Sri City is hosting over 120 companies from 27 countries. The institute has access to the industries and social infrastructure available in Sri City through the Industry Partner.

Established in 2013, IIIT Sri City Chittoor (IIITS) has emerged to be one of the top institutes among its peers due to academic and research advancements. The institute presently offers UG programmes in two disciplines- Computer Science and Engineering (CSE) and Electronics and Communication Engineering (ECE). It is proposed to offer Minors in the UG programmes in thrust areas such as Cyber Security, Smart Manufacturing, AI & Machine Learning, FinTech, Cyber-Physical Systems, Data Analytics, and so on. IIITS has a significant focus on research demonstrated through sponsored projects and scholarly publications. The institute offers MS and PhD programmes in both disciplines.

IIITS envisions to be a globally known institution for IT education, research and development. The institute has special thrust to attract and retain talented faculty members who can make a mark in teaching and research at the international level. The current faculty members at IIITS are from leading universities from India and abroad with excellent teaching and research credentials.

**Candidates who got admission to PhD Programme (Full-Time) are eligible for the fellowship as per the institute/MHRD norms.**

### 1. PhD-Areas of Research:

**CSE:** Cognitive Modeling, Relational Pattern recognition, Blockchain Security, Cryptography and Security, Distributed Systems, Information Retrieval, Big Data Analytics and Visualization, NLP, Human-Computer Interaction, Web Security, Cyber Security and Privacy, Brain Computer Interface (EEG Signal Processing), Smart Systems and Human Interface, High performance computing, On chip communication, Cloud Computing Security, Network Security, Architectural

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Synthesis, Applied Soft Computing, Brain Computer Interface, Data Mining, Computer Vision, Pattern Recognition.

**ECE:** Protocols for Internet of Things (IoT), Cyber-Physical Systems (CPS), Optical devices and networks, Power semiconductor devices, Antennas on Electrically large Platforms, Passive Microwave components design for Wireless Applications, Sensor Technology, Microfabrication, MEMS and VLSI Technology, Flexible Electronics, Neuromorphic Computing, Bio-MEMS, Speaker recognition, Void activity detection, Unsupervised representation of speech signal.

## Eligibility:

- a) Master's and bachelor's degrees in CSE /ECE or related branches with a minimum of 60% (or above) aggregate marks (CGPA  $\geq$  6.5/10) in UG and PG for admission under OC/OC-EWS/OBC-NCL category and 55% aggregate (or above) marks or equivalent CGPA of  $\geq$  6.0 for SC/ST/PwD candidates.
- b) Direct PhD admission: Exceptional Candidates having B.E / B.Tech in CSE/ECE or related branches from CFTI with CGPA of 9.0 or above and demonstrated research potential by means of research papers, IPs and similar research outcomes may also be considered.

## PhD (Full-Time) Admission Process:

1. Candidates recommended by the Applications Scrutiny Committee will be called to appear for a written test\*.
2. The candidates shortlisted based on the written test performance need to appear for a personal interview before the Evaluation Committee.

\* Syllabus for the written test is given in Appendix I.

## **2. Application Fee:**

Application Fee of Rs. 500/- for OC/OC-EWS/OBC-NCL category and Rs. 200/- for SC/ST/PwD candidates (to be paid through SB Collect) and the transaction details must be enclosed along with soft copy of the application. The details on the payment through SB collect are given below.

## **3. Last date for all Applications:**

Candidates may submit the detailed application using the Google Form;  
<https://forms.gle/Jy5bR941IsHnNCHQA>

Last date for submission of applications via online with relevant documents is  
**8<sup>th</sup> January 2021.**

For any further queries, you may write an email to [phd.admissions@iiits.in](mailto:phd.admissions@iiits.in)

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## 4. Fee Payment Through SB Collect:

- Payment through State Bank Collect portal only
- Applicants have to visit **www.onlinesbi.com** and follow the process
- Click on State Bank Collect/accept terms and conditions
- Select - Andhra Pradesh
- Select - Educational institutions
- Select - Indian Institute of Information Technology Sri City Chittoor
- Select - Application Fee
- Enter Name & Application number/Select other details/Click on submit/choose your Payment
- Pay Application Fee
- Please download receipts generated in SB collect for record
- Please upload SB collect payment receipt while filling up the application form (Google Form link is given above) for the payment confirmation

## 5. Additional Information:

The Fee structure for the candidates who got admission (Full-Time) is given below. Admission fee and caution deposit has to be paid only when joining the PhD program. Further, applicable fees must be paid at the beginning of each semester.

