2018-19
9

Dr. G Janardhana Reddy, Dept. of Mathematics, CUK <gjr@cuk.ac.in>

Regarding the approval of online course
2 messages

Janardhanreddy Asst.prof.Maths <gjr@cuk.ac.in>   Tue, Jul 24, 2018 at 3:10 PM
To: Reddy Y N <ynreddy@nitw.ac.in>, ybmbub@yahoo.co.in, "Bharat Kumar Asst.Prof. Physics" <bharat@cuk.ac.in>,
Venkat Narayanan <nsvenkat@gmail.com>
Cc: Gajanan Naik <grnaik2009@gmail.com>, "Dr.Sandeep N" <dr.nsrh@gmail.com>, D RANGANATHA D
<ddranganatha@gmail.com>, Sreenivasulu Ballem <sreenivasm.maths@gmail.com>

Respected BOS Members

Greetings from the Central University of Karnataka!

As you all know that UGC/MHRD is insisting to all the Universities that 20% of the courses in PG curriculum should
be done by online (MOOCs) mode only through UGC SWAYAM /NPETEL/ IIMB /NITTTR.

In view of the above, the open elective subject (3 credits) in the first semester of M.Sc Mathematics is chosen as "Soft
Skills" which is offered by NPTEL from 30 July. Please go through the following link

https://onlinecourses.nptel.ac.in/noc18_hs29/preview

Hence, I am requesting you please give your approval for offering the above open elective course as online mode.

Kindly send your remarks by July 29, 2018. In case I do not receive any comments I shall presume that you have
approved the above course as online mode.

Thanking You.

Sincerely
Dr.G. Janardhan Reddy
BOS-Chairman
--

Regards
Dr.G. Janardhan Reddy
The President's Inspired Teacher (https://en.wikipedia.org/wiki/Inspired_Teacher)
Assistant Professor & Coordinator
Department of Mathematics
Central University of Karnataka
Kalaburagi - 585 367.
Ph:- 9482015287, 9491472461
Email: gjr@cuk.ac.in

Reddy Y N <ynreddy@nitw.ac.in>   Tue, Jul 24, 2018 at 5:03 PM
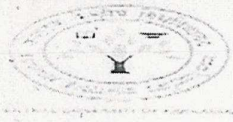To: "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>

Dear Dr. Reddy

I here by Approve the Proposal.

Prof. Y. N. Reddy
Department of Mathematics
National Institute of Technology
WARANGAL- 506 004
INDIA

Mobile: 8332969447, 9849268724

Dr. G Janardhana Reddy, Dept. of Mathematics, CUK <gjr@cuk.ac.in>

Regarding the approval of modifications in M.Sc Course Curriculum
4 messages

Janardhanreddy Asst.prof.Maths <gjr@cuk.ac.in>   Tue, Feb 19, 2019 at 1:30 PM
To: Reddy Y N <ynreddy@nitw.ac.in>, ybmbub@yahoo.co.in, "Bharat Kumar Asst.Prof. Physics" <bharat@cuk.ac.in>,
Venkat Narayanan <nsvenkat@gmail.com>
Cc: Gajanan Naik <grnaik2009@gmail.com>, "Dr.Sandeep N" <dr.nsrh@gmail.com>, D RANGANATHA D
<ddranganatha@gmail.com>, Sreenivasulu Ballem <sreenivasm.maths@gmail.com>

Respected Sir,

Greetings from the Central University of Karnataka.

This mail is to take up the following agenda over circulation mode for your perusal, inputs and approval.

From the inputs received by the faculty of Department of Mathematics, it is suggested that in the IV semester MSc
(Mathematics), the title of the component "**Project Work (Dissertation) (MA406D)**" is changed as "**Project Report
(MA406D)**". Also, this **Project Report (MA406D)** is aimed to get the research exposure for M.Sc IV semester
students. Therefore, the Department has taken the decision that Plagiarism Check is not required for this
component "**Project Report (MA406D)**".

Further, the II semester M.Sc (Mathematics) students be given an option to choose MOOCs (from NPTEL/Swayam)
in place of the **Soft Elective course (MA207E)**. The online course will be a 3 credit course in the relevant subject
area and will be approved by the faculties of the Department of Mathematics. In view of this, the Soft Elective subject
(3 credits) in the second semester of M.Sc Mathematics is chosen as "**Transform Calculus and its applications in
Differential Equations**" mentoring by Prof. Adrijit Goswami, IIT Kharagpur. Please go through the following link
https://onlinecourses.nptel.ac.in/noc19_ma04/preview

Hence, I am requesting the BOS members, please give your approval before Feb 26, 2019, for the above points
which we implemented in this semester. In case I do not receive any comments I shall presume that you have
approved the above points.

We also plan to have a **BOS meeting at CUK** during the first week of March 2019, to discuss and revise the M.Sc
course curriculum.

Enclosures: 1. M.Sc Curriculum,
          2. NPTEL Course & Syllabus.

Waiting for your kind reply,

Thanking You.

Sincerely
Dr.G. Janardhan Reddy
BOS-Chairman

--

Regards
Dr.G. Janardhan Reddy

The President's Inspired Teacher (https://en.wikipedia.org/wiki/Inspired_Teacher)
Assistant Professor & Coordinator
Department of Mathematics
Central University of Karnataka
Kalaburagi - 585 367.
Ph:- 9482015287, 9491472461
Email: gjr@cuk.ac.in

2 attachments

M.Sc Mathematics.pdf
638K

Booklet_Final_2019_Part241.pdf
14438K

Reddy Y N <ynreddy@nitw.ac.in>   Tue, Feb 19, 2019 at 2:55 PM
To: "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>

Dear Dr. Janardhanreddy,

I here by approve your proposal of two items:

1. "Project Work (Dissertation) (MA406D)" to be changed as "Project Report (MA406D)".
2. Option to choose MOOCs (from NPTEL/Swayam) in place of the Soft Elective course (MA207E)

with best wishes...

Prof. Y. N. Reddy
Department of Mathematics
National Institute of Technology
WARANGAL- 506 004
INDIA

Mobile: 8332969447, 9849268724

[Quoted text hidden]

Janardhanreddy Asst.prof.Maths <gjr@cuk.ac.in>   Tue, Feb 19, 2019 at 3:12 PM
To: Reddy Y N <ynreddy@nitw.ac.in>

Thanks a lot Sir for your immediate reply.
[Quoted text hidden]

Janardhanreddy Asst.prof.Maths <gjr@cuk.ac.in>   Tue, Feb 19, 2019 at 4:46 PM
To: "Dr.Sandeep N" <dr.nsrh@gmail.com>, D RANGANATHA D <ddranganatha@gmail.com>, Sreenivasulu Ballem
<sreenivasm.maths@gmail.com>

[Quoted text hidden]

Minutes of the Meeting of Board of Studies of Department of Mathematics, School of Physical Sciences of CUK, Kalaburagi, held during 31 March, 2019 at CUK, Kalaburagi.

Venue: On 31st March 2019, HOD Office, Department of Mathematics, CUK, Kadaganchi.

Members present:
1. Prof. Y. N. Reddy, NIT Warangal, External Member
2. Dr. G. Janardhana Reddy, CUK, BOS Chairman & Convener
3. Dr. Bharat Kumar, CUK, Dept. Of Physics, Member from allied Department
4. Dr. N. S. Venkata Narayanan, CUK, Dept. Of Chemistry, Member from allied Department

Special Invitees:
5. Dr. N. Sandeep, Assistant Professor, Dept. of Mathematics
6. Dr. B. Sreenivasulu, Assistant Professor, Dept. of Mathematics
7. Dr. Rangantha D., Assistant Professor, Dept. of Mathematics

Members on Leave:
8. Prof. Y.B. Maralabhavi, Bangalore University, External Member

Dr. G. Janardhana Reddy, Coordinator of Dept. of Mathematics, BOS Chairman & Convener welcomed the gathering and briefed the purpose of the meeting. Also, he briefed the salient features of the M.Sc. (Mathematics) program.

The following points have been discussed and recommended by the BOS members:

1. Members have referred the UGC guidelines of the Choice Based Credit System (CBCS) and recommended to follow the UGC guidelines for evaluation mentioned therein.
2. Referred the schemes of some standard/successful MSc programs in reputed Institutes / Universities.
3. Members also reviewed and discussed thoroughly the scheme and syllabus for MSc program.
4. CORE/Essential components of Pure/Applied/Statistics/Computational Mathematics are included judiciously.
5. One open elective is included in the 1st semester so that students can choose this from other Departments/MOOCs (NPTEL, SWAYAM etc.) based on their interest/choice.
6. One SOFT elective is included in 2nd semester so that students can choose to have general idea of a specified area/subject or from MOOCs (NPTEL, SWAYAM etc.).
7. One laboratory (Practicals using Computers) is included in each semester to have hands on experience/applicability of the methods.
8. Electives are listed based on the existing trends in the cutting edge areas of Mathematics.
9. The elective courses in II, III & IV semesters can be taken either via MOOCs (NPTEL, SWAYAM etc.) or from the electives offered by the Department. However, MOOCs courses (NPTEL, SWAYAM etc.) must be approved by the Department.
10. **One Seminar** component is included in 3rd Semester to train students for self-study and to deliver lectures.
11. **Research Training & Project Report (MA406R)** in the 4th Semester is included to train/expose students to the research activity. The research training & project report must be carried out under the guidance of a faculty member from the Department. In case of interdisciplinary projects, a co-guide can be chosen from other Departments, if necessary. Students have to submit two copies of project report to the Head of Department before the last working day of the Semester. Evaluation

G.J.Reddy 31/03/2019
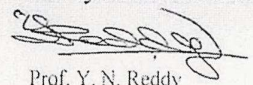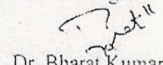
scheme: 40 % Continuous Evaluation by the Guide and 60% by the Expert Committee at the end of the Semester. The Expert Committee may be constituted by the Department with at least three members; i) HOD, ii) expert from other Department, and iii) programme coordinator of the Department. The expert committee can invite the subject experts for the evaluation of the project report or seminar, if necessary. Further, this course need not come under the purview of UGC circulated plagiarism circular.

12. **Comprehensive VIVA (ORAL Examination)** is included in the 4th Semester to assess the overall Mathematical knowledge of the students in the subjects they have studied during the programme. 100% Evaluation by the Expert Committee at the end of the Semester. The Expert Committee may be constituted by the Department with at least three members; i) HOD, ii) programme coordinator of the Department and iii) subject experts of the Department. The expert committee can invite the subject experts for the evaluation, if necessary. The comprehensive viva helps the students to face the interview or any other competitive exams.

13. Points 5 and 6 in the current minutes are applicable immediately and should be implemented starting with the current M.Sc. I year students (2018-2020 Batch).

14. Point 11 in the current minutes are applicable immediately and should be implemented starting with the current M.Sc. I and II year students (2018-2020 & 2017-2019 Batches).

15. Members have also reviewed and approved the subjects for the course work of Ph. D. program in Mathematics. List of subjects along with Syllabus is attached herewith.

