

# Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BENGALURU-56

(An Autonomous Institution, Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi)

DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS(MCA)

The following documents enclosed are verified and approved.

-MCA 5/4/22

Dr. Chandrakanth G Pujari

Dr. Chandrakanth G. Pujari, MCA, MTech, Ph.D. Professor and Head, MCA Program Dr. Ambedkar Institute of Technology Bengaluru-560 056

# Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BENGALURU –56 (An Autonomous Institute, Approved by AICTE, Affiliated to VTU)

# **DEPARTMENT OF MASTER OF COMPUTER APPLICATIONS (MCA)**

# VALUE ADDED COURSES (MOOC CERTIFICATES)

SI. No	USN	NAME OF THE STUDENT	NPTEL COURSE	DURATION
1.	1DA20MC006	ARAVINDHA KUMAR S	INTRODUCTION TO ALGORITHMS AND ANALYSIS	JUL-OCT 2021
2.	1DA20MC007	B R PAVAN	INNOVATION BY DESIGN	FEB-MAR 2022
3.	1DA20MC008	CHAITHRA D R	SOFTWARE CONCEPTUAL DESIGN	FEB-MAR 2022
4.	1DA20MC010	CHETHAN M P	SOFTWARE TESTING	JAN-FEB 2022
5.	1DA20MC012	DHANUJA K P	PYTHON FOR DATA SCIENCE	JUL-AUG 2021
6.	1DA20MC015	GANGADHAR SINGH	INTRODUCTION TO PROGRAMMING IN C	FEB-APRIL 2022
7.	1DA20MC016	GEETHA G	SOFTWARE CONCEPTUAL DESIGN	FEB-MAR 2022
8.	1DA20MC020	HINDU C	<b>BIG DATA COMPUTING</b>	AUG-OCT 2021
9.	1DA20MC021	JEEVAN J S	SOFTWARE TESTING	JAN-FEB 2022
10.	1DA20MC022	ЈҮОТНІ К	PYTHON FOR DATA SCIENCE	JAN-FEB 2022
11.	1DA20MC024	KAVANA M C	SOFTWARE TESTING	JAN-FEB 2022
12.	1DA20MC033	NISHCHITHA K S	INTRODUCTION TO ALGORITHMS AND ANALYSIS	JUL-OCT 2021
13.	1DA20MC037	POOJA M RAIKAR	SOFTWARE TESTING	JAN-FEB 2021
14.	1DA20MC039	PRADEEPA P K	DATA BASE MANAGEMENT SYSTEM	JAN-MAR 2022
15.	1DA20MC041	RAMYA R	SOFTWARE TESTING	JAN-FEB 2021

16.	1DA20MC030	MOOLA ANITHA REDDY	INTRODUCTION TO INDUSTRY 4.0 AND INTERNET OF THINGS	JAN-APRIL 2022
17.	1DA20MC042	RANJITHA D NAYAK	PYTHON FOR DATA SCIENCE	JUL-AUG 2021
18.	1DA20MC043	RANJITHA R	PYTHON FOR DATA SCIENCE	JUL-AUG 2021
19.	1DA20MC044	ROOPALI	PYTHON FOR DATA SCIENCE	JAN-FEB 2022
20.	1DA20MC046	SAHANA V A	<b>BIG DATA COMPUTING</b>	AUG-OCT 2021
21.	1DA20MC051	SUMANTH G	INTRODUCTION TO PROGRAMMING IN C	FEB-APRIL 2022
22.	1DA20MC054	SUSHMITHA T	SOFTWARE TESTING	JAN-FEB 2022
23.	1DA20MC055	UJWAL M	SOFTWARE TESTING	JAN-FEB 2021
24.	1DA20MC056	VENUGOPAL S	SOFTWARE TESTING	JAN-FEB 2022
25.	1DA20MC059	YASHAS K P	<b>BIG DATA COMPUTING</b>	AUG-OCT 2021
26.	1DA20MC060	YASHWANTH RAJ N	SOFTWARE TESTING	JAN-FEB 2022

#### Roll No: NPTEL20CS80S31211093

To VEENA O M NO 73 7TH BLOCK BRAMHAPUTRA SANKIRNA KSRP POLICE QTRS KORAMANGALA BANGALORE-34 KARNATAKA - 560034 PH. NO :7026014830



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# VEENA O M

for successfully completing the course

# **Python for Data Science**

with a consolidated score of **64** 

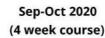
%

Online Assignments 21/25	Programming Exam	18.25/25	Proctored Exam	24.47/50
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#### Total number of candidates certified in this course: 2008

Devendra Jalihal

Prof. Devendra Jalihal Chairman Centre for Continuing Education, IITM



Prof. Andrew Thangaraj NPTEL Coordinator IIT Madras

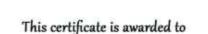


Indian Institute of Technology Madras



To validate and check scores: https://nptel.ac.in/noc





(Funded by the MoE, Govt. of India)

**NPTEL** Online

јуотні к

for successfully completing the course

# **Python for Data Science**

with a consolidated score of **68** 

68 %

ertification

()				-10	
Online Assignments	22.5/25	Programming Exam	25/25	Proctored Exam	20/50
	1 1			1	-

