

**Estd:2001** An Institute with a Difference

(AICTE Approved, VTU Affiliated and NAAC 'A' Accredited) (UG programs - CSE, ECE, ISE, EIE and EEE are Accredited by NBA up to 30.6.2025) Channasandra, Dr. Vishnuvardhan Road, Bengaluru – 560 098

# Supporting Documents communication with the affiliating University

## Proceedings of the BOS online meeting in Electrical & Electronics Engineering held on 08 – 01 – 2022 at 11.00

(Vide: VTU/Aca/	49/2022//5036 date	d 06 Jan 20212)
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SI No.	Name	Position
1	Dr.H.R. Sudarshan Reddy	Chairman
2	Dr. R Prakash	Member
3	Dr. Manjunath K	Member
4	Dr.Basavaraj V Madiggonda	Member
5	Prof .V. Keshava Murthy	Special Invited
6	Prof . Pavan Kumar Y	Special Invitee
Men	nbers Absent	
1	Dr. G.H. Kulkarni	Member
2	Dr. Surekha Manoj	Member
3	Dr. Netravathi	Member
4	Dr.B.R. Natarajan	Member
5	Dr. Rakesh Babu Panguluri	Member
6	Dr. Chandrashekar Reddy Atla	Special Invitee

The Chairman, BOS in Electrical and Electronics Engineering welcomed the members of BOS, and the Special Invitees and requested to deliberate in detail on the agenda for a fruitful outcome. The resolutions are as follows:

Agenda 1: Formation of the 3<sup>rd</sup> to 8<sup>th</sup> semesters scheme of teaching and examinations of B.E (E and E) 2021 in view of feedback and revised Scheme template.

#### **Resolution 1**

The Draft Scheme of Teaching and Examinations -2021-22 of BE programme in Electrical and Electronics Engineering was finalised. To enhance the practical skill, the Ability Enhancement Courses were revised. Copy of the same is enclosed.

Agenda 2: Discussions regarding the formation of syllabus for higher semesters according to NEP 2020.

#### **Resolution 2**

(i) Dr. R Prakash, Dr. Manjunath K and Dr.Basavaraj V Madiggonda were requested to prepare the study material for the courses mentioned against their names shown in the Table.

SI No	Name of the authors (All BOS Member)	Allotted courses for the preparation of Study material
1	Dr. R Prakash	21EEL383555 IC Projects
2	Dr. Manjunath K	(i) 21EEL483Scilab for Electrical and Electronic Measurements (A Laboratory course)
		(ii) 21EEL484 Simulation of Op-Amp Circuits (Using Pspice)
3	Dr.Basavaraj V Madiggonda	<ul> <li>(i) 21EEL381Scilab for Transformers and Generators (A Laboratory course)</li> <li>(ii) 21EEL382 Circuit laboratory using Pspice (A Laboratory course)</li> </ul>
		<ul> <li>(iii) 21EEL384Scilab for 21MAT31Mathematics (Transform Calculus, Fourier Series and Numerical Technics)</li> <li>(iv) 21EEL481Microcontroller Based Projects</li> <li>(v) 21EEL482Scilab for Electric Motors (A Laboratory course)</li> </ul>

Dr. Sumats

(ii) The prepared study material prepared by the above experts be circulated to all colleges offering the EEE programme by the University.

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Agenda 3: Any other subjects with permission of the Chair. (a) Query from RNSIT, Bengaluru regarding the material required for teaching certain topics of the course 18EE81 Power System Operation and Control.

The topics for which the material requested for is;

Operating States of Power Systems, Objectives of Control, Key Concepts of Reliable Operation, Preventive and Emergency Controls, **Energy Management Centers** 

The faculties teaching the above topics may be informed to refer to the book Power System Operation and Control by Dr. K Uma Rao, Wiley publication, 2013/2014. The content of the first chapter of the book, which the required one, is given below.