16. PhD course work shall be completed by the research scholars within first two semesters as per UGC guidelines.

17. In the PhD course work, apart from MR01-Research Methodology course, rest all other courses (including elective) listed by the Department can be opted by the PhD scholars either through MOOCs (NPTEL, SWAYAM etc.) or offline mode.

18. Members have also reviewed and approved the subjects for the open electives offered for programmes in other Departments. List of subjects along with Syllabus is attached herewith.

19. BOS members strongly recommend to recruit computer laboratory technician & laboratory attenders in the Department at the earliest.

20. BOS members strongly suggest that the Department of Mathematics should be placed under the School of Mathematical Sciences. Accordingly, establishment of School of Mathematical Sciences is needed in CUK.
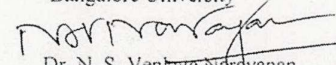
The meeting concluded with Vote of Thanks by **Dr. G. Janardhana Reddy**, BOS Chairman & Convener, thanking all the members who have been providing valuable inputs for developing the scheme and syllabus of Mathematics subjects for various programmes.
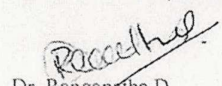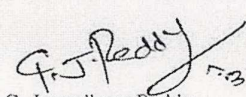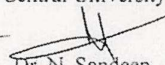
Prof. Y. N. Reddy
NIT Warangal

(on leave)
Prof. Y. B. Maralabhavi
Bangalore University

31/03/2019
Dr. G. Janardhana Reddy
Central University of Karnataka

Dr. Bharat Kumar
Central University of Karnataka

Dr. N. S. Venkata Narayanan
Central University of Karnataka

Dr. N. Sandeep
Central University of Karnataka

Dr. B. Sreenivasulu
Central University of Karnataka

Dr. Ranganatha D.
Central University of Karnataka

CENTRAL UNIVERSITY OF KARNATAKA

(Established by an Act of the Parliament in 2009)

**Department of Mathematics
School of Physical Sciences**
Kadaganchi, Aland Road,
Kalaburagi District– 585367
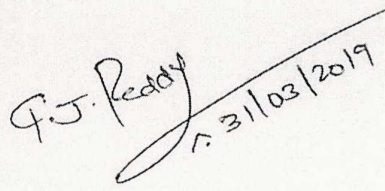
Scheme of instructions for M.Sc. (Mathematics) from the academic year 2019-2020 onwards
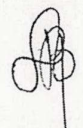
Semester I
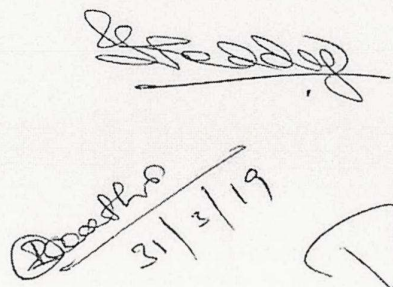
S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	MA101C	Algebra	3	0	1	4	40	60
2	MA102C	Advanced Calculus	3	0	1	4	40	60
3	MA103C	Linear Algebra	3	0	1	4	40	60
4	MA104C	Ordinary Differential Equations	3	0	1	4	40	60
5	MA105C	Discrete Mathematics	3	0	1	4	40	60
6	MA106P	Computing Laboratory-I	1	1	0	2	40	60
7		Open Elective				3	40	60
		TOTAL CREDITS				**25**		
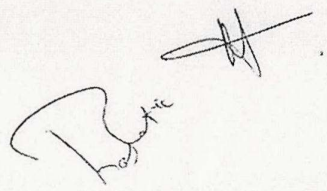
Semester II

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	MA201C	Real Analysis	3	0	1	4	40	60
2	MA202C	Topology	3	0	1	4	40	60
3	MA203C	Numerical Analysis	3	0	1	4	40	60
4	MA204C	Partial Differential Equations	3	0	1	4	40	60
5	MA205C	Probability & Statistics	3	0	1	4	40	60
6	MA206P	Computing Laboratory-II	1	1	0	2	40	60
7	MA207E	Soft Elective	3	0	0	3	40	60
		TOTAL CREDITS				**25**		

Course Structure, Department of Mathematics

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Department of Mathematics
School of Physical Sciences
Kadaganchi, Aland Road,
Kalaburagi District– 585367

Semester III

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	MA301C	Functional Analysis	3	0	1	4	40	60
2	MA302C	Complex Analysis	3	0	1	4	40	60
3	MA303C	Fluid Mechanics	3	0	1	4	40	60
4	MA304E	Elective-I	3	0	1	4	40	60
5	MA305E	Elective-II	3	0	1	4	40	60
6	MA306P	Computing Laboratory-III	1	1	0	2	40	60
7	MA307S	Seminar				2	40	60
		TOTAL CREDITS				24		

Semester IV

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	MA401C	Measure & Integration	3	0	1	4	40	60
2	MA402C	Operations Research	3	0	1	4	40	60
3	MA403E	Elective-III	3	0	1	4	40	60
4	MA404E	Elective-IV	3	0	1	4	40	60
5	MA405P	Computing Laboratory-IV	1	1	0	2	40	60
6	MA406R	Research Training & Project Report				6	40	60
7	MA407V	Comprehensive Viva				2		100
		TOTAL CREDITS				26		

TOTAL NUMBER OF CREDITS FOR THE PROGRAMME IS 100

Abbreviations

L   Lectures
P   Practicals
T   Tutorials
C   Core

Course Structure, Department of Mathematics

2 of 7

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Department of Mathematics
School of Physical Sciences

Kadaganchi, Aland Road,
Kalaburagi District– 585367

E   Electives
S   Seminars
V   Viva
R   Report
O   Open Electives

List of Soft Electives

Soft Elective
1) History of Mathematics & Mathematicians
2) Elementary Mathematical Modeling
3) Coordinate Geometry
4) Elementary Number Theory
5) Introduction to Computer Programming
6) Mathematical Methods
7) Mathematics for Biology
8) Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

List of Open Electives Offered for Other Departments

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	MO01	Elementary Mathematical Programming	3	0	0	3	40	60
2	MO02	Differential & Integral Calculus	3	0	0	3	40	60
3	MO03	Mathematical Logic	3	0	0	3	40	60
4	MO04	Mathematics for Everyone	3	0	0	3	40	60
5	MO05	Elementary Mathematical Statistics	3	0	0	3	40	60

List of Electives

Elective-I
1) Advanced Algebra
2) Classical Mechanics
3) Number Theory
4) Mathematical Modeling
5) Data Structures
6) Graph Theory
7) Tensor Analysis
8) Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

Course Structure, Department of Mathematics

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Elective-II

1) Finite Difference Methods
2) Differential Geometry
3) Design & Analysis of Algorithms
4) Continuum Mechanics
5) Ramanujan's Theta Functions
6) Fuzzy Sets and Fuzzy logic
7) Lie Group Theory and Applications
8) Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

Elective-III

1) Calculus of Variations and Finite Element Method
2) Computational Fluid Dynamics
3) Multi Objective Programming
4) Theory of Automata
5) Riemannian Geometry
6) Special Functions
7) Financial Mathematics
8) Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

Elective-IV

1) Integral Transforms and Integral Equations
2) Cryptography
3) Object Oriented Programming
4) Finite Volume Method
5) Algebraic Topology
6) Computer Graphics
7) Theory of Partitions
8) Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

Note: * MOOCs courses (NPTEL, SWAYAM etc.) must be approved by the Department.

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Department of Mathematics
School of Physical Sciences
Kadaganchi, Aland Road,
Kalaburagi District– 585367

CENTRAL UNIVERSITY OF KARNATAKA

List of subjects offered for the course work of PhD (Mathematics) Program

S.No	Course Code	Course title	Mode L	Mode P	Mode T	Credits	Internal (%)	End Sem (%)
1	MR01	Research Methodology	3	0	1	4	40	60
2	MR02	Fluid Mechanics	3	0	1	4	40	60
3	MR03	Numerical Analysis	3	0	1	4	40	60
4	MR04	Finite Difference Methods	3	0	1	4	40	60
5	MR05	Computational Fluid Dynamics	3	0	1	4	40	60
6	MR06	Matlab & Maple	1	3	0	4	40	60
7	MR07	Continuum Mechanics	3	0	1	4	40	60
8	MR08	Finite Element Method	3	0	1	4	40	60
9	MR09	Multi Variate Analysis	3	0	1	4	40	60
10	MR10	Fuzzy Mathematics	3	0	1	4	40	60
11	MR11	Finite Volume Methods	3	0	1	4	40	60
12	MR12	Bio-fluid Mechanics	3	0	1	4	40	60
13	MR13	Perturbation Methods	3	0	1	4	40	60
14	MR14	Spline Function & Applications	3	0	1	4	40	60
15	MR15	Boundary Layer Theory	3	0	1	4	40	60
16	MR16	Theory of Partitions	3	0	1	4	40	60
17	MR17	Ramanujan's Theta Functions and Applications to Number Theory	3	0	1	4	40	60
18	MRE01	Elective-I	3	0	1	4	As per MOOCs*	
19	MRE02	Elective-II	3	0	1	4	As per MOOCs*	

Note: The PhD courses MRE01(Elective-I) **&** MRE02 (Elective-II) can be chosen from Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.

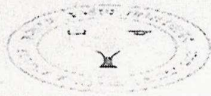* MOOCs courses must be approved by the Department.

Course Structure, Department of Mathematics

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Regarding the approval of modifications in PhD Course Curriculum

Head Department of Mathematics <hodmathematics@cuk.ac.in>   Thu, Jan 14, 2021 at 4:35 PM
To: vsugunar@gmail.com, vsuguna@svuniversity.edu.in, kasi@nitw.ac.in, "Dr.Sandeep N" <dr.nsrh@gmail.com>, Bharat Kumar <bharat@cuk.ac.in>, Venkat Narayanan <nsvenkat@gmail.com>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>
Cc: Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel <deepaksamuel@cuk.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>

Respected Sir/Madam,

Greetings from the Departemt of Mathematics, Central University of Karnataka.

This mail is to take up the following agenda over circulation mode for your perusal, inputs and approval.

From the inputs received by the CUK administration, Internal Quality Assurance Cell (IQAC) and faculty of the Department of Mathematics, the following changes have been made to the existing Ph.D. course work curriculum which is approved by BOS on 31-03-2019.

(1) Few titles of Ph.D. coursework have been changed since "to maintain unique course codes and titles" as suggested by IQAC.
(2) Research and Publication Ethics Course has been included in PhD Course work as suggested by UGC.
(3) New courses namely "Advanced Differential Equations", "Advanced Functional Analysis", "Mathematical Theory of Control", "Advanced Linear Algebra" have been included in Ph.D. coursework to cover all the research areas in the Department.

Hence, in view of the above, I am requesting the BOS members, please give your approval on or before Jan 21, 2021, for the above points which we implemented this semester for Ph.D. Course work. In case I do not receive any comments I shall presume that you have approved the above points.

Very soon, we also plan to have a **BOS meeting via online/offline mode** during the month of February 2021, to discuss and revise the M.Sc course curriculum.

Enclosures: 1. Modified Ph.D. Course Work Curriculum
                    2.Existing M.SC & Ph.D. course curriculum which is approved by BOS on 31-03-2019.