Total number of candidates certified in this course: 3390



Roll No:NPTEL22CS32S34400051

#### Roll No: NPTEL22CS12S33202339

To JEEVAN J S 221.JAKKANAHALLI, BILIGERE POST TIPTUR TALUK, TUMAKURU DISTRICT TIPTUR KARNATAKA - 572114 PH. NO :9110424377



%

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

JEEVAN J S

for successfully completing the course

# Software Testing

with a consolidated score of **66** 

Online Assignments 23.33/25 Proctored Exam 42.75/75

Total number of candidates certified in this course: 898



Jan-Feb 2022 (4 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharaopur



Indian Institute of Technology Kharagpur

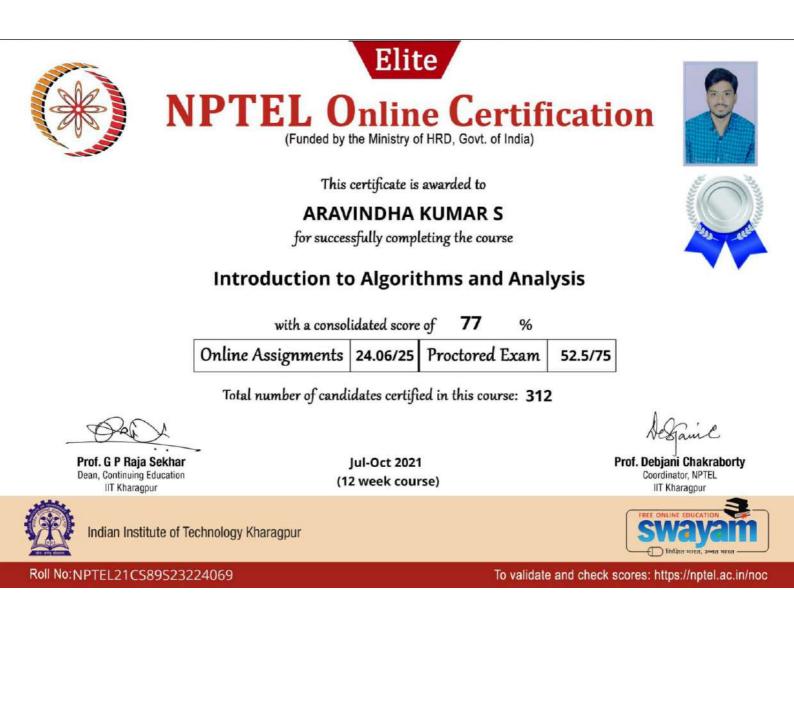
FREE ONLINE EQUICATION

Roll No:NPTEL22CS12S33202339



NP'	ГЕІ	Elite Online (Funded by the MoE, Govt		tification		
		This certificate is award	led to			
		SUMANTH G	5			
	fe	or successfully completing	the course			
	Introd	uction to Program	nming	In C		
	with	a consolidated score of	70	%		
Online Assignments	25/25	Programming Exam	25/25	Proctored Exam	20.32/50	
Ta	tal number	of candidates certified in (	his course	1728		
Prof. B. V. Ratish Kumar Chairman, Centre for Continuing Education IIT Kanpur		Feb-Apr 2022 (8 week course)		Pro	f. Satyaki Roy TEL Coordinator ITT Kangur	
Roll No:NDTEL 22CS40522194025	y Kanpur			alidate and chark scores		m