1.	Introduction to Power System Operation and Control	1
	1.1 Introduction	1
	1.2 Operating States of a Power System	2
	1.5 Objectives of Power Summer Court	4
	1.4 Key Concepts for Reliable Operation	5
	The and a security in the security in the security in the security is the secu	6
	1.5.1 Case Studies	6
	1.6 Preventive and Emergency Controls	8
	1.7 Control Problems	9
	1.8 Energy Management Centres	11
	1.8.1 Major Components of Energy Centres 1.9 Indian Power Sector	12
	and i ower occtor	13

(b) The course High Voltage Engineering use to be a core course for the EEE schemes of 2010, 2015 and 2018. The above course was also supported by high voltage laboratory. Huge amount has been invested for the creation of the high voltage laboratory. In EEE scheme of 2021 -22, the above said course has become a professional course. In order to use and take advantage of the existing high voltage laboratory, the 3 credit course 21EE644 High Voltage Engineering under professional elective - I shall be designed for teaching - learning hours (T:L:P) of (2:0:2). The syllabus content of the course under 5 units shall be designed for 40 hours. The laboratory part shall be considered for CIE only. Out of 50 marks prescribed for the CIE of 21EE644, 20 marks shall be earmarked for laboratory part.

Sd/-

Dr H.R.Sudarshana Reddy, M.E., Ph.D., FIE. Co-Ordinator and Professor Visvesvaraya Institute of Advanced Technology Center for PG Studies, VTU Muddenahalli (P)-562103, Chikkaballapur (D) Karnataka-India. Mobile No: +919844477111, 9844487111

Aubject	Re: Content for 18EE81 in prescribed reference book
From	Sadashiv Halbhavi <sbhvtuso@yahoo.com></sbhvtuso@yahoo.com>
TO	principal@rnsit.ac.in <principal@rnsit.ac.in></principal@rnsit.ac.in>
CC	Registrar Vtu <registrar@vtu.ac.in></registrar@vtu.ac.in>
pate	2022-04-26 14:11



06. Proceedings EEE BOS 13 - 04 - 2022.pdf (~289 KB)

#### Dear Sir,

Date

In continuation of the email sent on 14.03.2022 for clarification regarding 18EE81 content. The matter was referred to Chairperson BOS in EEE for clarification.

We have received in reply the proceedings of the meeting in which this matter was discussed and resolved. Proceeding of the same is attached with this email for kind reference. Please refer to resolution no. 03.

### Thanks and Regards

Prof. Sagar B. Halbhavi

Special Officer, VTU Belagavi-590018 0831-2498108 ನುಷ್ಯನ ಉತ್ತಮ ಅಭ್ಯಾಸವೆಂದರೆ ತಮ್ಮ ಆತ್ಮಸಾಕ್ಷಿಯೊಡನೆ ಪ್ರಾಮಾಣಿಕತೆ

On Monday, 14 March, 2022, 10:00:50 am IST, <principal@rnsit.ac.in> wrote:

Dear Sir,

Please find herewith the attachment about the non availability of the content in the prescribed text book in the subject 18EE81 (Power System Operation and Control).

Regards.

PRINCIPAL RNSIT BENGALURU PH: 080 28611880 / 1



(AICTE Approved, VTU Affiliated and NAAC 'A' Accredited) (UG programs - CSE, ECE, ISE, EIE and EEE have been Accredited by NBA for the Academic Years 2018-19, 2019-20, 2020-21 and 2021-22) Channasandra, Dr. Vishnuvardhan Road, Bengaluru - 560 098 **DEPARTMENT OF ELECTRICAL & ELECTRICAL ENGINEERING** 

10/03/2022

Sir.

This is to bring to your kind notice about the non availability of the content in the prescribed text book in the subject 18EE81 (Power system Operation and Control).

The first module has three major divisions and the first major division is Introduction with following topics

> Operating States of Power Systems, Objectives of Control, Key Concepts of Reliable Operation, Preventive and Emergency Controls, **Energy Management Centers**

The book prescribed for the above topic is Reference Book 1 : "Computer - Aided Power System Analysis" by G L Kusic, CRC Press, 2<sup>nd</sup> Edition, 2010. But the above topics are not available in the prescribed book. Hence I request you to prescribe a book for the above mentioned topics.