Waiting for your kind reply,

Thanking You.

Sincerely
Dr. G. Janardhana Reddy
BOS-Chairman,
Coordinator, Dept. of Mathematics

2 attachments

📄 PhD Syllabus outline BOS 14-01-2021.pdf
   246K

📄 BOS-31-03-2019.pdf
   2869K

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Regarding the approval of modifications in PhD Course Curriculum

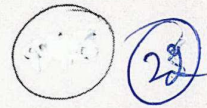Bharat Kumar <bharat@cuk.ac.in>   Thu, Jan 14, 2021 at 4:53 PM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>

Dear sir,
The changes may be approved.
With best regards,
Bharat Kumar.
[Quoted text hidden]

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Regarding the approval of modifications in PhD Course Curriculum

Sugunamma V <vsugunar@gmail.com>   Tue, Jan 19, 2021 at 11:47 AM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
Cc: vsuguna@svuniversity.edu.in, kasi@nitw.ac.in, "Dr.Sandeep N" <dr.nsrh@gmail.com>, Bharat Kumar
<bharat@cuk.ac.in>, Venkat Narayanan <nsvenkat@gmail.com>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>, Dean
School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel <deepaksamuel@cuk.ac.in>, "Sreenivasulu Ballem
Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics"
<ranganathad@cuk.ac.in>

Good morning sir.
I approved the phD course curriculum.
Thank you.
[Quoted text hidden]

CENTRAL UNIVERSITY OF KARNATAKA
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Department of Mathematics
School of Physical Sciences
Kadaganchi, Aland Road,
Kalaburagi District– 585367

Scheme of instructions for M.Sc. (Mathematics) from the academic year 2020-2021 onwards

Semester I

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC10001	Algebra	3	0	1	4	40	60
2	PMATC10002	Advanced Calculus	3	0	1	4	40	60
3	PMATC10003	Linear Algebra	3	0	1	4	40	60
4	PMATC10004	Ordinary Differential Equations	3	0	1	4	40	60
5	PMATC10005	Discrete Mathematics	3	0	1	4	40	60
6	PMACC10006	Computing Laboratory-I	1	3	0	2	40	60
7		Generic Elective	3	0	0	3	40	60
		TOTAL CREDITS				25		

Semester II

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC20007	Real Analysis	3	0	1	4	40	60
2	PMATC20008	Topology	3	0	1	4	40	60
3	PMATC20009	Numerical Analysis	3	0	1	4	40	60
4	PMATC20010	Partial Differential Equations	3	0	1	4	40	60
5	PMATC20011	Probability & Statistics	3	0	1	4	40	60
6	PMACA20101	Computing Laboratory-II	1	3	0	2	40	60
7		Soft Elective	3	0	0	3	40	60
		TOTAL CREDITS				25		

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Semester III

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC30012	Functional Analysis	3	0	1	4	40	60
2	PMATC30013	Complex Analysis	3	0	1	4	40	60
3	PMATC30014	Fluid Mechanics	3	0	1	4	40	60
4		Discipline Specific Elective-I	3	0	0	3	40	60
5		Discipline Specific Elective-II	3	0	0	3	40	60
6	PMACA30102	Computing Laboratory-III	1	3	0	2	40	60
7	PMATA30103	Seminar	0	4	0	2	40	60
		TOTAL CREDITS				22		

Semester IV

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC40015	Measure & Integration	3	0	1	4	40	60
2	PMATC40016	Operations Research	3	0	1	4	40	60
3		Discipline Specific Elective-III	3	0	0	3	40	60
4		Discipline Specific Elective-IV	3	0	0	3	40	60
5	PMACA40104	Computing Laboratory-IV	1	3	0	2	40	60
6	PMARC40017	Research Training & Project Report	0	6	3	6	40	60
7	PMATA40105	Comprehensive Viva	0	0	2	2		100
		TOTAL CREDITS				24		

TOTAL NUMBER OF CREDITS FOR THE PROGRAMME IS 96

CENTRAL UNIVERSITY OF KARNATAKA
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Department of Mathematics
School of Physical Sciences
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List of Electives

List of Generic Electives Offered for Other Departments

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATG10301	Elementary Mathematical Programming	3	0	0	3	40	60
2	PMATG10302	Differential & Integral Calculus	3	0	0	3	40	60
3	PMATG10303	Mathematical Logic	3	0	0	3	40	60
4	PMATG10304	Mathematics for Everyone	3	0	0	3	40	60
5	PMATG10305	Elementary Mathematical Statistics	3	0	0	3	40	60

List of Soft Electives (II Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD20201	History of Mathematics & Mathematicians	3	0	0	3	40	60
2	PMATD20202	Elementary Mathematical Modeling	3	0	0	3	40	60
3	PMATD20203	Coordinate Geometry	3	0	0	3	40	60
4	PMATD20204	Elementary Number Theory	3	0	0	3	40	60
5	PMACD20205	Introduction to Computer Programming	3	0	0	3	40	60
6	PMATD20206	Mathematical Methods	3	0	0	3	40	60
7	PMATD20207	Mathematics for Biology	3	0	0	3	40	60
8	PMATD20208	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

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List of Discipline Specific Electives-I (III Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD30209	Advanced Algebra	3	0	0	3	40	60
2	PMATD30210	Classical Mechanics	3	0	0	3	40	60
3	PMATD30211	Number Theory	3	0	0	3	40	60
4	PMATD30212	Mathematical Modeling	3	0	0	3	40	60
5	PMATD30213	Data Structures	3	0	0	3	40	60
6	PMATD30214	Graph Theory	3	0	0	3	40	60
7	PMATD30215	Tensor Analysis	3	0	0	3	40	60
8	PMATD30216	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

List of Discipline Specific Electives-II (III Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD30217	Finite Difference Methods	3	0	0	3	40	60
2	PMATD30218	Differential Geometry	3	0	0	3	40	60
3	PMATD30219	Design & Analysis of Algorithms	3	0	0	3	40	60
4	PMATD30220	Continuum Mechanics	3	0	0	3	40	60
5	PMATD30221	Ramanujan's Theta Functions	3	0	0	3	40	60
6	PMATD30222	Fuzzy Sets and Fuzzy logic	3	0	0	3	40	60
7	PMATD30223	Lie Group Theory and Applications	3	0	0	3	40	60
8	PMATD30224	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

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List of Discipline Specific Electives-III (IV Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD40225	Calculus of Variations and Finite Element Method	3	0	0	3	40	60
2	PMATD40226	Computational Fluid Dynamics	3	0	0	3	40	60
3	PMATD40227	Multi Objective Programming	3	0	0	3	40	60
4	PMATD40228	Theory of Automata	3	0	0	3	40	60
5	PMATD40229	Riemannian Geometry	3	0	0	3	40	60
6	PMATD40230	Special Functions	3	0	0	3	40	60
7	PMATD40231	Financial Mathematics	3	0	0	3	40	60
8	PMATD40232	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

List of Discipline Specific Electives-IV (IV Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD40233	Integral Transforms and Integral Equations	3	0	0	3	40	60
2	PMATD40234	Cryptography	3	0	0	3	40	60
3	PMACD40235	Object Oriented Programming	3	0	0	3	40	60
4	PMATD40236	Finite Volume Method	3	0	0	3	40	60
5	PMATD40237	Algebraic Topology	3	0	0	3	40	60
6	PMATD40238	Computer Graphics	3	0	0	3	40	60
7	PMATD40239	Theory of Partitions	3	0	0	3	40	60
8	PMATD40240	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

Note: * MOOCs courses (NPTEL, SWAYAM etc.) must be approved by the Department.

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List of subjects offered for the course work of PhD (Mathematics) Program

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	DMATC10001	Research Methodology	3	0	1	4	40	60
2	DMATA10101	Research and Publication Ethics	2	0	0	2	40	60
3	DMATC10002	Advanced Fluid Mechanics	3	0	1	4	40	60
4	DMATC10003	Advanced Numerical Analysis	3	0	1	4	40	60
5	DMATC10004	Advanced Finite Difference Methods	3	0	1	4	40	60
6	DMATC10005	Advanced Computational Fluid Dynamics	3	0	1	4	40	60
7	DMACC10006	Programming Tools for Research	1	2	1	4	40	60
8	DMATC10007	Advanced Continuum Mechanics	3	0	1	4	40	60
9	DMATC10008	Advanced Finite Element Method	3	0	1	4	40	60
10	DMATC10009	Multi Variate Analysis	3	0	1	4	40	60
11	DMATC10010	Fuzzy Mathematics	3	0	1	4	40	60
12	DMATC10011	Advanced Finite Volume Method	3	0	1	4	40	60
13	DMATC10012	Bio-fluid Mechanics	3	0	1	4	40	60
14	DMATC10013	Perturbation Methods	3	0	1	4	40	60
15	DMATC10014	Spline Function & Applications	3	0	1	4	40	60
16	DMATC10015	Boundary Layer Theory	3	0	1	4	40	60
17	DMATC10016	Advanced Theory of Partitions	3	0	1	4	40	60
18	DMATC10017	Ramanujan's Theta Functions and Applications to Number Theory	3	0	1	4	40	60

PhD Course Structure, Department of Mathematics

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19	DMATC10018	Advanced Differential Equations	2	0	1	3	40	60
20	DMATC10019	Mathematical Theory of Control	2	0	1	3	40	60
21	DMATC10020	Advanced Functional Analysis	1	0	1	2	40	60
22	DMATC10021	Advanced Linear Algebra	1	0	1	2	40	60
23	DMATD10201	Elective-I	3	0	1	4	As per MOOCs*	
24	DMATD10202	Elective-II	3	0	1	4	As per MOOCs*	

* MOOCs courses must be approved by the Department.

PhD Course Structure, Department of Mathematics

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Regarding the approval of unique course codes in MSc & PhD Course Curriculum

1 message

Head Department of Mathematics <hodmathematics@cuk.ac.in>   Mon, Mar 8, 2021 at 2:22 PM
To: vsugunar@gmail.com, kasi@nitw.ac.in, "Dr.Sandeep N" <dr.nsrh@gmail.com>, Bharat Kumar <bharat@cuk.ac.in>,
Venkat Narayanan <nsvenkat@gmail.com>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>
Cc: Dean School of Physical Sciences <deansps@cuk.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics"
<sreenivasulu@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>

Respected Sir/Madam,

Greetings from the Department of Mathematics, Central University of Karnataka.

This mail is to take up the following agenda over circulation mode for your perusal, inputs and approval.

From the inputs received by the CUK administration, Internal Quality Assurance Cell (IQAC) and faculty of the
Department of Mathematics, the unique course codes have been implemented to the existing curriculum which was
approved by BOS on 31-03-2019.

Hence, in view of the above, I am requesting the BOS members, please give your approval on or before March 14,
2021, for implementing the unique course codes. In case I do not receive any comments I shall presume that you
have approved the above points.

Very soon, we also plan to have a **BOS meeting via online/offline mode** during the month of April 2021, to discuss
and revise the M.Sc course curriculum.

Enclosures: MSc & PhD Mathematics-Unique course codes

Waiting for your kind reply,

Thanking You.