NPTE	Elit L Onlin (Funded by the MoE	e Certifi	ication
	This certificate is a	awarded to	
	B R PAV		
	for successfully comple	eting the course	
	Innovation by	y Design	
w	ith a consolidated score	of <b>69</b> %	
Online Assi	gnments 20/25	Proctored Exam	49.01/75
Total num	ber of candidates certifie	ed in this course: 347	7
	Feb-Mar 202		Prof. Sridhar lyer Head CDEEP & NPTEL Coordinator
~~~	(4 week course	e)	IIT Bombay
Indian Institute of Technology Bomb	ay		FREE ONLINE EDUCATION
Roll No:NPTEL22DE04S33192908		To validate	e and check scores: https://nptel.ac.in/noc



#### Roll No: NPTEL22CS39S43195424

To CHAITHRA D R D/O RANGASWAMY, DODDAMATHIGHATTA GRAMA D/O RANGASWAMY, DODDAMATHIGATTA HASSAN KARNATAKA - 573116 PH. NO :6361203281

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Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



**CHAITHRA D R** 

for successfully completing the course

# Software Conceptual Design

with a consolidated score of **79**%

Online Assignments 20/25 Proctored Exam 58.5/75

Total number of candidates certified in this course: 266

Prof. Sridhar Iyer Head CDEEP & NPTEL Coordinator IIT Bombay



Feb-Mar 2022 (4 week course)



Indian Institute of Technology Bombay

Roll No:NPTEL22CS39S43195424

#### Roll No: NPTEL22CS12S33203130

TO CHETHAN MP MUNDIGEHALLA, MARATHUR, SAGAR, SHIMOGA #12 KOLALU, ADARSHA LAYOUT, NAGARBHAVI BANGALORE KARNATAKA - 560056 PH. NO :9591064424



%

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# CHETHAN MP

for successfully completing the course

# Software Testing

with a consolidated score of 54

Online Assignments 23.75/25 Proctored Exam 30/75

Total number of candidates certified in this course: 898

Prof. Jayanta Mukhopadhyay Dean Outreach IIT Kharagpur

Jan-Feb 2022 (4 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



Indian Institute of Technology Kharagpur

Roll No:NPTEL22CS12S33203130

To validate and check scores: https://nptel.ac.in/noc

#### Roll No: NPTEL21CS78S23191962

To DHANUJA K P KUTAGAL, KUTAGAL POST,RAMANAGARA HONGANASU NILAYA,IJOOR,RAMANAGARA RAMANAGARA KARNATAKA - 562159 PH. NO :7349207275



Score	Type of Certificate	
>=90	Elite+Gold	
75-89	Elite+Silver	
>=60	Elite	
40-59	Successfully Completed	
<40	No Certificate	

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# DHANUJA K P

for successfully completing the course

# Python for Data Science

with a consolidated score of

64 %

Online Assignments 19.17/25 Programming Exam 23.25/25 Proctored Exam 21.33/50

#### Total number of candidates certified in this course: 1937



Chairman Chot Chairman Centre for Continuing Education, IITM Jul-Aug 2021 (4 week course)



NPTEL, Coordinator IIT Madras



Indian Institute of Technology Madras

Roll No:NPTEL21CS78S23191962



#### Roll No: NPTEL21CS86S43222095

To HINDU C NEAR ABBAIAH NAIDU STUDIO CHIKKLASANDRA **KARNATAKA - 560061** PH. NO :8217585559

Score		Type of Certificate	
	>=90	Elite+Gold	
	75-89	Elite+Silver	
	>=60	Elite	
	40-59	Successfully Completed	
	<40	No Certificate	

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# HINDU C

for successfully completing the course

# **Big Data Computing**

55 with a consolidated score of

Online Assignments	24.58/25	Proctored Exam	30.75/75
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%

Total number of candidates certified in this course: 1394

Prof. Rajesh M.Hegde Chairman, Centre for Continuing Education IIT Kanpur

Aug-Oct 2021 (8 week course)

Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL21CS86S43222095

To validate and check scores: https://notel.ac.in/noc Scanned with CamScanner

#### Roll No: NPTEL22CS39S43195491

To GEETHA G GALIHALLI,PURAVARA(H),MADHUGIRI GALIHALLI,BADAKANAHALLI,MADHUGIRI TUMKUR KARNATAKA - 572102 PH. NO :9606135769



%

Score	Type of Certificate	
>=90	Elite+Gold	
75-89	Elite+Silver	
>=60	Elite	
40-59	Successfully Completed	
<40	No Certificate	

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.





This certificate is awarded to

GEETHA G

for successfully completing the course

# Software Conceptual Design

with a consolidated score of **82** 

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Online Assignments 20.67/25 Proctored Exam 61.5/75

Total number of candidates certified in this course: 266



Prof. Sridhar lyer Head CDEEP & NPTEL Coordinator IIT Bombay



Feb-Mar 2022 (4 week course)



Indian Institute of Technology Bombay

Roll No:NPTEL22CS39S43195491

#### Roll No: NPTEL21CS13S11210815

To POOJA M RAIKAR #233(107) BETTANAPALYA RAMOHALLI POST KENGERI HOBLI BANGALORE 560074 BANGALORE KARNATAKA - 560074 PH. NO :7899176175

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate



%

#### No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.







This certificate is awarded to

# **POOJA M RAIKAR**

for successfully completing the course

# **Software Testing**

with a consolidated score of **50** 

Online Assignments 19.17/25 Proctored Exam 31.01/75

Total number of candidates certified in this course: 700

Prof. G P Raja Sekhar Dean, Continuing Education IIT Kharaonur Jan-Feb 2021 (4 week course)

Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagour

#### Roll No: NPTEL22CS12S33203830

To SUSHMITHA T JAMBAGARU BASAVAN HOLE NEAR TIPTOP LAYOUT SAGARA **KARNATAKA - 577401** PH. NO :9535442605