1 reference

Thanking you

Yours Faithfully

Mutt.

HoD, EEE

Forwarded to Registra for Kind Carsidentian M/k Celulatione 14/3/22

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## VIII SEMESTER DETAILED SYLLABUS

#### B. E. ELECTRICAL AND ELECTRONICS ENGINEERING Choice Based Credit System (CBCS) and Outcome Based Education (OBE) SEMESTER - VIII

POWER SYSTEM	M OPERATION A	ND CONTROL(Core Con	irse)
Course coue	18EE81	CIE Marks	40
Number of Lecture Hours/Week	3:0:0	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To describe various levels of controls in power systems and the vulnerability of the system.
- To explain components, architecture and configuration of SCADA.
- To explain basic generator control loops, functions of Automatic generation control, speed governors and mathematical models of Automatic Load Frequency Control
- To explain automatic generation control, voltage and reactive power control in an interconnected power system.

To explain reliability and contingency analysis, state estimation and related issues.

#### Module-1

Introduction: Operating States of Power System, Objectives of Control, Key Concepts of Reliable Operation, Preventive and Emergency Controls, Energy Management Centers, R1 Supervisory Control and Data acquisition (SCADA): Introduction, components, application in Power System, basic functions and advantages. Building blocks of SCADA system, components of RTU. communication subsystem, IED functional block diagram. R2

Classification of SCADA system: Single master-single remote; Single master-multiple RTU; Multiple master-multiple RTUs; and Single master, multiple submaster, multiple remote.

#### Module-2

Automatic Generation Control (AGC): Introduction, Schematic diagram of load frequency and excitation voltage regulators of turbo generators, Load frequency control (Single area case), Turbine speed governing system, Model of speed governing system, Turbine model, Generator load model, Complete block diagram of representation of load frequency control of an isolated power system, Steady state analysis, Control area concept, Proportional plus Integral Controller. T1

#### Module-3

Automatic Generation Control in Interconnected Power system: Two area load frequency control, Optimal (Two area) load frequency control by state variable, Automatic voltage control, Load frequency control with generation rate constraints (GRCs), Speed governor dead band and its effect on AGC, Digital LF Controllers, Decentralized control. T1

#### Module-4

Control of Voltage and Reactive Power: Introduction, Generation and absorption of reactive power, Relation between voltage, power and reactive power at a node, Methods of voltage control: i. Injection of reactive power, Shunt capacitors and reactors, Series capacitors, Synchronous compensators, Series injection. ii Tap changing transformers. Combined use of tap changing transformers and reactive power injection, Booster transformers, Phase shift transformers, Voltage collapse. T3

Me containe 14012

Channasandra, Dr. Vishnuvardhan Road, Bengaluru 560 098 Department of Electrical and Electronics Engineering

To, The Principal, RNSIT, Bangalore - 560 098

Sir,

V

SUBJECT: Request to provide option to conduct the Generation of standard Lightning Impulse Experiment from PART -D of VII semester Relay and High Voltage lab -15EEL77

Relay and High Voltage lab -10EEL77 had 4 parts, Part A, Part B, Part C, Part D. As per the scheme 12 experiments are to be conducted, choosing at least 3 experiments from part A (out of 6 specified), 2 from part B (out of 3 specified), 2 from part C (out of 3 specified) and 5 from part D ( out of 6 specified)

But in Relay and High Voltage lab -15 EEL 77, experiments under part D are compulsory. Hence colleges need to invest in procuring Impulse generator for carrying out only one experiment of part D.

- It needs costly setup (requires HV transformer of higher rating, at least 5- stage impulse • generator, Storage Oscilloscope, shielding etc), requiring at least Rs12-15 lakhs .
  - And the space requirement is also more to house the set up and may need additional infrastructure.
- Impulse generator finds application only in very limited fields of Electrical Engineering.
- High Voltage lab is not suggested even in the AICTE model curriculum proposed for Electrical Engineering.

