
UNIVERSITY OF MYSORE
DEPARTMENT OF SUGAR TECHNOLOGY
SIR M V VISVESVARAYA P G CENTRE, MANDYA

No.VPGCM/ST/86 /2021-22

Date: 23-11-2022

From
Dr. K.S Venkatesh
Professor & Chairman,
BOS in Sugar Technology

To
The Members of BOS in Sugar Tech
University of Mysore, Mysuru

Sir

Sub: Conduct of BOS Meeting in Sugar Technology
Ref: UA2/379/2013-2014 Date 15-11-2021

Handwritten signature and date: 26/11/2021

With reference to the above, the meeting of Board of Studies in Sugar Technology is convened on 25-11-2021 at 11am at Academic Council (AC) Hall, Crawford Bhavana, University of Mysore, Mysuru. Please make it convenient to attend the same positively and applicable allowances will be provided as per the University norms. Kindly peruse the following agenda and offer your valuable remarks & suggestions.


1. To adopt National Level Admission Process to M.Sc Sugar Technology independent from the Common P.G Admissions of the University similar to M.Sc. Bio-Technology.
2. To conduct the Karnataka State Eligibility Test (KSET) for Sugar Technology
3. To include Weekly & Monthly Factory Visits / Industrial Tour for M.Sc. Sugar Technology Students as a part of the curriculum for 4 Credits
4. Pattern of Examination for Add-on Proficiency Diploma (18 Credit)
Part - A (14 Credits)
 - a) C1, C2, C3 - Based on In-Plant Training Weekly Reports, & C4 - Written Examination - 100 Marks
 - b) In-plant Training Report - 100 Marks.
 - c) Viva/voce Examination - 100 Marks.**Part - B (4 Credits)**
 - a) Factory Visit/Industrial Tour Report - 100 Marks

5. Provision of the 'In-Plant Training' in a single phase of 3 or 4 months instead of two phases of 2 months each depending upon the Factory Working under special circumstances (e.g., Covid-19).
6. Revision and Approval of Panel of Examiners for the year 2021-22
7. Any other matter with permission of the chair.

Looking forward to your participation in the meeting and fruitful deliberations

Thanking you

yours sincerely


CHAIRMAN 3/11
BOS in Sugar Technology
University of Mysore
Sir. M. Vishvesvaraya P.G. Centre
Mandya - 571402

Copy to

1. The Registrar, University of Mysore, Mysuru for kind information and needful

Proceedings of the BOS Meeting in Sugar Technology

The members of the Board of Studies in Sugar Technology met on 25th November 2021, at Crawford Hall, University of Mysore, Mysuru and resolved the following decisions unanimously:

Agenda 1: *To adopt National Level Admission Process to M.Sc Sugar Technology independent from the Common P.G Admissions of the University similar to M.Sc. Biotechnology.*

Resolution: The admission process to M.Sc. Sugar Technology shall be made at the National level (Independently from the common P.G admission process of the University) by giving a separate notification vide advertisement in the national news papers and other media. The number of seats can be increased to 40 (Scheme A) out of which 20 seats maybe earmarked for the students of University of Mysore and other Universities within Karnataka. The remaining seats may be filled with students of Universities outside Karnataka. This proposal may be worked out as per the norms of the university similar to that of M.Sc Bio-Technology course.

Agenda 2: *To conduct the Karnataka State Eligibility Test (KSET) for Sugar Technology*

Resolution: The KSET Examination should be conducted for the M.Sc Sugar Technology Post Graduates to meet the Teaching Faculty requirements of various colleges & institutes and also as eligibility to pursue Ph.D research.

Agenda 3: *To include Weekly & Monthly Factory Visits / Industrial Tour for M.Sc. Sugar Technology Students as a part of the curriculum for 4 Credits*

Resolution: To supplement the theoretical knowledge the students should be taken for sugar factory visits / Industrial Tour for better understanding of Sugar Manufacture. The Tour Report shall be valued for 4 Credits.

Agenda 4: *The following pattern of examination for Add-on Proficiency Diploma (18 Credit) is approved*

Part - A (14 Credits)

- a) C1, C2, C3 - Based on In-Plant Training Weekly Reports, & C4 - Written Examination - 100 Marks
- b) In-plant Training Report - 100 Marks.
- c) Viva/voce Examination - 100 Marks.