Sincerely
Dr. G. Janardhana Reddy
BOS-Chairman,
Coordinator, Dept. of Mathematics

📊 **MSc & PhD Mathematics Programmes Unique Course Codes.xlsx**
55K

2021-2022

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Regarding the approval of modifications in M.Sc. Course Curriculum

Head Department of Mathematics <hodmathematics@cuk.ac.in>   Fri, Jul 16, 2021 at 5:22 PM
To: kasi@nitw.ac.in, vsugunar@gmail.com, Bharat Kumar <bharat@cuk.ac.in>, "Dr. N S Venkata Narayanan Asst. Prof.
Chemistry" <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>,
"Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>
Cc: Dean School of Physical Sciences <deansps@cuk.ac.in>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>, "Dr. N
Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>

Respected Sir/Madam,

Greetings from the Department of Mathematics, Central University of Karnataka.

This mail is to take up the following agenda over circulation mode for your perusal, inputs and approval.

From the inputs received by the CUK administration, Internal Quality Assurance Cell (IQAC) and faculty of the
Department of Mathematics, the following changes have been made to the existing M.Sc. course curriculum which is
approved by BOS on 31-03-2019.

(1) The unique course codes have been implemented to the existing curriculum.
(2) Learning Outcomes-Based Curriculum Framework (LOCF) has been implemented to the existing curriculum.
(3) For the discipline specific elective courses in third and fourth semesters, the number of credits reduced from 4 to 3.
Therefore, the total number of credits for the M.Sc. Mathematics course reduced from 100 to 96.

Hence, in view of the above, I am requesting the BOS members, please give your approval on or before July 23, 2021, for
implementing the unique course codes, LOCF and reduction of credits to the existing course structure. In case I do not
receive any comments I shall presume that you have approved the above points.

Tentatively very soon, we also plan to have a **BOS meeting via online/offline mode** during the month of September
2021, to discuss and revise the M.Sc course curriculum as per National Educational Policy (NEP).

Enclosures: 1. Modified M.Sc. course curriculum with LOCF
            2. Existing M.Sc. course curriculum which is approved by BOS on 31-03-2019 for your perusal.

Waiting for your kind reply,

Thanking You.

Sincerely
Sreenivasulu Ballem
BOS Chairman & Convener

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2 attachments

📄 M.Sc. Mathematics Course Structure and LOCF.pdf
    1853K

📄 BOS-31-03-2019.pdf
    2869K

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Scheme of instructions for M.Sc. (Mathematics) from the academic year 2020-2021 onwards

Semester I

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC10001	Algebra	3	0	1	4	40	60
2	PMATC10002	Advanced Calculus	3	0	1	4	40	60
3	PMATC10003	Linear Algebra	3	0	1	4	40	60
4	PMATC10004	Ordinary Differential Equations	3	0	1	4	40	60
5	PMATC10005	Discrete Mathematics	3	0	1	4	40	60
6	PMACC10006	Computing Laboratory-I	1	3	0	2	40	60
7		Generic Elective	3	0	0	3	40	60
		TOTAL CREDITS				**25**		

Semester II

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC20007	Real Analysis	3	0	1	4	40	60
2	PMATC20008	Topology	3	0	1	4	40	60
3	PMATC20009	Numerical Analysis	3	0	1	4	40	60
4	PMATC20010	Partial Differential Equations	3	0	1	4	40	60
5	PMATC20011	Probability & Statistics	3	0	1	4	40	60
6	PMACA20101	Computing Laboratory-II	1	3	0	2	40	60
7		Soft Elective	3	0	0	3	40	60
		TOTAL CREDITS				**25**		

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Semester III

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC30012	Functional Analysis	3	0	1	4	40	60
2	PMATC30013	Complex Analysis	3	0	1	4	40	60
3	PMATC30014	Fluid Mechanics	3	0	1	4	40	60
4		Discipline Specific Elective-I	3	0	0	3	40	60
5		Discipline Specific Elective-II	3	0	0	3	40	60
6	PMACA30102	Computing Laboratory-III	1	3	0	2	40	60
7	PMATA30103	Seminar	0	4	0	2	40	60
		TOTAL CREDITS				**22**		

Semester IV

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATC40015	Measure & Integration	3	0	1	4	40	60
2	PMATC40016	Operations Research	3	0	1	4	40	60
3		Discipline Specific Elective-III	3	0	0	3	40	60
4		Discipline Specific Elective-IV	3	0	0	3	40	60
5	PMACA40104	Computing Laboratory-IV	1	3	0	2	40	60
6	PMARC40017	Research Training & Project Report	0	6	3	6	40	60
7	PMATA40105	Comprehensive Viva	0	0	2	2		100
		TOTAL CREDITS				**24**		

TOTAL NUMBER OF CREDITS FOR THE PROGRAMME IS 96

CENTRAL UNIVERSITY OF KARNATAKA

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CENTRAL UNIVERSITY OF KARNATAKA

Department of Mathematics
School of Physical Sciences
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List of Electives

List of Generic Electives Offered for Other Departments

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATG10301	Elementary Mathematical Programming	3	0	0	3	40	60
2	PMATG10302	Differential & Integral Calculus	3	0	0	3	40	60
3	PMATG10303	Mathematical Logic	3	0	0	3	40	60
4	PMATG10304	Mathematics for Everyone	3	0	0	3	40	60
5	PMATG10305	Elementary Mathematical Statistics	3	0	0	3	40	60

List of Soft Electives (II Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD20201	History of Mathematics & Mathematicians	3	0	0	3	40	60
2	PMATD20202	Elementary Mathematical Modeling	3	0	0	3	40	60
3	PMATD20203	Coordinate Geometry	3	0	0	3	40	60
4	PMATD20204	Elementary Number Theory	3	0	0	3	40	60
5	PMACD20205	Introduction to Computer Programming	3	0	0	3	40	60
6	PMATD20206	Mathematical Methods	3	0	0	3	40	60
7	PMATD20207	Mathematics for Biology	3	0	0	3	40	60
8	PMATD20208	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

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List of Discipline Specific Electives-I (III Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD30209	Advanced Algebra	3	0	0	3	40	60
2	PMATD30210	Classical Mechanics	3	0	0	3*	40	60
3	PMATD30211	Number Theory	3	0	0	3	40	60
4	PMATD30212	Mathematical Modeling	3	0	0	3	40	60
5	PMATD30213	Data Structures	3	0	0	3	40	60
6	PMATD30214	Graph Theory	3	0	0	3	40	60
7	PMATD30215	Tensor Analysis	3	0	0	3	40	60
8	PMATD30216	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

List of Discipline Specific Electives-II (III Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD30217	Finite Difference Methods	3	0	0	3	40	60
2	PMATD30218	Differential Geometry	3	0	0	3	40	60
3	PMATD30219	Design & Analysis of Algorithms	3	0	0	3	40	60
4	PMATD30220	Continuum Mechanics	3	0	0	3	40	60
5	PMATD30221	Ramanujan's Theta Functions	3	0	0	3	40	60
6	PMATD30222	Fuzzy Sets and Fuzzy logic	3	0	0	3	40	60
7	PMATD30223	Lie Group Theory and Applications	3	0	0	3	40	60
8	PMATD30224	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

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List of Discipline Specific Electives-III (IV Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD40225	Calculus of Variations and Finite Element Method	3	0	0	3	40	60
2	PMATD40226	Computational Fluid Dynamics	3	0	0	3	40	60
3	PMATD40227	Multi Objective Programming	3	0	0	3	40	60
4	PMATD40228	Theory of Automata	3	0	0	3	40	60
5	PMATD40229	Riemannian Geometry	3	0	0	3	40	60
6	PMATD40230	Special Functions	3	0	0	3	40	60
7	PMATD40231	Financial Mathematics	3	0	0	3	40	60
8	PMATD40232	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

List of Discipline Specific Electives-IV (IV Semester)

S. No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	PMATD40233	Integral Transforms and Integral Equations	3	0	0	3	40	60
2	PMATD40234	Cryptography	3	0	0	3	40	60
3	PMACD40235	Object Oriented Programming	3	0	0	3	40	60
4	PMATD40236	Finite Volume Method	3	0	0	3	40	60
5	PMATD40237	Algebraic Topology	3	0	0	3	40	60
6	PMATD40238	Computer Graphics	3	0	0	3	40	60
7	PMATD40239	Theory of Partitions	3	0	0	3	40	60
8	PMATD40240	Massive Open Online Courses (MOOCs)* through NPTEL, SWAYAM etc.				3	As per MOOCs*	

Note: * MOOCs courses (NPTEL, SWAYAM etc.) must be approved by the Department.

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Department of Mathematics
School of Physical Sciences

Kadaganchi, Aland Road,
Kalaburagi District– 585367

List of subjects offered for the course work of PhD (Mathematics) Program

S.No	Course Code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem (%)
1	DMATC10001	Research Methodology	3	0	1	4	40	60
2	DMATA10101	Research and Publication Ethics	2	0	0	2	40	60
3	DMATC10002	Advanced Fluid Mechanics	3	0	1	4	40	60
4	DMATC10003	Advanced Numerical Analysis	3	0	1	4	40	60
5	DMATC10004	Advanced Finite Difference Methods	3	0	1	4	40	60
6	DMATC10005	Advanced Computational Fluid Dynamics	3	0	1	4	40	60
7	DMACC10006	Programming Tools for Research	1	2	1	4	40	60
8	DMATC10007	Advanced Continuum Mechanics	3	0	1	4	40	60
9	DMATC10008	Advanced Finite Element Method	3	0	1	4	40	60
10	DMATC10009	Multi Variate Analysis	3	0	1	4	40	60
11	DMATC10010	Fuzzy Mathematics	3	0	1	4	40	60
12	DMATC10011	Advanced Finite Volume Method	3	0	1	4	40	60
13	DMATC10012	Bio-fluid Mechanics	3	0	1	4	40	60
14	DMATC10013	Perturbation Methods	3	0	1	4	40	60
15	DMATC10014	Spline Function & Applications	3	0	1	4	40	60
16	DMATC10015	Boundary Layer Theory	3	0	1	4	40	60
17	DMATC10016	Advanced Theory of Partitions	3	0	1	4	40	60
18	DMATC10017	Ramanujan's Theta Functions and Applications to Number Theory	3	0	1	4	40	60

PhD Course Structure, Department of Mathematics

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19	DMATC10018	Advanced Differential Equations	2	0	1	3	40	60
20	DMATC10019	Mathematical Theory of Control	2	0	1	3	40	60
21	DMATC10020	Advanced Functional Analysis	1	0	1	2	40	60
22	DMATC10021	Advanced Linear Algebra	1	0	1	2	40	60
23	DMATD10201	Elective-I	3	0	1	4	As per MOOCs*	
24	DMATD10202	Elective-II	3	0	1	4	As per MOOCs*	

* MOOCs courses must be approved by the Department.

PhD Course Structure, Department of Mathematics

Head Department of Mathematics <hodmathematics@cuk.ac.in>

BOS meeting @Dept. of Mathematics, CUK-reg.