Hence can we request the University to consider providing the option of conducting 5 experiments from part D (out of 6 specified) and selecting more experiments from other parts (A, B, C) .

. Thanking you,

Yours faithfully, Mutt. (S.Sumathi)

Encl: 1)syllabus copy of 10EEL-77 2)syllabus copy of 15EEL-77

Submitted/Registrar for kind considuation. MK Configure 14.06.18 MK Venkaterie RNSIT

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12/11/2019

The Principal, RNSIT Bangalore - 560 098

Sir

To

Following are few suggestions regarding 2018 scheme syllabus of Electrical & Electronics Program.

- 1. As Industrial Drives & Applications is one of the most important subject for Electrical Engineering students, we request you to introduce this subject in seventh semester instead of Power System Protection (18EE72).
- 2. Few important topics of Power System Protection (18EE72) subject can be combined with High Voltage Engineering subject (18EE56), by removing few topics of High Voltage Engineering and the subject may be renamed as Power System Protection and High Voltage (18EE56)
- 3. Following are the list of, Professional Elective Courses (for EE Program) and Open Elective Courses having same content but different course code.

18EE732 (PEC) / 18EE752 (OEC) - Sensors & Transducers

18EE743 (PEC) / 18EE652 (OEC) - PLC & SCADA

- This may lead to confusion to students, while filling the exam application form
- Students may miss the Professional Elective exam, and may come to appear for Open elective exam.

Hence we request you to modify the title of the Open Elective courses,

We are hereby attaching the list of PCC, PEC and OEC of 2018 Scheme.

Thanking you,

Yours faithfully

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HOD, EEE

copy forwarded to Registran, VTU for Kind perusal & needful. MIC (Outestime MK Verkatessia 14.11.1.9

Registran>

PRINCIPAL RNS Institute of Technology Channasandra, Bengaluru - 560 098

#### VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI Scheme of Teaching and Examination 2018 – 19 Outcome Based Education(OBE) and Choice Based Credit System (CBCS) (Effective from the academic year 2018 – 19)

	(Effective from the academic year 2018 – 19)							
1	PCC			PEC				
15	1.	Cours	se and se Code	Course Title	Sl. Course and No. Course Code		rse Code	Course Title
N	0.	PCC		Electric Circuit Analysis	1	PEC	and the second second	Introduction to Nuclear Power
12	-	PCC	18EE33	Transformers and Generators	2	PEC		Electrical Engineering Materials
F	+	PCC	18 EE 34	Analog Electronic Circuits	3	PEC	18 EE643	Computer Aided Electrical Drawing
3	+	PCC	18 EE 35	Digital System Design	4	PEC	18 EE644	Embedded System
4	+	PCC	18 EE 36	Electrical and ElectronicMeasurements	5	PEC		Object Oriented Programming using C++
F	+		18 EE L37	Electrical Machines Laboratory -1	6	PEC		Solar and Wind Energy
+	7	PCC		Electronics Laboratory	7	PEC		Sensors and Transducers
-	8	PCC	18 EE42	Power Generation and Economics	8	PEC		Integrated of Distribution Generation.
F	9	PCC	18 EE43	Transmission and Distribution	9	PEC	18 EE734	Advanced Control Systems Reactive Power Control in Electric Power
F	10	PCC	18 EE44	Electric Motors	10	PEC	18 EE / 55	Systems
F	-	PCC	18 EE45	n ri 11 Theory	11	PEC		Industrial Drives and Application
F	11	PCC		tin and LincorlCs	12	PEC		Utilization of Electrical Power
ł	12			La	13	PEC	MAUGUCE	PLC and SCADA
+	14				14	PEC	18 EE744	Smart Grid Artificial Neural Network With Applications to
ł	15	PCC		IT-termonourship	15	PEC	18 EE/43	Power Systems
+	16	PCC			16	PEC		FACTs and HVDC Transmission
ł	17	PCC	18 EE53	Power Electronics	17	PEC		Electrical Estimation and Costing
t	18	PCC	18 EE54	Signals and Systems	18	PEC		Electric Vehicles Technologies
ć	19	PCC	18 EE55	Electrical Machine Design	19	PEC		Power System Planning
T	20	PCC	18 EE56	High Voltage Engineering	20	PEC	18EE825	Electrical Power Quality
F	21	PCC	18 EEL57	Microcontroller Laboratory	OEC			
F	22	PCC	18 EEL58	Power ElectronicsLaboratory	1	OEC		Industrial Servo Control Systems
F	23	PCC	18 EE61	Control Systems	2	OEC	and the second second second	PLC and SCADA
	24	PCC	18 EE62	Power System Analysis – 1	3	OEC	18EE653	Renewable Energy Systems
-	25	PCC	18 EE63	Digital Signal Processing	4	OEC	18EE654	Testing and Commissioning of Electrical Equipment
	26	PCC	18 EEL66	Control System Laboratory	5	OEC	18EE751	Industrial Motors and Control
1	27	PCC	18 EEL67	Digital Signal ProcessingLaboratory	6	OEC	18EE752	Sensors and Transducers 🧹 🔶
	28	PCC	18 EE71	Power System Analysis – 2	7	OEC	18EE753	Electric Vehicles
1	29	PCC	18 EE72	Power System Protection	8	OEC	18EE754	Energy Conservation and Audit
1	30	PCC	18 EEL76	PSS laboratory				- Ind
	31	PCC	18 EEL77	Relay & HV lab			MK	Oludiatime
1	T	1						