Part - B (4 Credits)

- a) Factory Visit/Industrial Tour Report - 100 Marks

Agenda 5: *Provision of the 'In-Plant Training' in a single phase of 3 or 4 months instead of two phases of 2 months each depending upon the Factory Working under special circumstances (e.g., Covid-19).*

Resolution: Approved to facilitate in-plant training of students during sugarcane crushing season

Agenda 6: Revised Panel of Examiners is approved for the year 2021-22

Agenda 7: Approval of Syllabus for the Open Elective Course
" Sugarcane Agriculture" (LTP : 4:0:0)

Resolutions: Syllabus is approved

Name	<u>Members Present</u>	Signature
1. Dr. K.S.Venkatesh	Chairman	 25/11/21
2. Dr. Mahadevaiah,	Member	 25/11/21
3. Dr. M.P. Manohar	Member	 25/11/21
4. Dr. M A Harish Nayaka	Member	 25/11/2021
5. Prof. K Kemparaju	Member	
6. Prof. Manohar.B.	Member	— Absent —
7. Prof. K N Mohana	Member	 25/11/2021
8. Dr. Poornima Hiremath	Member	— Absent —
9. Prof. K Siddappa	Member	— Absent —

(Dr.K.S.Venkatesh)

Dr. K. S. VENKATESH, M.Sc., Ph.D.,
Professor
Dept. of Studies & Research in Sugar Technology
University of Mysore
Sir M. Visveswaraya Post Graduate Centre
Tubinakere, Mandya-571 402

**DEPARTMENT OF SUGAR TECHNOLOGY
PANEL OF EXAMINERS - 2021-2022**

Internal Examiners

1. Dr. K. S. Venkatesh, Dept of Sugar Technology, P G Centre, Mandya
2. Dr. Mahadevaiah , Dept of Sugar Technology, P G Centre, Mandya
3. Dr. Manohar M. P, Dept of Sugar Technology, P G Centre, Mandya
4. Dr. Harish Nayaka M. A, Dept of Sugar Technology, P G Centre, Mandya

External Examiners

Chemistry

1. Dr.R. L. Jagadish, P G Centre, Mandya
2. Dr. T. Demappa, P G Centre, Mandya
3. Prof. K. Vasanthkumar Pai, Dept of Industrial Chemistry, Kuvempu University, Shankaraghatta, Shimoga
4. Dr. B.E. Kumaraswamy, Dept of Industrial Chemistry, Kuvempu University, Shankaraghatta, Shimoga
5. Dr. G. K. Nagaraja, Dept of Chemistry, Mangalore University, Mangalore
6. Prof. J.Keshavaiah, Dept of Chemistry, Kuvempu University, Shankaraghatta, Shimoga
7. Dr.Y.D.Bhodike, Dept. of Industrial Chemistry, Kuvempu University, B.R. Project, Shankaraghatta, Shimoga
8. Dr.Suresh Kumar, Dept. of Biochemistry, Principal Scientist, CFTRI, Mysuru.