5 messages

Head Department of Mathematics <hodmathematics@cuk.ac.in>   5 July 2022 at 18:57
To: vsugunar@gmail.com, Kasi Viswanadham K N S <kasi@nitw.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>
Cc: Dean School of Physical Sciences <deansps@cuk.ac.in>, Registrar CUK <registrar@cuk.ac.in>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>

Respected Professors,

Greetings from the Department of Mathematics, Central University of Karnataka!

I am happy to inform you that the Department of Mathematics, School of Physical Sciences, Central University of Karnataka would like to conduct a **Board of Studies (BOS) meeting on 07-07-2022, at 3:00 pm through the online mode**. The agenda of this BOS meeting is as follows

1. Approval of first year Mathematics syllabus and course structure for four years UG (Mathematics and Computer Science Combination) programme as per the New Education Policy, which is going to be implemented in CUK from the academic year 2022-23.
2. Approval of list of generic elective mathematics courses offered to UG programmes other than B.Sc.(PCM) programmes.

I am herewith attaching mathematics syllabus and course structure of the above mentioned programmes. Please find the attachments and kindly go through the same. Kindly join online meeting using the below Google meeting link:
https://meet.google.com/odt-eydf-awn

We are looking forward to seeing you all in the meeting.

Thank you.

With Regards,
Sreenivasulu Ballem

2 attachments

📄 **UG (M&C), First Year Mathematics Syllabus, 07-07-2022.pdf**
401K

📄 **UG-List of Generic Electives, 07-07-2022.pdf**
496K

Head Department of Mathematics <hodmathematics@cuk.ac.in>   11 July 2022 at 18:44
To: vsugunar@gmail.com, Kasi Viswanadham K N S <kasi@nitw.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>
Cc: Dean School of Physical Sciences <deansps@cuk.ac.in>, "Janardhanreddy Asst.prof.Maths" <gjr@cuk.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Registrar CUK <registrar@cuk.ac.in>

Respected Professors,

Thanking you very much for attending the BOS meeting held on 07-07-2022 through online mode. The modifications/corrections are done in the first year Mathematics syllabus and course structure for four year UG programme and UG generic elective Mathematics courses as per the BOS members suggested corrections and these corrections are highlighted in red colour. Kindly find the attachments.

I am requesting the BOS members, please give your approval these syllabi and course structures on or before 17-07-2022. In case, I do not receive any comments I shall presume that you have approved the above mentioned syllabi and course structures.

Thank you.

With regards
Sreenivasulu Ballem
[Quoted text hidden]

2 attachments

📄 **UG-Generic Elective(Course Structure and syllabus).pdf**
499K

📄 **I Year Mathematics Syllabus and Course Structure.pdf**
401K

Kasi Viswanadham K N S <kasi@nitw.ac.in>   12 July 2022 at 14:26
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>

Dear Dr.Srinivas,

I have gone through the modified syllabus. All the suggestions given in the BOS meeting are incorporated.

As per my opinion, no more modifications are required.

I appreciate the entire team who took a lot of pain to frame the present syllabus.

With regards.

[Quoted text hidden]
--

Prof.K.N.S.Kasi Viswanadham

Department of Mathematics

National Institute of Technology

Warangal - 506 004 (INDIA)

Mobile: +91- 98660 28867

Head Department of Mathematics <hodmathematics@cuk.ac.in>   18 August 2022 at 16:17
To: vsugunar@gmail.com, Kasi Viswanadham K N S <kasi@nitw.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>

Respected Professors,

Greetings of the day!

I am herewith attaching the minutes of the Board of Studies (BOS) meeting held on 07-07-2022. This is for your kind information.

Thanking you.

With regards
Sreenivasulu Ballem
[Quoted text hidden]

📄 **Minutes BOS meeting 07-07-2022.pdf**
292K

Head Department of Mathematics <hodmathematics@cuk.ac.in>   13 July 2023 at 11:48
To: "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>

Sir, please find approved MDC courses. Prepare accordingly.
[Quoted text hidden]
--

Regards
Dr. G Janardhana Reddy

The President's Inspired Teacher (https://en.wikipedia.org/wiki/Inspired_Teacher)
Associate Professor & Head
Department of Mathematics
Central University of Karnataka
Kalaburagi - 585 367.
Ph:- 9491472461
Email: hodmathematics@cuk.ac.in; gjr@cuk.ac.in

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2 attachments

📄 **UG-Generic Elective(Course Structure and syllabus).pdf**
499K

📄 **I Year Mathematics Syllabus and Course Structure.pdf**
401K

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List of generic elective courses offer to the UG programme other than B.Sc. (PCM) programme from the academic year 2021-22 onwards.

Semester I

S. No	Course code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	UMATG10301	Differential Calculus	5	0	1	6	40	60
2	UMATG10302	Basics of Linear algebra	5	0	1	6	40	60

Semester II

S. No	Course code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	UMATG20303	Integral Calculus	5	0	1	6	40	60
2	UMATG20304	Elementary Statistics	5	0	1	6	40	60

Semester III

S. No	Course code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	UMATG30305	Introduction to Numerical Methods	5	0	1	6	40	60
2	UMATG30306	Matric Theory	5	0	1	6	40	60

Semester IV

S. No	Course code	Course title	Mode			Credits	Assessment	
			L	P	T		Internal (%)	End Sem. (%)
1	UMATG40307	Linear programming	5	0	1	6	40	60
2	UMATG40308	Introduction to Number Theory	5	0	1	6	40	60

Minutes of the Meeting of Board of Studies of Department of Mathematics, School of Physical Sciences of CUK, Kalaburagi, held during 25-05-2023 at CUK, Kalaburagi through Blended Mode.

Venue: On 25th May 2023, HOD Office, Department of Mathematics, CUK, Kadaganchi.

Members present:
1. Dr. G. Janardhana Reddy, Assoc. Professor & Head, Dept. of Mathematics, CUK, BOS Chairman & Convener.
2. Prof. K.N.S. Kasi Viswanadham, Professor, Dept. of Mathematics, NIT Warangal, External Member.
3. Prof. V. Sugunamma, Professor, Dept. of Mathematics, S.V. University, Tirupati, External Member.
4. Dr. Ranganatha D., Asst. Professor, Dept. of Mathematics, CUK, Internal Member.
5. Dr. Bharat Kumar, Assoc. Professor, Dept. of Physics, CUK, Member from allied Department.
6. Dr. N. S. Venkata Narayanan, Assoc. Professor, Dept. of Chemistry, CUK, Member from allied Department.

Special Invitees:
7. Dr. Deepak Samuel, Dean, School of Physical Sciences, CUK.
8. Dr. V. Sandeep, Head, Dept. of EEE, NIT Andhra Pradesh.
9. Dr. N. Sandeep, Assistant Professor, Dept. of Mathematics, CUK.
10. Dr. B. Sreenivasulu, Assistant Professor, Dept. of Mathematics, CUK.

Members on Leave: NIL

Dr. G. Janardhana Reddy, Head of Dept. of Mathematics, BOS Chairman & Convener welcomed the gathering and briefed the purpose of the meeting to discuss about the course structure of B. Tech in Mathematics and Computing from the academic year 2023-24 onwards. Also, he thanked all the BOS members for giving their approval to start this new B. Tech program in the Dept. of Mathematics. Further, **Dr. Deepak Samuel, Dean, School of Physical Sciences** explained the salient features of the B.Tech. in Mathematics and Computing program. Also, **Dr. V. Sandeep, Head, Dept. of EEE, NIT Andhra Pradesh** briefed the guidelines of B. Tech Program as per the AICTE and few reputed premier intuitions across the country. He also emphasized that weightage should be given more to skill development courses in the curriculum.

The following points have been discussed and recommended by the BOS members:

1. Members have referred to the AICTE guidelines of the Model Curriculum for Four Year UG B. Tech Degree Course in Engineering and Technology and recommended to follow the AICTE guidelines for designing the curriculum with minor deviations. The details of category of courses and credits suggested by AICTE curriculum, proposed credits by CUK and comparison of suggested breakup of AICTE and CUK curriculum are attached in a separate sheet.
2. Members have referred to the UGC guidelines of the Choice Based Credit System (CBCS) and recommended to follow the UGC guidelines for evaluation mentioned therein.
3. Referred the schemes of some standard/successful B. Tech programs in reputed Institutes/ Universities.
4. Members also reviewed the NEP 2020 guidelines and designed the scheme and course structure of B. Tech program as per NEP 2020.
5. CORE/Essential components of Pure/Applied/Statistics/Computational Mathematics along with related theoretical computer science courses are included judiciously.
6. As a part of NEP 2020, Multi-Disciplinary Courses are included in the first three semesters so that the students can choose these courses from other Departments/MOOCs (NPTEL, SWAYAM etc.) based on their interest/choice.
7. Laboratories (Practical's using Computers) are included in all the semesters (I-VII) to have hands on experience/applicability of the methods.
8. Electives are listed based on the existing trends in the cutting-edge areas of Mathematics and Computing.
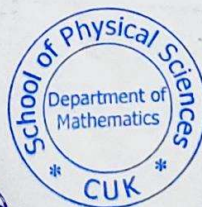
9. The elective courses in all semesters (V-VIII) can be taken either via MOOCs (NPTEL, SWAYAM etc.) or from the electives offered by the Department. However, MOOCs courses (NPTEL, SWAYAM etc.) must be approved by the Department.

10. Evaluation criteria (Assessment) for all theory and practical courses will be followed as per CUK norms (Internal 40 % and End Sem 60%). However, the courses like Summer Internship and Comprehensive Viva will be evaluated at a single time during the end examination with 100% weightage.

11. **Summer Internship** is evaluated in the seventh Semester to assess the importance of their work and knowledge in which the students worked during the Internship programme. 100% Evaluation by the Expert Committee in the seventh Semester. The Expert Committee may be constituted by the Department with at least three members; i) HOD, ii) course coordinator of the programme and iii) subject experts of the Department. The expert committee can invite the external subject experts for the evaluation, if necessary. The students should do at least one Summer Internship at the end of first/second/third year with a duration of minimum 30-45 days at Institutes/Organizations/Industries and produce the certificate of completion to the Department. The summer internship helps the students to improve their research/technical skills and having general awareness about the working culture in the industry and research organizations.

12. **Mini Project** component is included in 6th Semester to train students for self-study and have the scope to choose the research area in which they want to do the project in the final year. Students have to submit one copy of project report to the Head of Department before the last working day of the 6th Semester. Evaluation scheme: 40 % (Internal) and 60% (External) by the Expert Committee. The expert committee for this course is similar to as described above in point 11.