## Fwd: VTU MCA Syllabus Correction

Kavya Aradhya <npkavya@gmail.com> To: roopa.holur@gmail.com Wed, Dec 1, 2021 at 2:23 PM

received from VTU Registrar

Good Morning Sir/ Madam

I will process the same immediately

Thanks and Regards

On Sun, Nov 28, 2021 at 9:29 PM Kavya Aradhya <<u>npkavya@gmail.com</u>> wrote: Respected Sir ,

If a official circular and intimation is given to all affiliated institutions immediately then revised syllabus can be considered, as of now approximately 2 modules are completed in most of the colleges.

Since third and fourth modules may not be started by the faculty member concerned, the revised syllabus may be considered for further coverage

Above all syllabus and text books are aligned properly in new revised version hence should be given priority to facilitate students to prepare well in advance.

Regards Dr Kavya N P RNSIT .

On Sun, 28 Nov 2021 at 8:01 PM, Dr.Arunkumar B R <arunkumarbr@bmsit.in> wrote: Dr.Kavya and other members please respond to this question from the special officer

regards

On Sun, Nov 28, 2021 at 11:22 AM Sadashiv Halbhavi <<u>sbhvtuso@gmail.com</u>> wrote: Dear Sir, Module 03 and 04 seem to be different compared with the existing ones... is it OK as classes started from 01.10.2021 and 02 months are already over.

Thanks and Regards

On Sun, Nov 28, 2021 at 9:54 AM Sadashiv Halbhavi <<u>sbhvtuso@gmail.com</u>> wrote: Dear Sir, Please send me the final copy to be considered (both word and pdf file ) with the recommendation Thanks and Regards

On Sun, Nov 28, 2021 at 7:43 AM Dr.Arunkumar B R <arunkumarbr@bmsit.in> wrote:

------ Forwarded message ------From: Kavya Aradhya <npkavya@gmail.com> Date: Sat, 27 Nov, 2021, 9:03 pm Subject: Re: VTU MCA Syllabus Correction To: Dr.Arunkumar B R <arunkumarbr@bmsit.in>

Good evening sir, Any updates, since we need to continue syllabus, can you arrange for official circular from Vtu sir ??

Regards Dr Kavya M P RNSIT

On Wed, 24 Nov 2021 at 10:17 AM, Dr.Arunkumar B R <arunkumarbr@bmsit.in> wrote: Respected Sir/Madam

This mail is to bring to your notice regarding the VTU MCA syllabus of the 3rd-semester subject "Data Analytics using Python" with subject code 20MCA31. As per the syllabus, the titles and subtitles are not matching with the contents of textbooks or reference books. Therefore it is causing inconvenience and the topics are very vast.