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# SUSHMITHA T

for successfully completing the course

# **Software Testing**

53 with a consolidated score of

%

30/75

Proctored Exam **Online Assignments** 22.5/25

Total number of candidates certified in this course: 898

Prof. Jayanta Mukhopadhyay Dean Outreach IIT Kharagpur

Jan-Feb 2022

Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



(4 week course)



Roll No:NPTEL22CS12S33203830

#### Roll No: NPTEL21CS89S13223741

To NISHCHITHA K S #274 BHARGAVI NILAYA 1ST B MAIN ROAD,SBI LAYOUT, HEROHALLI BENGALURU KARNATAKA - 560091 PH. NO :9742600139



%

Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

#### No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# NISHCHITHA K S

for successfully completing the course

# Introduction to Algorithms and Analysis

with a consolidated score of **63** 

Online Assignments 23.75/25 Proctored Exam 39/75

Total number of candidates certified in this course: 312

Prof. G P Raja Sekhar Dean, Continuing Education IIT Kharagpur

Roll No:NPTEL21CS89S13223741

Jul-Oct 2021 (12 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



Indian Institute of Technology Kharagpur

a dana

#### Roll No: NPTEL21CS13S21211535

To UJWAL M 46 2ND FLOOR 7TH CROSS ANUBHAVNAGAR NAGARBHAVI MAIN ROAD BANGALORE KARNATAKA - 560072 PH. NO :7795235969



%

Score	Type of Certificate	
>=90	Elite+Gold	
75-89	Elite+Silver	
>=60	Elite	
40-59	Successfully Completed	
<40	No Certificate	

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

UJWAL M

for successfully completing the course

# **Software Testing**

with a consolidated score of **51** 

Online Assignments 19.17/25 Proctored Exam 31.5/75

Total number of candidates certified in this course: 700

Prof. G P Raja Sekhar Dean, Continuing Education IIT Kharagpur Jan-Feb 2021 (4 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



Indian Institute of Technology Kharagpur

Roll No:NPTEL21CS13S21211535

To validate and check scores: https://nptel.ac.in/noc

#### Roll No: NPTEL21CS86S33220415

To YASHAS KP #36 9TH CROSS ULLAL MAIN ROAD B/H SAROJA MEMORIAL SCHOOL BANGALORE KARNATAKA - 560056 PH. NO :917337793851



%

Score	Type of Certificate	
>=90	Elite+Gold	
75-89	Elite+Silver	
>=60	Elite	
40-59	Successfully Completed	
<40	No Certificate	

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



**NPTEL Online Certification** (Funded by the Ministry of HRD, Govt. of India)



This certificate is awarded to

# **YASHAS KP**

for successfully completing the course

# **Big Data Computing**

with a consolidated score of **55** 

Online Assignments	24.58/25	Proctored Exam	30/75
0	11	00047-0008-999940-104405-999945-141991	

Total number of candidates certified in this course: 1394

Prof. Rajesh M.Hegde Chairman, Centre for Continuing Education IIT Kanpur

Aug-Oct 2021 (8 week course)



Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur



NIST A

Indian Institute of Technology Kanpur

Roll No:NPTEL21CS86S33220415

#### Roll No: NPTEL22CS12S33200392

TO S VENU GOPAL #28,PANTHARAPALYA ,NAYANDAHALLI BEHIND GANESHA TEMPLE, MYSORE ROAD BANGALORE **KARNATAKA - 560039** PH. NO :9113065834



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

#### No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# S VENU GOPAL

for successfully completing the course

# Software Testing

with a consolidated score of 66

%

Online Assignments 24.17/25 Proctored Exam 42/75

Total number of candidates certified in this course: 898

Prof. Jayanta Mukhopadhyay Dean Outreach IIT Kharagpur

Jan-Feb 2022 (4 week course)

Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



Indian Institute of Technology Kharagpur

Roll No:NPTEL22CS12S33200392

To validate and check scores: https://nptel.ac.in/noc

#### Roll No: NPTEL22CS12S33200470

To YASHWANTH RAJ N 404 PANCHAJANYA APTS, 9TH MAIN SOUMYA SHREE LAYOUT, JALAHALLI BENGALURU KARNATAKA - 560013 PH. NO :9535024133



	Score	Type of Certificate	
3	>=90	Elite+Gold	
- 33	75-89	Elite+Silver	
3	>=60	Elite	
8	40-59	Successfully Completed	
3	<40	No Certificate	

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.





Indian Institute of Technology Kharagpur

To validate and check scores: https://nptel.ac.in/noc

Roll No:NPTEL22CS12S33200470

#### Roll No: NPTEL21CS13S11211276

To RAMYA R DOOR NO. 134 BULD NO. 1 FIRST FLOOR KHB COLONY SHIRKE APARTMENTS BANGALORE KARNATAKA - 560060 PH. NO :8553701840

	>=90	
	75-89	
	>=60	
8	40-59	S
51	<40	

Score	Type of Certificate		
>=90	Elite+Gold		
75-89	Elite+Silver		
>=60	Elite		
40-59	Successfully Completed		
<40	No Certificate		

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

**RAMYA R** 

for successfully completing the course

# **Software Testing**

62 with a consolidated score of

%

Online Assignments | 15.83/25 | Proctored Exam 46.01/75

Total number of candidates certified in this course: 700

Prof. G P Raja Sekhar Dean, Continuing Education IIT Kharagpur

Jan-Feb 2021 (4 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur



Indian Institute of Technology Kharagpur

Roll No:NPTEL21CS13S11211276

To validate and check scores: https://nptel.ac.in/noc

#### Roll No: NPTEL22CS51S33202354

To PRADEEPA P K PANCHANAHALLI CHIKAMAGALURU KARNATAKA PANCHANAHALLI CHIKAMAGALURU KARNATAKA CHIKAMAGALURU **KARNATAKA - 577182** PH. NO :7259821247