9. Dr. Harish prashantha, Dept. of Bio Chemistry, Principal Scientist, CFTRI, Mysuru.

Sugar Technology

1. B .V. Nagaraju, Dy. Manger Process, NSL Sugars Ltd., Maddur Tq, Mandya
2. Manjunatha .C., Manger Process, NSL Sugars Ltd.,Maddur
3. Puneeth Kumar K.T, Manager, Novozymes Pvt Ltd, Bangalore.
4. Shiva Kumar D C, Manager , Kimberlite Pvt Ltd, Bangalore
5. Amarendra B N, Asst. Manger, CSL, Makavalli, K.R.Pet.
6. Harisha. B. N., GM,(Process), Nirani Sugar, Pandvapura (PSSK)
7. Purushottam, Bannari, Amman Sugars Ltd, Kuntur, Kollegal, Chamarajanagar
8. Dinesh Sharma, Godavari Biorefineries Ltd, Sameerwadi, Mudhol, Bagalkot
9. Binod Kumar S, Jam Sugars Limited, Kundaragi Village, Bilagi Taluku, Belagum District.
10. Sri Kotta Venugopal, manager (Process), EID Party Ind Ltd, Haliyal, UK Dist.
11. Sri Shankaralingaiah, Manager Process, SCSLtd., K.M Doddi
12. Lokesh H G., Sr.Mfg Chemist, NSL Sugars Ltd.,Koppa, Maddur
13. Mr.Sreenivasa,Sr.Mfg Chemist,NSL Sugars Ltd., Koppa, Maddur
14. Lingaraju., Sr.Mfg Chemist, NSL Sugars Ltd., Koppa, Maddur
15. Narayana. N. A, Asst. Manager, CSL Sugars Ltd., K R Pet
16. Mahesh, DGM (Process), ICP Ltd., Uttur, Mudhol tq., Bagalkot Dist
17. Dr.K.B.Chandrashekar, Dept of Sugar Technology, P G Centre, Mandya.
18. Prakash Chandaragi, EID Parry Haliyal.
19. Mahaveer MoleAjit, Asst Manager(Process), Ugar Sugars Ltd, Ugar, Belagum Dist

Sugar Engineering

1. Dr Ravindra Gabadi, P.G.Centre, Gulbarga University, Bidar.
2. Dhananju, Asst Manager, CSL, Makavalli, K R Pet, Mandya
3. M Mohan, ITC Infotech India Limited, ITC Infotech Park, #18, Banaswadi Main Road
4. Ravi M, DGM(Engineering),SCS Ltd., K M Doddi
5. Dharmesh G L, AGM Eng., BASL - Unit 1, Alganchi, Nanjanagud
6. Purushottam M P, DGM Eng.,NSL Sugars, Koppa

Sugarcane Agriculture

1. Dr. K.M Harinikumar, Agricultuaral University GKVK, Bangalore.
2. Dr. Swamy, Dept. of Plant Breeding and Genetics, GKVK, Bangalore.
3. Dr. Niranan Murthy, ZARS V.C Farm, Mandya.
4. Dr. S.N Swamy Gowda, ZARS V.C Farm, Mandya.
5. Dr Thimmegowda, Agronomist, ZARS, VC Farm Mandya
6. Sri Baburaj, AGM, Cane, CSL K R Pet, Mandya
7. Dr. Keshavaiah, Sugarcane Agriculture, ZARS V.C Farm, Mandya.
8. Dr Yogananda, Senior forum Supt, ZARS V.C Farm, Mandya.
9. Dr.K.T. Pandurangegowda, Asst. Director, ZARS, V.C. Farm, Mandya
10. Dr.M.S.Uma, ZARS, GKVK, Bengaluru
11. Kempaegowda, DGM Cane, SCS Ltd., K M Doddi
12. Dr.R.B.Khandagave, Director, S.Nijalingappa Sugar Institute, CTS.No.4125/1B, Laxmi Tek, Ganeshpur Road, Belagavi - 590 009
13. Prof. Umesh Dept of Bio-Techonology MGM, UOM ,Mysore.
14. Geeta Nagaraju, Dept of Bio-Techonology MGM, UOM, Mysore.
15. Dr.Amruthesh, Dept of Botany, MGM, UOM, Mysore
16. Dr. Sathish, Dept of Microbiology, MGM.UOM.Mysore.
17. Dr. Srinivas . Dept of Microbiology, MGM.UOM.Mysore.
18. Prof. Shubha Gopal, Dept of Microbiology, MGM.UOM.Mysore.

Statistics


1. Dr. S.Ravi, Dept of Statistics, MGM
2. Dr.D.D Somashekhar, Dept of Mathematics, MGM
3. Prof. Yogesh, Dept. of Economics, Kuvempu University, B.R. Project, Shankaraghatta, Shimoga

Management

1. Dr Anand, BIMS, MGM
2. Prof. J.Madegowda, Chairman, Dept. of Commerce, Kuvempu University, B.R. Project, Shankaraghatta, Shimoga
3. Dr. Bheemanagowda, Dept. of Commerce, Kuvempu University, B.R. Project, Shankaraghatta, Shimoga
4. Dr. Aiesha Sharif, BIMS, MGM, UOM, Mysosre.
5. Dr. M.L.Ashok. Dept of Commerce, MGM, UOM, Mysore