I hereby request the special officer for considering the revised syllabus and textbooks and reference books as attached in this mail for the needful, the current and suggested syllabus is attached herewith for your reference( the copy prepared by RNSIT).

Hope the university will do the needful immediately.

Looking forward to your response. Thanking you

DrABR, Chairman, BOS, MCA

On Sat, Nov 20, 2021 at 9:41 AM Dr.Arunkumar B R <arunkumarbr@bmsit.in> wrote: Respected Sir/Madam

This mail is to bring to your notice regarding the VTU MCA syllabus of the 3rd-semester subject "Data Analytics using Python" with subject code 20MCA31. As per the syllabus, the titles and subtitles are not matching with the contents of textbooks or reference books. Therefore it is causing inconvenience and the topics are very vast.

Kindly respond quickly and give your inputs to modify the syllabus. The current and suggested syllabus is attached herewith for your reference( the copy prepared by RNSIT). In this regard, an email was sent to all BoS members but did not receive any response.

Hope you respond immediately.

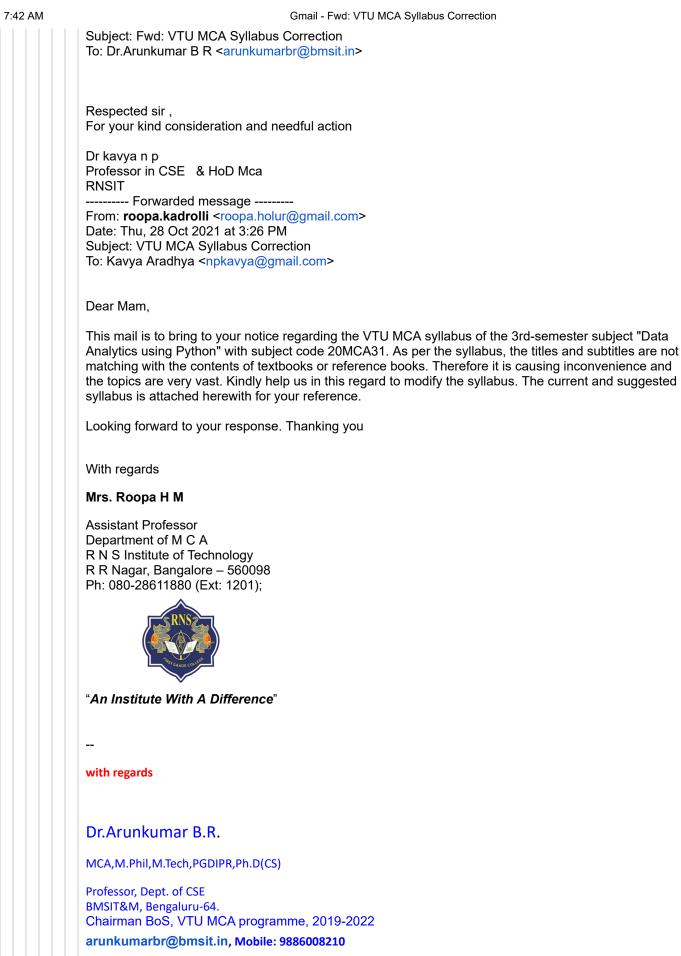
Looking forward to your response. Thanking you

DrABR, Chairman, BOS, MCA

On Sun, Oct 31, 2021 at 7:56 AM Dr.Arunkumar B R <arunkumarbr@bmsit.in> wrote: Respected members of the BoS are requested to send their opinion and suggestions . The recommendations will be sent to the university for the needful after obtaining the responses.

with regards DrABR, BoS chairman

------ Forwarded message ------From: **Kavya Aradhya** <<u>npkavya@gmail.com</u>> Date: Sat, Oct 30, 2021 at 2:28 PM



https://bmsit.ac.in/faculty/5055 http://bmsit.irins.org/profile/116014 Web of Science Researcher ID : N-9173-2017

https://orcid.org/0000-0002-8659-6102 Scopus Author Id: 56419799800 https://orcid.org/0000-0002-8659-6102 https://scholar.google.co.in/citations?user=-J3H9z4AAAAJ&hl=en https://www.researchgate.net/profile/Drarun\_Kumar\_B\_R https://in.linkedin.com/in/dr-arunkumar-b-r-vasista-4ba941104

## Vision

To develop technical professionals acquainted with recent trends and technologies of computer science to serve as valuable resource for the nation/society.