13. **Project Work** is divided in to Part-A & Part-B and included in the 7th and 8th Semesters, respectively to train/expose students to the research activity. The project work must be carried out under the guidance of a faculty member from the Department. In case of interdisciplinary projects, a co-guide can be chosen from other Departments, if necessary. **Part-A:** Students have to submit one copy of project work to the Head of Department before the last working day of the seventh semester. Evaluation scheme: 40 % Continuous Evaluation by the Guide and 60% by the Expert Committee at the end of the seventh semester. The Expert Committee may be constituted by the Department with at least four members; i) HOD, ii) expert from other/internal Department, iii) supervisor and iv) course coordinator of the programme. The expert committee can invite the external subject experts for the evaluation of the project report or seminar, if necessary. **Part-B:** The students have to chose one elective course related to project work under the guidance of a supervisor. The supervisor will evaluate this elective course and submit the marks to the HOD. If the students are in industrial training, the elective course examination related to project work may be conducted online. The supervisor may allow the students to send them outside (industry/institutions/research organizations) to carry out their project work based on their request. However, such requests must be approved by HOD before sending them outside. Students have to submit two copies of project work (includes the work of Part-A & Part-B) to the Head of Department before the last working day of the eight semester. The evaluation scheme and the expert Committee for this Project Work Part-B course are similar to as mentioned in the above Project Work Part-A course.

14. **Comprehensive VIVA (ORAL Examination)** is included in the 8th Semester to assess the overall Mathematical/Computation/Theoretical Computer Science knowledge of the students in the subjects they have studied during the programme. 100% Evaluation by the Expert Committee at the end of the Semester. The expert committee for this course is similar to as described above in point 11. The comprehensive viva helps the students to face the interview or any other competitive exams.

15. **Minor Degree in Artificial Intelligence, Machine Learning and Data Science (AI, ML & DS)** is offered as per NEP 2020 suggested by AICTE. The details of eligibility criteria and rules followed to award the Minor degree for B. Tech students in Mathematics and Computing is attached in a

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Department of Mathematics
CUK
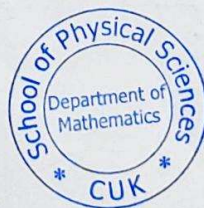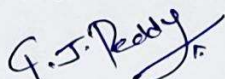
separate sheet. The decision to offer the Minor Degree may be deferred for two years during which the department will assess the infrastructural and manpower provisions and other administrative support. After two years, if the situation is not favourable, the department may decide to drop the Minor Degree.

16. **Members suggested the following essentials for the B. Tech course curriculum.**
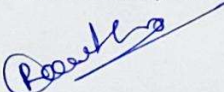   - The Department may suggest suitable alternative related course through MOOCs (NPTEL, SWAYAM etc.) under any category in the entire course structure based on the requirement.
    - No minor degree course should be matched with the courses listed in I-VIII semesters including Departmental Electives. In case if a minor course is matching with any of the courses listed in the proposed curriculum, then the Department shall suggest an alternative minor course.
    - The students should take prior approval from the Department before choosing the MOOCs course.
17. Members suggested that the University should provide the additional contractual faculty to the Department of Mathematics in the areas of theoretical computer science and statistics to justify the teaching needs of this B. Tech course.
18. BOS members strongly recommend to recruit computer laboratory technician & laboratory attenders in the Department at the earliest.
19. The course codes for the B. Tech program given tentatively and can be changed at a later time as per the norms of the University and need of the Department.
20. The members suggested that the English theory course in the second semester should be replaced with English lab if possible and accordingly the course code with L-T-P format should be changed.

The meeting concluded with Vote of Thanks by **Dr. G. Janardhana Reddy**, Head of Dept. of Mathematics, BOS Chairman & Convener, thanking all the members who have been providing valuable inputs for developing the scheme and course structure of B. Tech in Mathematics and Computing.
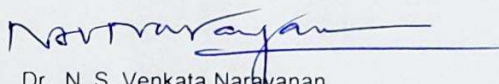
	(Attended online & Approved Through Email)	(Attended & online & Approved Through Email)
Dr. G. Janardhana Reddy	Prof. K.N.S. Kasi Viswanadham	Prof. V. Sugunamma
Central University of Karnataka	NIT Warangal	S.V. University, Tirupati

Dr. Ranganatha D.	Dr. Bharat Kumar	Dr. N. S. Venkata Narayanan
Central University of Karnataka	Central University of Karnataka	Central University of Karnataka
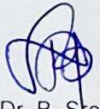
Dr. Deepak Samuel	(Attended online & Approved Through Email) Dr. V. Sandeep	Dr. N. Sandeep	Dr. B. Sreenivasulu
Central University of Karnataka	NIT Andhra Pradesh	Central University of Karnataka	Central University of Karnataka

CENTRAL UNIVERSITY OF KARNATAKA, KALABURAGI

PROPOSED MODEL CURRICULUM COMPONENTS

Comparison of suggested breakup of AICTE and CUK Curriculum

Credit Distribution for B. Tech. Mathematics and Computing Program (2023-2024 batch and onwards)

Category of Courses	Proposed Credits by CUK	AICTE Suggested Credits	Comparison
Basic Science Courses (BSC)	22	25	-3
Engineering Science Courses (ESC)	24	24	0
Humanities and Social Sciences including Management courses (HSC)	12	12	0
Program Core Courses (PCC)	48	48	0
Departmental Elective Courses (DEC)	21	18	3
Open Elective Courses including Mandatory Courses (OPC)	13	18	-5
Program Major Research Core Project (PRC)/Skill Development (SD)/Summer Internship(SI)	24	15	9
Total	164	160	4

B. Tech (Mathematics and Computing) Credits in Each Semester

	I	II	III	IV	V	VI	VII	VIII	TOT
BSC	4	9	0	4	4	1	0	0	22
ESC	6	0	2	8	5	0	3	0	24
HSC	2	2	0	4	0	4	0	0	12
PCC	6	3	13	6	4	9	7	0	48
DEC	0	0	0	0	6	6	6	3	21
OPC	3	5	5	0	0	0	0	0	13
PRC/SD	0	2	0	0	3	1	4	12	22
Internship	0	0	-	-	-	-	2	0	2
	21	21	20	22	22	21	22	15	164

Minor Degree (As per NEP 2020 suggested by AICTE): Artificial Intelligence, Machine Learning and Data Science (AI, ML & DS)

It is proposed to award minor degree for B. Tech students in Mathematics and Computing.

For example, a B. Tech student of Mathematics and Computing can graduate with regular degree in Mathematics and Computing and a minor in Artificial Intelligence, Machine Learning and Data Science (AI, ML & DS).

The minor degree can be awarded under the following conditions:
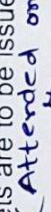
1. The students will be eligible to receive minor degree when they take additional courses constituting 18 credits between 5th to 8th semesters.

2. The minor degree courses will be over and above the B. Tech. credit requirements (164 Credits).

3. Minor degree will be allocated on merit basis on completion of 4th semester. At present, the minimum CGPA 7.0 with no backlog courses may be considered for minor degree eligibility.

4. Separate grade sheets are to be issued for the courses of Minor Degree.
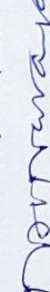
(Attended online & Approved Through Email)
Prof. V. Sugunamma
S.V. University, Tirupati

Dr. N. S. Venkata Narayanan
Central University of Karnataka

Dr. B. Sreenivasulu
Central University of Karnataka
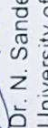
(Attended online by Approved Through Email)
Prof. K.N.S. Kasi Viswanadham
NIT Warangal

Dr. Bharat Kumar
Central University of Karnataka

Dr. N. Sandeep
Central University of Karnataka

(Attended online Approved Through Email)
Dr. V. Sandeep
NIT Andhra Pradesh

Dr. G. Janardhana Reddy
Central University of Karnataka

Dr. Ranganatha D.
Central University of Karnataka

Dr. Deepak Samuel
Central University of Karnataka

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B. Tech in Mathematics and Computing Course Structure for the academic year 2023-2024.

Semester-I

S. No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC10100	Calculus	5	1	0	06	PCC
2	UMATC10101	Engineering Physics	3	0	0	03	BSC
3	UMATC10102	Introduction to Electrical Engineering	3	0	0	03	ESC
4	UMACC10100	Introduction to Computing	2	0	2	03	ESC
5	-	Multidisciplinary Course	3	0	0	03	OPC
6	UMATA10100	A course on English Language	2	0	0	02	HSC
7	UMAPC10100	Computer Aided Engineering Graphics	0	0	2	01	BSC
		TOTAL	18	1	4	21	

Semester-II

S. No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC20103	Ordinary Differential Equations	3	1	0	04	BSC
2	UMATC20104	A course on Chemistry/Biology/Mechatronics/Electronics	3	0	0	03	BSC
3	UMATC20105	Enumerative Combinatorics	3	0	0	03	PCC
4	-	Multidisciplinary Course	3	0	0	03	OPC
5	UMATA20101	A course on English Language	2	0	0	02	HSC
6	-	A course on Environmental Sciences (Mandatory Course)	2	0	0	02	OPC
7	UMACC20101	Matrix Computations	1	0	2	02	BSC
8	UMACS20100	Introduction to Python Programming	1	0	2	02	SD
		TOTAL	18	1	4	21	

Summer Internship – I#

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Department of Mathematics
School of Physical Sciences
Kadaganchi, Aland Road,
Gulbarga District– 585367

Semester-III

S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC30200	Linear Algebra	3	1	0	04	PCC
2	UMATC30201	Introduction to Number Theory	3	1	0	04	PCC
3	UMATC30202	Computational Algebra	3	1	0	04	PCC
4	-	Multidisciplinary Course	3	0	0	03	OPC
5	-	A course on Indian Constitution/Essence of Indian Knowledge Tradition (Mandatory Course)	2	0	0	02	OPC
6	UMAPC30200	Computing Lab for Linear Algebra & Number Theory	0	0	2	01	PCC
7	UMACC30200	Programming in C++	1	0	2	02	ESC
		TOTAL	15	3	4	20	

Semester-IV

S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC40203	Mathematical Methods	3	1	0	04	ESC
2	UMATC40204	Introduction to Artificial Intelligence and Machine Learning	3	0	0	03	PCC
3	UMATC40205	Real Analysis	3	1	0	04	BSC
4	UMATC40206	Computational Statistics	3	1	0	04	HSC
5	UMATC40207	Partial Differential Equations	3	1	0	04	ESC
6	UMAWC40200	Programming Workshop (Data Analytics using R Programming and GPU computing)	1	0	2	02	PCC
7	UMAPC40201	Lab on Artificial Intelligence and Machine Learning	0	0	2	01	PCC
		TOTAL	16	4	4	22	

Summer Internship – II#
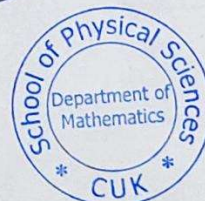
CENTRAL UNIVERSITY
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Department of Mathematics
School of Physical Sciences
Kadaganchi, Aland Road,
Gulbarga District– 585367

Semester-V

S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC50300	Scientific Computing for Engineers	3	1	0	04	ESC
2	UMATC50301	Fluid Mechanics	3	1	0	04	BSC
3	UMATC50302	Database Management Systems (DBMS)	3	0	0	03	PCC
4	UMATLXXXXX	Departmental Elective I (Mathematics)	3	0	0	03	DEC
5	UMATLXXXXX	Departmental Elective II (Computing)	3	0	0	03	DEC
6	UMAPC50300	DBMS Lab	0	0	2	01	PCC
7	UMAPC50301	Lab on Scientific Computing	0	0	2	01	ESC
8	UMACS50300	OOPS with JAVA Lab	2	0	2	03	SD
		TOTAL	17	2	6	22	