%

Score	Type of Certificate			
>=90	Elite+Gold			
75-89	Elite+Silver			
>=60	Elite			
40-59	Successfully Completed			
<40	No Certificate			

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

# PRADEEPA P K

for successfully completing the course

# Data Base Management System

52 with a consolidated score of

Online Assignments | 22.08/25 | Proctored Exam 30/75

Total number of candidates certified in this course: 2095

Prof. Jayanta Mukhopadhyay Dean Outreach IIT Kharagpur

Jan-Mar 2022 (8 week course)





Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharagpur





Indian Institute of Technology Kharagpur

Roll No:NPTEL22CS51S33202354

#### Roll No: NPTEL21CS78S13190080

To NISHA MALLAPPA JEEDI D/O MALLAPPA JEEDI SOMAVARAPETE MUDGAL MUDGAL KARNATAKA - 584125 PH. NO :9663771574



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

#### No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

#### NISHA MALLAPPA JEEDI

for successfully completing the course

# **Python for Data Science**

with a consolidated score of **6** 

65 %

Online Assignments 21.75/25 Programming Exam 23.25/25 Proctored Exam 20/50	Online Assignments	21.75/25	Programming Exam	23.25/25	Proctored Exam	20/50
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#### Total number of candidates certified in this course: 1937



Prof. Devendra Jalihal Chairman Centre for Continuing Education, IITM Jul-Aug 2021 (4 week course)



NPTEL, Coordinator



Indian Institute of Technology Madras





To RANJITHA R THAMASANDRA 562112 THAMASANDRA RAMANAGARA KARNATAKA - 562112 PH. NO :9606637900



Score	Type of Certificate			
>=90	Elite+Gold			
75-89	Elite+Silver			
>=60	Elite			
40-59	Successfully Completed			
<40	No Certificate			

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

RANJITHA R

for successfully completing the course

# **Python for Data Science**

with a consolidated score of71%Online Assignments20.83/25Programming Exam23.25/25Proctored Exam26.83/50Total number of candidates certified in this course:1937

Devendra Jalihal Chairman Centre for Continuing Education, IITM Jul-Aug 2021 (4 week course) IIT Madras

Indian Institute of Technology Madras

To validate and check scores: https://nptel.ac.in/noc

Roll No:NPTEL21CS78S13191125

#### Roll No: NPTEL21CS86S33221514

To SAHANA VA NO 156/A 6TH CROSS NAIDU LAYOUT SRINIVASA NILAYA BANGLORE KARNATAKA - 560061 PH. NO :8073207072



Score	Type of Certificate			
>=90	Elite+Gold			
75-89	Elite+Silver			
>=60	Elite			
40-59	Successfully Completed			
<40	No Certificate			

No. of credits recommended by NPTEL:2

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



with a consolidated score of			78	%	
Online Assignments	24.58/25	Procto	ored 1	Exam	53.25/75

Total number of candidates certified in this course: 1394

Prof. Rajesh M.Hegde Chairman, Centre for Continuing Education IIT Kanpur Aug-Oct 2021 (8 week course)



Prof. Satyaki Roy NPTEL Coordinator IIT Kanpur



Indian Institute of Technology Kanpur

Roll No:NPTEL21CS86S33221514

#### Roll No: NPTEL22C552S33100097

To ANITHA REDDY 3/46-3, REDDY VARI PALEM TADIPATRI ANDHRA PRADESH - 515411 PH. NO :9640434181

S	core	Type of Certificate
>=90		Elite+Gold
7	5-89	Elite+Silver
>	=60	Elite
40	)-59	Successfully Completed
<4	10	No Certificate

#### No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

### ANITHA REDDY

for successfully completing the course

# Introduction to Industry 4.0 and Industrial

# **Internet of Things**

with a consolidated score of 60

%

Online Assignments 24.78/25 Proctored Exam 35.24/75

Total number of candidates certified in this course: 3987



Jan-Apr 2022 (12 week course)



Prof. Debjani Chakraborty Coordinator, NPTEL IIT Kharaopur



Indian Institute of Technology Kharagpur



Roll No:NPTEL22CS52S33100097

#### Roll No: NPTEL22C532533203709

To ROOPALI MALLIKARJUN AREA, WADI JN -585225 DR AIT, BANGALORE-560056 GULBARGA KARNATAKA - 585225 PH. NO :9606385755



Score	Type of Certificate			
>=90	Elite+Gold			
75-89	Elite+Silver			
>=60	Elite			
40-59	Successfully Completed			
<40	No Certificate			

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

ROOPALI

for successfully completing the course

# **Python for Data Science**

with a consolidated score of 73

73 %

Online Assignments 23.33/25 Programming Exam 25/25 Proctored Exam 24.17/50

Total number of candidates certified in this course: 3390







Indian Institute of Technology Madras



Roll No:NPTEL22CS32S33203709

To validate and check scores: https://nptel.ac.in/noc

#### Roll No: NPTEL21CS78S13191103

To RANJITHA D NAYAK #295 4TH CROSS JALAHALLI BANGALORE-13 **KARNATAKA - 560013** PH. NO :7026620834

Score	Type of Certificate			
>=90	Elite+Gold			
75-89	Elite+Silver			
>=60	Elite			
40-59	Successfully Completed			
<40	No Certificate			

#### No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



This certificate is awarded to

#### RANJITHA D NAYAK

for successfully completing the course

# Python for Data Science

65 with a consolidated score of % 23.25/25 Proctored Exam Online Assignments 18.33/25 Programming Exam 23.5/50 Total number of candidates certified in this course: 1937



Jul-Aug 2021 (4 week course)





Indian Institute of Technology Madras

Roll No:NPTEL21CS78S13191103