Chemical Engineering

1. Dr. Umesh Hebbar, Chief Scientist, Dept of Food Engineering, CFTRI, Mysore
2. G.R. Suma, Dept of Chemical Engineering, SIT Tumkur
3. Harish Phattepur, Dept of Chemical Engineering, SIT Tumkur
4. P .L. Muralidhar, Dept of Chem Eng, RVCE, Bangalore – 59
5. Vidya. C., Dept of Chem Eng, RVCE, Bangalore – 59
6. Dr.Madhu, Dept. Of Chemical Eng, MSRIT, Bengaluru
7. Dr.Rastogi.N.K., Chief Scientist Food Engineering Department, CFTRI, Mysuru.


Dr. K. S. VENKATESH, M.Sc., Ph.D.,
Professor
Dept. of Studies & Research in Sugar Technology
University of Mysore
Sir M. Visveswarya Post Graduate Institute of
Technology, Mandyala-571 002

OPEN ELECTIVE COURSE
SUGARCANE AGRICULTURE (L:T:P:4:0:0)

Course Outcomes

On completing the course students will be able to

1. Understand the Characteristics of Sugarcane Plant.
2. Practices different aspects of Sugarcane Production Management.
3. Evaluate Sugarcane quality and understand the cane payment system.

Pedagogy

1. Lecturing through PPT and demonstrations are the major methods used.
2. Hands-on method is used to demonstrate field aspects
3. Learning through exploring the past research work in their specified fields.

COURSE CONTENT

UNIT-I: Introduction: Origin of cane, cultivation in India, varieties, climatic conditions, sugarcane agro climatic zones in India.

Soil: Types, properties – Visual & morphological properties, analytical properties, fertility & soil problems, sustaining fertility, soil conservation practices,

Planting: Preparatory tillage, planting time, selection of seed cane, methods of planting - flat, ridges & furrows, trench, IISR 86206, ring, spaced trans planting & polybag seedling transplanting method.

UNIT-II: Growth of Sugarcane: Germination, development of shoot & root - factors affecting, tillering, growth of leaves, internodes & stem, factors influencing cane growth, formation & storage of sugar in cane.

Irrigation: Water requirement, scheduling, method of irrigation – surface, overhead or sprinkler, drip irrigation, water quality, water logging, drainage – side, main & infield drains.

Manuring: Cane nutrition, functions of macro & micro (trace) nutrients, fertilizers – N, P, K, S, Ca & Mg carriers, Mixed or compound fertilizers, biofertilizers, foliar applications, fertigation, organic & green manuring, time & method of application, visual symptoms of nutrient deficiencies and disorders.

UNIT-III: Weeds: Common weeds, aquatic weeds, losses due to weeds, methods of weed control – mechanical, manual, chemical (time, method & dosage), integrated weed management, measures to reduce the weeds.

Pests: Leaf eating & sucking insects, stalk attacking insects, root attacking insects, soil insects & Non insect species.

Diseases: Major diseases (red rot, smut, pineapple, mosaic, wilt etc), period of occurrence, control measures (chemical & biological), losses due to pests & diseases, plant protection measures.

UNIT-IV: Ripening & Harvesting: Methods of judging ripeness or maturity, factors affecting ripening, accelerating ripening, chemical ripeners. Manual & mechanical harvesting of cane, transportation of cane, post harvest deterioration of sugarcane – causes, effect & losses, effect of extraneous matter (tops/trash) on processing, burning of cane.

Ratooning: Definition, yield & quality, number of ratoons, advantages and disadvantages, area and productivity, causes for low ratooning, tillering, varieties for good ratoons, removal of compaction, gap filling, fertilizer application, water requirement.

Cane Evaluation and Payment: Evaluation of cane quality, quality parameters, effect on recoverable sugar, recoverable sugar formulae, cane payment system.

Reference

1. Sugarcane in Agriculture and Industry – Gururaj Hunsigi
2. Sugarcane – C N Babu
3. The Energy Cane Alternative – A G Alexander
4. Sugarcane Production Technology in India – R S Verma
5. Sugarcane Crop Management – S B Singh, G P Rao & S Eswaramurthy
6. Sugarcane Cultivation and Management – H Baker
7. Mechanical Engineering and Electrical Engineering