Semester-VI

| S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC60303	Operations Research	3	1	0	04	HSC
2	UMATC60304	Complex Analysis	3	0	0	03	PCC
3	UMATC60305	Computational Topology and Data Analysis	3	0	0	03	PCC
4	UMATLXXXXX	Departmental Elective III (Mathematics)	3	0	0	03	DEC
5	UMATLXXXXX	Departmental Elective IV (Computing)	3	0	0	03	DEC
6	UMATC60306	Computational Graph Theory	3	0	0	03	PCC
7	UMAPC60302	Optimization Lab	0	0	2	01	BSC
8	UMAPR60300	Mini Project	0	0	2	01	PRC
		TOTAL	18	1	4	21	

Summer Internship – III#

#: The students should do at least one Summer Internship at the end of first/ second/ third year with duration of minimum 30-45 days at Institutes/Organizations/Industries and produce the certificate of completion to the department. The internship credits (2) will be added in the seventh semester.
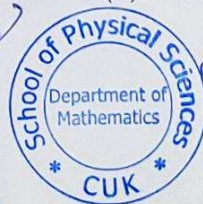
CENTRAL UNIVERSITY OF KARNATAKA

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**Department of Mathematics
School of Physical Sciences**

Kadaganchi, Aland Road,
Gulbarga District– 585367

Semester-VII

S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATC70400	Functional Analysis	3	0	0	03	PCC
2	UMATC70401	Cryptography	3	0	0	03	ESC
3	UMATC70402	Advanced Scientific Computing for Engineers	3	0	0	03	PCC
4	UMATLXXXXX	Departmental Elective V (Mathematics)	3	0	0	03	DEC
5	UMATLXXXXX	Departmental Elective VI (Computing)	3	0	0	03	DEC
6	UMAPC70400	Lab on Advanced Scientific Computing	0	0	2	01	PCC
7	UMAPR70400	Project Work Part – A	0	0	8	04	PRC
8	UMAPI70400	Summer Internship#	0	0	4	02	SI
		TOTAL	15	0	14	22	

Semester-VIII

S.No	Course Code	Course Title	L	T	P	Credits	Cat. Code
1	UMATLXXXXX	Departmental Elective VII (Mathematics/Computing) (course related to Project Work)*	3	0	0	03	DEC
2	UMAPR80401	Project Work Part – B (with option of Industrial Training /Internship)	0	0	20	10	PRC
3	UMATS70400	Comprehensive Viva Voce	0	2	0	02	SD
		TOTAL	3	2	20	15	

*If the students are in Industrial training, the elective course examination related to project work may be conducted online.

Total Credits for all Eight Semesters: 164

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SI.No	Course Title
	Departmental Electives (Mathematics)
1	Advanced Algebra
2	Algebraic Topology
3	Measure and Integration
4	Advanced Operations Research
5	Classical Mechanics
6	Mathematical Modeling
7	Coordinate Geometry
8	Mathematics for Biology
9	Quantum Mechanics
10	Tensor Analysis & Differential Geometry
11	Continuum Mechanics
12	Ramanujan's Theta Functions
13	Perturbation Methods
14	Spline Functions and their Applications
15	Ramanujan's Theta Functions and Applications to Number Theory
16	Lie Group Theory and Applications
17	Riemannian Geometry
18	Special Functions
19	Theory of Partitions
20	Mathematical Theory of Control
21	Wavelets
22	Advanced Differential Equations
23	Advanced Functional Analysis
24	Computational Linear Algebra
25	Boundary Layer Theory
26	Bio-fluid Mechanics
27	Advanced Fluid Mechanics
	Departmental Electives (Computing)
28	Data Structures
29	Computer Architecture
30	Design & Analysis of Algorithms
31	Numerical Solution of Differential Equations (NSDE) using Finite Difference Methods
32	Fuzzy Sets and Fuzzy logic
33	NSDE using Finite Element Method
34	Computational Fluid Dynamics
35	Multi Objective Programming
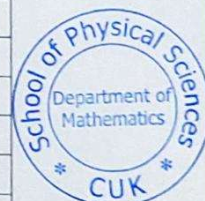
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36	Theory of Automata
37	Financial Mathematics
38	NSDE using Finite Volume Method
39	Computer Graphics
40	Quantum Computing
41	Parallel Computing
42	Monte Carlo Simulation
43	Computational Biology
44	Signal Processing
45	Computational Science
46	Deep Learning
47	Advanced Computational Statistics
48	Theory of Computation
49	Elements of Data Science
50	Web Technologies
51	Data Mining
52	Cloud Computing
53	Image Processing
54	Big Data Analytics
55	Cyber Security
56	Block Chain Technologies
57	Internet of Things
58	Optimal Control Theory
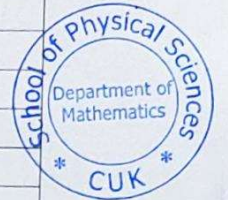
***Minor Degree Specialization: Artificial Intelligence, Machine Learning and Data Science (AI, ML & DS)**

S.No	Course Code	Course Title	L	T	P	Credits	Offered sem
		Courses for Minor in AI, ML & DS					
1	UMATM50300	Advanced Mathematical Tools for Machine Learning	3	0	0	03	5th
2	UMACM50300	Data Analysis and Visualization with Python	1	0	2	02	5th
3	UMATM60301	Search Methods in Artificial Intelligence	3	0	0	03	6th
4	UMACM60301	Machine Learning in Practice	2	0	2	03	6th
5	UMATM70400	Statistics for Data Science	3	0	2	04	7th
6	UMATM70401	Multiagent Systems in AI and ML	3	0	0	03	7th
		TOTAL	15	0	6	18	

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*The decision to offer the Minor Degree may be deferred for two years during which the department will assess the infrastructural and manpower provisions and other administrative support. After two years, if the situation is not favourable, the department may decide to drop the Minor Degree.

Essentials:

- The Department may suggest suitable alternative related course through MOOCs (NPTEL, SWAYAM etc.) under any category in the entire course structure based on the requirement.

- No minor degree course should be matched with the courses listed in I-VIII semesters including Departmental Electives. In case if a minor course is matching with any of the courses listed in the proposed curriculum then the Department shall suggest an alternative minor course.

- The students should take prior approval from the Department before choosing the MOOCs course.

Dr. G. Janardhana Reddy
Central University of Karnataka

(Attended online & Approved Through Email)
Prof. K.N.S. Kasi Viswanadham
NIT Warangal

(Attended online & Approved Through Email)
Prof. V. Sugunamma
S.V. University, Tirupati

Dr. Ranganatha D.
Central University of Karnataka

Dr. Bharat Kumar
Central University of Karnataka

Dr. N. S. Venkata Narayanan
Central University of Karnataka

Dr. Deepak Samuel
Central University of Karnataka

(Attended online & Approved Through Email)
Dr. V. Sandeep
NIT Andhra Pradesh

Dr. N. Sandeep
Central University of Karnataka

Dr. B. Sreenivasulu
Central University of Karnataka
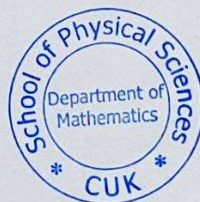
B. Tech. in Mathematics and Computing Course Structure from the academic year 2023-2024

Semester	Course-1	Course-2	Course-3	Course-4	Course-5	Course-6	Course-7	Course-8	L	T	P	Credits	Contact Hours
I	Calculus 5-1-0-6	Engineering Physics 3-0-0-3	Introduction to Electrical Engineering 3-0-0-3	Introduction to Computing 2-0-2-3	Multidisciplinary Course 3-0-0-3	A course on English Language 2-0-0-2	Computer Aided Engineering Graphics 0-0-2-1	-	18	1	4	21	23
II	Ordinary Differential Equations 3-1-0-4	A course on Chemistry/Biology/Mechatronics /Electronics 3-0-0-3	Enumerative Combinatorics 3-0-0-3	Multidisciplinary Course 3-0-0-3	A course on English Language 2-0-0-2	A course on Environmental Sciences (Mandatory Course) 2-0-0-2	Matrix Computations 1-0-2-2	Introduction to Python Programming 1-0-2-2	18	1	4	21	23
III	Linear Algebra 3-1-0-4	Introduction to Number Theory 3-1-0-4	Computational Algebra 3-1-0-4	Multidisciplinary Course 3-0-0-3	A course on Indian Constitution/Essence of Indian Knowledge Tradition (Mandatory Course) 2-0-0-2	Computing Lab for Linear Algebra & Number Theory 0-0-2-1	Programming in C++ 1-0-2-2	-	15	3	4	20	22
IV	Mathematical Methods 3-1-0-4	Introduction to Artificial Intelligence and Machine Learning 3-1-0-4	Real Analysis 3-1-0-4	Computational Statistics 3-0-0-3	Partial Differential Equations 2-0-0-2	Programming Workshop (Data Analytics using R Programming and GPU computing) 0-0-2-1	Lab on Artificial Intelligence and Machine Learning 1-0-2-2	-	16	4	4	22	24
V	Scientific Computing for Engineers 3-1-0-4	Fluid Mechanics 3-1-0-4	Database Management Systems (DBMS) 3-0-0-3	Departmental Elective I (Mathematics) 3-0-0-3	Departmental Elective II (Computing) 3-0-0-3	DBMS Lab 0-0-2-1	Lab on Scientific Computing 0-0-2-1	OOPS with JAVA Lab 0-0-2-1	17	2	6	22	25
VI	Operations Research 3-1-0-4	Complex Analysis 3-0-0-3	Computational Topology and Data Analysis 3-0-0-3	Departmental Elective III (Mathematics) 3-0-0-3	Departmental Elective IV (Computing) 3-0-0-3	Computational Graph Theory 3-0-0-3	Optimization Lab 0-0-2-1	Mini Project 0-0-2-1	18	1	4	21	23
VII	Functional Analysis 3-1-0-4	Cryptography 3-0-0-3	Advanced Scientific Computing for Engineers 3-0-0-3	Departmental Elective V (Mathematics) 3-0-0-3	Departmental Elective VI (Computing) 3-0-0-3	Lab on Advanced Scientific Computing 0-0-2-1	Project Work Part – A 0-0-8-4	Summer Internship 0-0-4-2	15	0	14	22	29
VIII	Departmental Elective VII (Mathematics/ Computing) (course related to Project Work) 3-0-0-3	Project Work Part – B 0-0-20-10	Comprehensive Viva 0-2-0-2						3	2	20	15	25

Total Credits = 164

Head Department of Mathematics <hodmathematics@cuk.ac.in>

Request to approve the Minutes of BOS Meeting held on 25-05-2023 to discuss about B.Tech Curriculum
10 messages

Head Department of Mathematics <hodmathematics@cuk.ac.in> Sat, Jun 3, 2023 at 6:49 PM
To: Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel <deepaksamuel@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Kasi Viswanadham K N S <kasi@nitw.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, sandeep@nitandhra.ac.in, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V <vsugunar@gmail.com>

Respected BoS Members and Special Invitees,

Thank You All for attending the BOS Meeting held on 25-05-2023 through blended mode to discuss about B.Tech Mathematics and Computing Curriculum. Care has been taken to include all the suggestions/inputs given by BOS members and Special Invitees in the B.Tech Curriculum.