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BENGALURU-56



(An Autonomous Institution, Affiliated to VTU, Approved by AICTE, Accredited by NAAC)

# **Master of Computer Applications**

# Value Added Courses-Syllabus & Course Instructor

# 1. Python for Data Science

By Prof. Ragunathan Rengasamy | IIT Madras

# **Course layout**

# Week 1: BASICS OF PYTHON SPYDER (TOOL)

- Introduction Spyder
- Setting working Directory
- Creating and saving a script file
- File execution, clearing console, removing variables from environment, clearing environment
- Commenting script files
- Variable creation
- Arithmetic and logical operators
- Data types and associated operations

# Week 2: Sequence data types and associated operations

- Strings
- Lists
- Arrays
- Tuples
- Dictionary
- Sets
- Range

# Week 3: Pandas dataframe and dataframe related operations on Toyota Corolla dataset

- 1. Reading files
- 2. Exploratory data analysis
- 3. Data preparation and preprocessing

# Data visualization on Toyoto Corolla dataset using matplotlib and seaborn libraries

- 1. Scatter plot
- 2. Line plot
- 3. Bar plot
- 4. Histogram
- 5. Box plot
- 6. Pair plot

# Control structures using Toyota Corolla dataset

- 1. if-else family
- 2. for loop
- 3. for loop with if break
- 4. while loop

### Week 4: CASE STUDY

### •Regression

1. Predicting price of pre-owned cars

#### •Classification

1. Classifying personal income

Books and references

1. Introduction to linear algebra - by Gilbert Strang 2. Applied statistics and probability for engineers – by Douglas Montgomery 3. Mastering python for data science, Samir Madhavan

Instructor bio



### Prof. Ragunathan Rengasamy

IIT Madras

Prior to joining IIT Madras as a professor, Prof.Rengaswamy was a professor of Chemical Engineering and Co-Director of the Process Control and Optimization Consortium at Texas Tech University, Lubbock, USA. He was also a professor and associate professor at Clarkson University, USA and an assistant professor at IIT Bombay. His major research interests are in the areas of fault detection and diagnosis and development of data science algorithms for manufacturing industries.

# 2. Software Testing

By Prof. Meenakshi D'souza | IIIT Bangalore

Course layout

**Week 1:** Techniques and algorithms for test case design: Graphs based testing-structural coverage criteria.

- Week 2: Graphs based testing: Data flow coverage criteria
- Week 3: Graphs based testing: Data flow coverage criteria
- Week 4: Graphs coverage for source code, design elements and requirements

**Week 5:** Techniques and algorithms for test case design: Logic based testing-Predicates, logic based coverage criteria

Week 6: Specification based logic coverage, logic coverage on finite state machinesWeek 7: Input space partitioning: Input domain modeling, combination strategies

Week 8: Syntax based testing: Coverage criteria based on syntax, mutation testing

**Week 9:** Test case design (as learnt above) applied to object-oriented applications

Week 10: Test case design (as learnt above) applied to web applications

Week 11: Symbolic testing

Week 12: Concolic testing, Conclusion

Books and references :Nil

Instructor bio



Prof. Meenakshi D'souza

**IIIT Bangalore** 

Prof. Meenakshi D'souza is currently an Associate Professor at IIIT-Bangalore.Meenakshi did her Master TMs in Mathematics from University of Madras, Chennai and her Ph. D. in Theoretical Computer Science from The Institute of Mathematical Sciences, Chennai. She joined the research department of Honeywell Technology Solutions, Bangalore soon after completing her Ph. D. and worked there in the areas of Formal Verification of Software Design, Model Based Development and Physical Access Control before joining IIIT-Bangalore. Her research interests are in Formal Methods, Model Based Development, Software Testing and Automata Theory.

# 3. Big Data Computing

By Prof. Rajiv Misra | IIT Patna

Course layout

- Week 1 : Introduction to Big Data
- Week 2 : Introduction to Enabling Technologies for Big Data
- Week 3 : Introduction to Big Data Platforms
- Week 4 : Introduction to Big Data Storage Platforms for Large Scale Data Storage
- Week 5 : Introduction to Big Data Streaming Platforms for Fast Data
- Week 6 : Introduction to Big Data Applications (Machine Learning)

Week 7 : Introduction of Big data Machine learning with SparkWeek 8 : Introduction to Big Data Applications (Graph Processing)

#### Books and references

#### **Text Book:**

Bart Baesens, Analytics in a Big Data World: The Essential Guide to Data Science and its Applications, Wiley, 2014

#### **Reference Books:**

1. Dirk Deroos et al., Hadoop for Dummies, Dreamtech Press, 2014.

2. Chuck Lam, Hadoop in Action, December, 2010.

3. Leskovec, Rajaraman, Ullman, Mining of Massive Datasets, Cambridge University Press.

4. I.H. Witten and E. Frank, Data Mining: Practical Machine learning tools and techniques.

5. Erik Brynjolfsson et al., The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies, W. W. Norton & Company, 2014.

Instructor bio



Prof. Rajiv Misra

IIT Patna