### Fee Structure:

Fee Category	Amount
Admission Fee	Rs. 15000.00 (non-refundable) - one time payment
Caution Deposit	Rs. 15000.00 (refundable after successful completion of the program)
Tuition Fee	Rs. 36,000.00 per Semester
Hostel Fee	Rs. 25,200.00 per semester
Accidental insurance and other benefits	Rs. 1000.00 per annum
Mess Fee*	Rs. 24,000.00 per semester
Note:	
1. Hostel and Mess Fees are applicable only if the candidate is using the IIIT Sri City accommodation and Mess facility.	
2. These fees are subject to revisions from time to time.	
3. Hostel charges include Rent, Electricity and Maintenance charges (subject to actuals)	
*Mess Fee is subject to actuals.	

**Disclaimer:** The Institute reserves the right to accept/reject any or all applications without assigning any reason and also the institute reserves the right to modify/cancel the application/admission process at any point in time without assigning any reason.

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## Appendix I

### Syllabus for Written Test :

#### Computer Science and Engineering:

**Discrete Mathematics:** Propositional and First-order Logic. Sets, Relations, Functions, Partial Orders, and Lattices, Groups, Graphs: Connectivity, Matching, Coloring Combinatorics: Counting, Recurrence Relations, Generating Functions.

**Probability:** Random Variables. Uniform, Normal, Exponential, Poisson, and Binomial Distributions. Mean, Median, Mode, and Standard Deviation. Conditional Probability and Bayes Theorem.

**Computer Programming:** Programming in C, Scope of Variables, Loops, Functions, Structures, Pointers, Dynamic Memory Allocation, File Management.

**Data Structures:** Stacks, Queues, Linked Lists, Trees, Binary Search Trees, Binary Heaps, Graphs.

**Algorithms:** Searching, Sorting, Hashing. Asymptotic Worst-case Time and Space Complexity, Algorithm Design Techniques: Greedy, Dynamic Programming, and Divide-and-Conquer. Graph Search, Minimum Spanning Trees, Shortest Paths.

**Operating System:** Processes, Threads, Interprocess Communication, Concurrency, and Synchronization, Deadlock, CPU Scheduling, Memory Management, and Virtual Memory, File Systems.

**Computer Networks:** Concept of Layering, LAN Technologies (Ethernet), Switching, TCP/UDP and Sockets, Congestion Control, Application Layer, Network Security: Authentication, Basics of Public Key and Private Key Cryptography, Digital Signatures and Certificates

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## Electronics and Communication Engineering:

### Basic electronics

Circuit laws, theorems (superposition, thevenin and norton, max power), passive elements, transients (RL and RC circuits) and op-amps and applications, filters active and passive). Diode characteristics, half-wave and full-wave rectifier. Transistors, and amplifiers.

### Electromagnetics

Maxwell's equation, boundary conditions, time-varying fields, wave propagation in different media, transmission line basics, terminated transmission line and the special cases, antenna characteristics, Friis transmission equation and radar range equation.

### Digital logic design

Combinational logic: Logic circuits of Code Converters such as Binary to Gray Code Converter, BCD converter etc., K-maps, multiplexers, decoders, PROMs and PLAs  
Sequential circuits: Latches and flip-flops, counters and shift-registers  
Data converters: sample and hold circuits, ADCs and DACs; Memories.

### Signal Processing

Classification of signals and systems, basic deterministic signals, Linear systems and convolution, frequency domain representation of continuous and discrete signals, sampling theory, z-transform, circular convolution, discrete Fourier transform, Fast Fourier Transform, Digital filter design and implementation.

### Analog and Digital Communication

Basics of Analog and Digital modulation, Basics of Cellular, Interference, Noise, Channel, Wireless channel fading, Shannon Capacity.

### Embedded Systems

Basic Definitions, Embedded - C concepts, Python Programming, Real-Time Operating systems, microcontroller and its submodules. Additional topics: Knowledge on hardware boards like Arduino and Raspberry Pi, sensors and actuators.

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