I request you all please go through the attached BOS minutes, Curriculum & Course Structure and give your approval on or before 05-06-2023, 11.00 Am.

In case I do not receive any comments I shall presume that you have approved the above points.

Thank You All.

--

Regards
Dr. G Janardhana Reddy
The President's Inspired Teacher (https://en.wikipedia.org/wiki/Inspired_Teacher)
Associate Professor & Head
Department of Mathematics
Central University of Karnataka
Kalaburagi - 585 367.
Ph:- 9491472461
Email: hodmathematics@cuk.ac.in; gjr@cuk.ac.in

Head
Department of Mathematics
Central University of Karnataka
Kadaganchi, Kalaburagi - 585367

4 attachments

- **Minutes of BOS-B.Tech in Maths and Computing-25-05-2023.pdf**
  154K

- **Proposed Btech Model Curriculum 2023-2024 onwards 25-05-2023.pdf**
  209K

- **CUK BTECH - Maths and Computing from 2023-24_25-05-2023.pdf**
  365K

- **B. Tech M&C-Stucture_Final_25-05-2023.pdf**
  126K

Kasi Viswanadham K N S <kasi@nitw.ac.in> Sun, Jun 4, 2023 at 6:54 PM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
Cc: Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel <deepaksamuel@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, sandeep@nitandhra.ac.in, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V <vsugunar@gmail.com>

Approved.
[Quoted text hidden]

Dr. Ranganatha D Asst. Prof. Dept. of Mathematics <ranganathad@cuk.ac.in>   Sun, Jun 4, 2023 at 7:01 PM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>

Approved

[Quoted text hidden]

Deepak Samuel <deepaksamuel@cuk.ac.in>   Sun, Jun 4, 2023 at 7:33 PM
To: Kasi Viswanadham K N S <kasi@nitw.ac.in>
Cc: Head Department of Mathematics <hodmathematics@cuk.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, sandeep@nitandhra.ac.in, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V <vsugunar@gmail.com>

Approved.

[Quoted text hidden]
--
Deepak Samuel Ph.D.,
Associate Professor and Head,
Department of Physics
School of Physical Sciences
Central University of Karnataka
Kadaganchi, Aland Road, Gulbarga Dist. - 585 367

Dr.N.Sandeep, Dept. of Mathematics, CUK <nsandeep@cuk.ac.in>   Sun, Jun 4, 2023 at 7:47 PM
To: Deepak Samuel <deepaksamuel@cuk.ac.in>
Cc: Kasi Viswanadham K N S <kasi@nitw.ac.in>, Head Department of Mathematics <hodmathematics@cuk.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, sandeep@nitandhra.ac.in, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V <vsugunar@gmail.com>

Approved

[Quoted text hidden]

Bharat Kumar <bharat@cuk.ac.in>   Sun, Jun 4, 2023 at 7:49 PM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
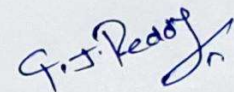
Dear Dr. G. J. Reddy,
I approve the minutes of the meeting and course structure.
With best regards,
Bharat Kumar.

[Quoted text hidden]

Head
Department of Mathematics
Central University of Karnataka
Kadaganchi, Kalaburagi - 585367

Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics <sreenivasulu@cuk.ac.in>   Sun, Jun 4, 2023 at 9:27 PM

To: "Dr.N.Sandeep, Dept. of Mathematics, CUK" <nsandeep@cuk.ac.in>
Cc: Deepak Samuel <deepaksamuel@cuk.ac.in>, Kasi Viswanadham K N S <kasi@nitw.ac.in>, Head Department of Mathematics <hodmathematics@cuk.ac.in>, Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Venkata Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, sandeep@nitandhra.ac.in, Sugunamma V <vsugunar@gmail.com>

Approved.

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Venkata Narayanan N S <nsvenkat@cuk.ac.in>   Sun, Jun 4, 2023 at 9:30 PM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
Cc: Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel <deepaksamuel@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Kasi Viswanadham K N S <kasi@nitw.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>, "Dr. SANDEEP V" <sandeep@nitandhra.ac.in>, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V <vsugunar@gmail.com>

• Thank you for your mail and updates. Approved from my side.
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Sugunamma V <vsugunar@gmail.com>   Mon, Jun 5, 2023 at 9:47 AM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
Cc: Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel
<deepaksamuel@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Kasi
Viswanadham K N S <kasi@nitw.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Venkata
Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>,
sandeep@nitandhra.ac.in, "Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>

I approved the B.Tech Curriculum
[Quoted text hidden]

Dr. SANDEEP V <sandeep@nitandhra.ac.in>   Mon, Jun 5, 2023 at 10:35 AM
To: Head Department of Mathematics <hodmathematics@cuk.ac.in>
Cc: Bharat Kumar <bharat@cuk.ac.in>, Dean School of Physical Sciences <deansps@cuk.ac.in>, Deepak Samuel
<deepaksamuel@cuk.ac.in>, "Dr. G Janardhana Reddy, Dept. of Mathematics, CUK" <gjr@cuk.ac.in>, Kasi
Viswanadham K N S <kasi@nitw.ac.in>, "Dr. N Sandeep Dept. of Mathematics" <nsandeep@cuk.ac.in>, Venkata
Narayanan N S <nsvenkat@cuk.ac.in>, "Dr. Ranganatha D Asst. Prof. Dept. of Mathematics" <ranganathad@cuk.ac.in>,
"Sreenivasulu Ballem Asst. Prof. Dept. of Mathematics" <sreenivasulu@cuk.ac.in>, Sugunamma V
<vsugunar@gmail.com>

Approved.
[Quoted text hidden]
--

V. SANDEEP, PhD (IITD), SMIEEE
Assistant Professor & HEAD
Department of Electrical Engineering
National Institute of Technology (NIT) Andhra Pradesh
Tadepalligudem - 534101, INDIA
sandeep@nitandhra.ac.in, +91-8861290060
hod_eee@nitandhra.ac.in
http://nitandhra.ac.in/dept/eee/20172
http://nitandhra.ac.in/dept/eee/

Associate Dean - Industrial Collaborations & MoUs, NIT AP
Past Chair- PELS/IAS/PELS Jt Chapter, IEEE Vizag Bay Section
Project Manager - DSIR-CRTDH-ERE, NIT AP
IEEE Senior Member - PES, PELS, IAS & IES, Standards Association
Life Member - ISTE, Member - IE(I), Member - IAENG, Chartered Engineer
Branch Advisor, NIT AP IEEE PES, IAS & PELS SB Chapters

Head
Department of Mathematics
Central University of Karnataka
Kadaganchi, Kalaburagi - 585367

Minutes of the Meeting of Board of Studies of Department of Mathematics, School of Physical Sciences of CUK, Kalaburagi, held during 14-07-2023 at CUK, Kalaburagi through Blended Mode.

Venue: On 14th July 2023, HOD Office, Department of Mathematics, CUK, Kadaganchi.

Members present:
1. Dr. G. Janardhana Reddy, Assoc. Professor & Head, Dept. of Mathematics, CUK, BOS Chairman & Convener.
2. Prof. K.N.S. Kasi Viswanadham, Professor, Dept. of Mathematics, NIT Warangal, External Member.
3. Prof. V. Sugunamma, Professor, Dept. of Mathematics, S.V. University, Tirupati, External Member.
4. Dr. Ranganatha D., Asst. Professor, Dept. of Mathematics, CUK, Internal Member.
5. Dr. Bharat Kumar, Assoc. Professor, Dept. of Physics, CUK, Member from allied Department.
6. Dr. N. S. Venkata Narayanan, Assoc. Professor, Dept. of Chemistry, CUK, Member from allied Department.

Special Invitees:
7. Dr. Deepak Samuel, Dean, School of Physical Sciences, CUK.
8. Dr. V. Sandeep, Head, Dept. of EEE, NIT Andhra Pradesh.
9. Dr. N. Sandeep, Assistant Professor, Dept. of Mathematics, CUK.
10. Dr. B. Sreenivasulu, Assistant Professor, Dept. of Mathematics, CUK.
11. Dr. Sangamesh, Assistant Professor, School of Engineering, CUK.

Members on Leave: NIL

Dr. G. Janardhana Reddy, Head of Dept. of Mathematics, BOS Chairman & Convener welcomed the gathering and briefed the purpose of the meeting to discuss about the first two years' syllabus of B. Tech in Mathematics and Computing program which is commencing from the academic year 2023-24 onwards. Also, he thanked all the BOS members and special invitees for giving their approval to confirm the minutes of BOS meeting held on 25-05-2023 to design the course curriculum of this new four-year B.Tech. program in the Dept. of Mathematics.

The following points have been discussed and recommended by the BOS members and Special Invitees:

1. The first two years of B.Tech. in Mathematics and Computing syllabus along with Learning Outcomes-Based Curriculum Framework (LOCF) including Mission Statements (MS), Qualification Descriptors (QDs), Program Learning Outcomes (PLOs) & Course Learning Outcomes (CLOs) have been discussed and resolved to adopt the same from the academic year 2023-24. However, the remaining two years' syllabus of B.Tech. in Mathematics and Computing will be placed and discussed in the forthcoming BOS meetings.

2. The syllabus of minor and multidisciplinary courses along with CLO's for the first two years offered for other Department UG programs as per the template circulated by the University based on the NEP 2020 guidelines is placed in front of the BOS members and after the discussions, it is resolved to adopt the same from the academic year 2023-24 for four year UG programs. However, the syllabus for remaining minor courses in third and fourth year of UG program offered for other Departments will be placed and discussed in the forthcoming BOS meetings.

3. The title of the course "Programming in C++" in the 3rd semester of approved B.Tech. Mathematics and Computing Curriculum has been changed with suitable title "Programming in C++ with OOPs".

4. The course codes for the B. Tech. Mathematics and Computing program and other Department UG minor and multidisciplinary courses are given tentatively and can be changed/added at a later time as per the norms of the University and need of the Department.

The meeting concluded with Vote of Thanks by **Dr. G. Janardhana Reddy**, Head of Dept. of Mathematics, BOS Chairman & Convener, thanking all the members and special invitees who have been providing valuable inputs for preparing the first two years' syllabus of B. Tech in Mathematics and Computing program and other Department UG minor and multidisciplinary courses.

Dr. G. Janardhana Reddy
Central University of Karnataka

(Attended online & Approved Through E-mail)

Prof. K.N.S. Kasi Viswanadham
NIT Warangal

(Attended online & Approved Through E-mail)

Prof. V. Sugunamma
S.V. University, Tirupati

Dr. Ranganatha D.
Central University of Karnataka

Dr. Bharat Kumar
Central University of Karnataka

Dr. N. S. Venkata Narayanan
Central University of Karnataka

Dr. Deepak Samuel
Central University of Karnataka

(Attended online & Approved Through E-mail)

Dr. V. Sandeep
NIT Andhra Pradesh

Dr. N. Sandeep
Central University of Karnataka

Dr. Sreenivasulu Ballem
Central University of Karnataka

Dr. Sangamesh
Central University of Karnataka