Dr. Rajiv Misra is working in Department of Computer Science and Engineering at Indian Institute of Technology Patna, India. He obtained his Ph.D degree from IIT Kharagpur, M.Tech degree in Computer Science and Engineering from the Indian Institute of Technology (IIT) Bombay, and Bachelor's of engineering degree in Computer Science from MNIT Allahabad. His research interests spanned a design of distributed algorithms for Mobile, Adhoc and Sensor Networks, Cloud Computing and Wireless Networks. He has contributed significantly to these areas and published more than 70 papers in high quality journals and conferences, and 2 book chapters. His h-index is 10 with more than 590 citations. He has authored papers in IEEE Transactions on Mobile Computing, IEEE Transaction on Parallel and Distributed Systems, IEEE Systems Journal, Adhoc Networks, Computer Network, Journal of Parallel and Distributed Computing. He has edited a book titled as "Smart Techniques for a Smarter Planet: Towards Smarter Algorithms" for the "Studies in Fuzziness and Soft Computing" book series, Springer (2018). He has supervised four Phd students and currently four Phd students working under his supervision in the area of big data, cloud computing, distributed computing, and sensor networks. He is a senior member of the IEEE and fellow of IETE. He has completed as the Principal Investigator of R&D Project Sponsored by DeiTY entitled as "Vehicular Sensor and Mesh Networks based Future ITS". He has mentored the online courses on Cloud Computing, Advanced Graph Theory and Distributed Systems in the platform of NPTEL.

# 4. Introduction to algorithms and analysis

By Prof. Sourav Mukhopadhyay | IIT Kharagpur

Course layout

Week 1: Sorting problem, time complexity, asymptotic analysis.

Week 2: Solving recurrence, Divide-and-Conquer.

Week 3: Quicksort and Heap Sort, Decision Tree.

Week 4: Linear time Sorting, Order Statistics.

Week 5: Hash Function, Binary Search Tree (BST) Sort.

Week 6: Randomly build BST, Red Black Tree, Augmentation of data structure.

Week 7: Van Emde Boas, Amortized analysis, Computational Geometry.

Week 8: Dynamic Programming, Graphs, Prim's Algorithms.

Week 9: BFS & DFS, Shortest path problem, Dijktra, Bellman Ford.

Week 10: All pairs shortest path, Floyd-Warshall, Johnson Algorithm.

Week 11: More amortized analysis, disjoint set data structure.

Week 12: Network flow, computational complexity.

Books and references

1) Cormen, Thomas, Charles Leiserson, Ronald Rivest, and Clifford Stein. Introduction to Algorithms. 3rd ed. MIT

Press, 2009. ISBN: 9780262033848.

2) "Computational Geometry - Algorithms and applications" by Mark de Berg, Otfeied Cheong, Marc Van Kreveld and

Mark Overmars. 3rd Edition, Springer

Instructor bio



Prof. Sourav Mukhopadhyay

IIT Kharagpur

Sourav Mukhopadhyay is an Associate Professor, Department of Mathematics at Indian Institute of Technology Kharagpur. He has completed his B.Sc (Honours in Mathematics) in1997 from University of Calcutta, India. He has done M.Stat (in statistics) and M.Tech (in computer science) from Indian Statistical Institute, India, in 1999 and 2001 respectively. He worked with Cryptology Research Group at Indian Statistical Institute as a PhD student and received his Ph.D. degree in Computer Science from there in 2007. He was a Research Assistant at the Computer Science department of School of Computing, National University of Singapore (NUS). He visited Inria Rocquencourt, project CODES, France and worked as a post-doctoral research fellows at the School of Computer Engineering, Nanyang Technological University (NTU), Singapore. He was a post-doctoral research fellows and a part time Lecturer with School of Electronic Engineering, Dublin City University (DCU), Ireland.

# 5. Data Base Management System

By Prof. Partha Pratim Das, Prof. Samiran Chattopadhyay | IIT Kharagpur

Course layout

Week 1: Course Overview. Introduction to RDBMS

Week 2: Structured Query Language (SQL)

Week 3: Relational Algebra. Entity-Relationship Model

Week 4: Relational Database Design

Week 5: Application Development. Case Studies. Storage and File Structure

Week 6: Indexing and Hashing. Query Processing

Week 7: Query Optimization. Transactions (Serializability and Recoverability)

Week 8: Concurrency Control. Recovery Systems. Course Summarization.

Books and references

#### **Text Books / Basic Material**

– Database System Concepts by Abraham Silberschatz, Henry F. Korth, and S. Sudarshan, 6th Edition, McGraw-Hill Education, 2010.

- Presentations used in the Course

#### **Reference (Advanced) Material**

This is a first level course. So the textbook would be the primary resource also for the advanced chapters. In addition, some references will be specified for every topic during the course.

Instructor bio



# **Prof. Partha Pratim Das**

IIT Kharagpur

Prof. Partha Pratim Das received his BTech, MTech and PhD degrees in 1984, 1985 and 1988 respectively from IIT Kharagpur. He served as a faculty in Department of Computer Science and Engineering, IIT Kharagpur from 1988 to 1998. In 1998, he joined Alumnus Software Ltd as a Business Development Manager. From 2001 to 2011, he worked for Interra Systems, Inc. as a Senior Director and headed its Kolkata Center. In 2011, he joined back to Department of Computer Science and Engineering, IIT Kharagpur as Professor. Dr. Das has also served as a Visiting Professor with Institute of Radio Physics and Electronics, Calcutta University from 2003 to 2013.



Prof. Samiran Chattopadhyay