#### Mission

Facilitating and exposing the students to various learning opportunities through dedicated academic teaching, guidance and monitoring.

--

with regards

#### Dr.Arunkumar B.R.

MCA, M. Phil, M. Tech, PGDIPR, Ph.D(CS)

Professor, Dept. of CSE BMSIT&M, Bengaluru-64. Chairman BoS, VTU MCA programme, 2019-2022

arunkumarbr@bmsit.in, Mobile: 9886008210

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https://orcid.org/0000-0002-8659-6102 Scopus Author Id: 56419799800 https://orcid.org/0000-0002-8659-6102 https://scholar.google.co.in/citations?user=-J3H9z4AAAAJ&hl=en https://www.researchgate.net/profile/Drarun\_Kumar\_B\_R https://in.linkedin.com/in/dr-arunkumar-b-r-vasista-4ba941104

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#### Dr.Arunkumar B.R.

MCA, M. Phil, M. Tech, PGDIPR, Ph.D(CS)

Professor, Dept. of CSE BMSIT&M, Bengaluru-64. Chairman BoS, VTU MCA programme, 2019-2022

arunkumarbr@bmsit.in, Mobile: 9886008210

https://bmsit.ac.in/faculty/5055 http://bmsit.irins.org/profile/116014 Web of Science Researcher ID : N-9173-2017

https://orcid.org/0000-0002-8659-6102 Scopus Author Id: 56419799800 https://orcid.org/0000-0002-8659-6102 https://scholar.google.co.in/citations?user=-J3H9z4AAAAJ&hI=en https://www.researchgate.net/profile/Drarun\_Kumar\_B\_R https://in.linkedin.com/in/dr-arunkumar-b-r-vasista-4ba941104

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#### **THANKS & REGARDS**

Prof. S. B. HALBHAVI Special Officer, Visvesvaraya Technological University, Jnana Sangama' Belagavi 590 018. Karnataka. India +919449549630, +91 831 2498108 sbhalbhavi@vtu.ac.in,

THANKS & REGARDS

Prof. S. B. HALBHAVI Special Officer, Visvesvaraya Technological University, Jnana Sangama' Belagavi 590 018. Karnataka. India +919449549630, +91 831 2498108 sbhalbhavi@vtu.ac.in, with regards Dr.Arunkumar B.R. MCA,M.Phil,M.Tech,PGDIPR,Ph.D(CS) Professor, Dept. of CSE BMSIT&M, Bengaluru-64. Chairman BoS, VTU MCA programme, 2019-2022 arunkumarbr@bmsit.in, Mobile: 9886008210 https://bmsit.ac.in/faculty/5055

https://bmsit.ac.in/faculty/5055 http://bmsit.irins.org/profile/116014 Web of Science Researcher ID : N-9173-2017

https://orcid.org/0000-0002-8659-6102 Scopus Author Id: 56419799800 https://orcid.org/0000-0002-8659-6102 https://scholar.google.co.in/citations?user=-J3H9z4AAAAJ&hI=en https://www.researchgate.net/profile/Drarun\_Kumar\_B\_R https://in.linkedin.com/in/dr-arunkumar-b-r-vasista-4ba941104

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### **THANKS & REGARDS**

#### Prof. S. B. HALBHAVI

Special Officer, Visvesvaraya Technological University, Jnana Sangama' Belagavi 590 018. Karnataka. India +919449549630, +91 831 2498108 sbhalbhavi@vtu.ac.in,