Samiran Chattopadhyay obtained his B Tech and M Tech degree in 1987 and 1989 respectively from IIT Kharagpur. He obtained his PhD degree from Jadavpur University in 1993. He served as a faculty in the Department of Computer Science and Engineering, Jadavpur University from 1989 to 1993. In 1993, he moved to industry and joined back the same department in Jadavpur University as an Associate Professor in 1997. Since 2001, he is a Professor of Information Technology in Jadavpur University.

# 6. Introduction To Programming In C

By Prof. Satyadev Nandakumar | IIT Kanpur

Course layout

Week 1 : Introduction. Straight-Line Code. Variables, Operators, Expressions and

Conditionals.

Week 2 : Loops

Week 3 : Functions

Week 4 : One-Dimensional Arrays and Pointers

Week 5 : Recursion

Week 6 : Multi-dimensional Arrays, Linked Lists.

Week 7 : Operating on Files

Week 8 : Organizing C projects, working with multiple source directories, makefiles.

#### **Books and references**

Nil

Instructor bio



#### Prof. Satyadev Nandakumar

IIT Kanpur

Dr. Satyadev Nandakumar is an Assistant Professor from the Department of Computer Science and Engineering IIT Kanpur who specialises in Computable Analysis, Algorithmic Information Theory, Symbolic Dynamics. His research interests includes Theoretical Computer Science, Algorithmic Information Theory, Computable Analysis.

# **Innovation by Design**

By Prof. B.K. Chakravarthy | IDC School of Design-IIT Bombay

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Course layout

Week-1

- Module 1 Introduction,
- Module 2 First C: The Cause

Week-2

- Module 3 Second C: The Context,
- Module 4 Third C: The Comprehension

#### Week-3

- Module 5 Fourth C: The Check,
- Module 6 Fifth C: The Conception

#### Week-4

- Module 7 Sixth C: The Crafting,
- Module 8 Seventh C: The Connection

#### Books and references

#### References

- 1. Chakku 7C's Link
- 2. Collaborative Model For Innovation Link
- 3. Pitfalls in the Innovation process <u>Link</u>
- 4. Innovation By Design Collaboration is the key to cross the Pitsfalls in the Innovation Process Link

Instructor bio



**Prof. B. K. Chakravarthy** teaches Innovation by Design at the Industrial Design Centre (IDC), IIT Bombay. He has set up the Shenoy Innovation Studio at IITB, where students and young designers are given the opportunity to work on live projects and benefit from expertise

in a range of interrelated fields. Prof. Chakravarthy works closely with other academics engaged in cutting-edge research at IIT Bombay and has played a key role in translating such research into products that reach the hands of users. 'A Collaborative Model for New Product Innovation', an outcome of Prof. Chakravarthy's doctoral research, has had wide application in the industry. Prof. Chakravarthy has also worked frequently with government departments and occupational communities engaged in essential services.

Website Link : <u>http://www.idc.iitb.ac.in/chakku/index.html</u>

# **Software Conceptual Design**

By Prof. Sridhar Iyer, Prof. Prajish Prasad, Prof. T. G. Lakshmi | IIT Bombay Course layout

Week 1: Deconstructing the software design process

Week 2: Designing Software using the FBS Framework

Week 3: Comprehending and Evaluating Software Designs

Week 4: The Next Steps - Where does one go from here

Books and references

1 .Software Engineering: A Precise Approach – Dr. Pankaj Jalote.

2. Cooperative Software Development – Dr. Amy Ko.

Instructor bio



**Prof. Sridhar Iyer** 

IIT Bombay

**Sridhar Iyer** is a faculty member in the Inter-Disciplinary Program in Educational Technology, and Department of Computer Science and Engineering at IIT Bombay. His current research interests include: Technology enhanced learning environments for thinking skills, Pedagogies for effective use of educational technologies, development of ICT tools for educational applications, and Computer science education research. Sridhar Iyer received his BTech, MTech and PhD from the Dept of Computer Science & Engg. at IIT Bombay.



**Prof. Prajish Prasad** 

Dr. Prajish Prasad completed his PhD from the Interdisciplinary Programme in Educational Technology at IIT Bombay. His bachelor and master degrees are in Computer Science. He is a computing education researcher, and specializes in designing technology-enhanced learning environments for topics in computer science. The focus of his doctoral research was on fostering software design evaluation skills in students. Prior to joining his PhD, he worked as a software developer in an EdTech startup, and as an engineering instructor, teaching courses for computer science undergraduates.



Prof. T. G. Lakshmi

Dr. T.G.Lakshmi completed her PhD from the Interdisciplinary Programme in Educational Technology at IIT Bombay. She has completed her bachelor and master degrees in computer science engineering. Her doctoral research focuses on fostering software conceptual design using the Function-Behaviour-Structure design framework. She is a computing education and learning science researcher. Her interests also include designing and implementing technology-enhanced learning environments for learners. Prior to joining her PhD she was a software developer and a lecturer teaching undergraduate computer engineering students for several years.