CENTRAL UNIVERSITY OF KERALA
केरल केन्द्रीय विश्वविद्यालय

Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>

Requesting the approval of the revised M.Sc Botany syllabus of CUK plant Science-reg.

7 messages

Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in> Thu, Feb 18, 2021 at 1:07 PM
To: profkrchandrashekar@gmail.com
Cc: Parimelazhagan Thangaraj <drparimel@gmail.com>, Janardhana GR <grjbelur@gmail.com>, Sivaram V <sivaram900@gmail.com>, "Dr Dennis Thuruthiyil T." <den_thuruthiyil@cukerala.ac.in>, Ramachandran Kotharambath <ram@cukerala.ac.in>, Ginny Antony <ginnyantony@cukerala.ac.in>

Dear Sir/Madam

Greetings from Dept of Plant science, Central University of Kerala.

I am thankful to all the members for your continuous support and contribution for the successful conduct of BOS meeting held online on **12th Feb 2021.**
Here I attached the M.Sc Botany revised syllabus by incorporating the suggestions of the experts in the following points.

1) Revision carried out by incorporating the Programme objectives and outcome and all courses objectives and outcome.

2) Revision carried out by incorporating a list of practicals for newly introduced two skill based elective courses listed at the end as

i. BTY 5007 Hands on training on Plant metabolites and Drug discovery
ii. BTY 5008 Organic Farming

3) List of suggested 14 MOOCs for choice for elective courses

As our Academic council meeting is scheduled on 23-02-2021, I request all the experts to approve the attached syllabus through by mail on or before 21-02-2021.

Thanks once again.

Regards

Dr.K.Arunkumar, Ph.D
Professor & Head
Department of Plant Science
School of Biological Sciences
Central University of Kerala
Periye-671 320
Kasaragod,Kerala, India
Mobile: 91-9865051016
http://www.cukerala.ac.in/index.php?option=com_content&view=article&id=601&Itemid=410&lang=en

2 attachments

MOOC list .docx
18K

Syllabus M.Sc PLS -2020-21-GA.docx
222K

Ramachandran Kotharambath <ram@cukerala.ac.in> Thu, Feb 18, 2021 at 1:24 PM
To: Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>
Cc: profkrchandrashekar@gmail.com, Parimelazhagan Thangaraj <drparimel@gmail.com>, Janardhana GR <grjbelur@gmail.com>, Sivaram V <sivaram900@gmail.com>, "Dr Dennis Thuruthiyil T." <den_thuruthiyil@cukerala.ac.in>, Ginny Antony <ginnyantony@cukerala.ac.in>

Dear Sir

I approve the syllabus.

Sincerely
Ram

[Quoted text hidden]
--
--
Ramachandran Kotharambath | Assistant Professor | Department of Animal Science | Central University of Kerala | Tejaswini Hills, Periya | Kasaragod, Kerala | India

---

Sivaram V <sivaram900@gmail.com> Thu, Feb 18, 2021 at 1:31 PM
To: Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>
Cc: profkrchandrashekar@gmail.com, Parimelazhagan Thangaraj <drparimel@gmail.com>, Janardhana GR <grjbelur@gmail.com>, "Dr Dennis Thuruthiyil T." <den_thuruthiyil@cukerala.ac.in>, Ramachandran Kotharambath <ram@cukerala.ac.in>, Ginny Antony <ginnyantony@cukerala.ac.in>

Dear Dr Arun Kumar

I am herewith accepting the M Sc Botany Syllabus of CKU.

regards,

Sivaram
[Quoted text hidden]

Chandrashekar K R <profkrchandrashekar@gmail.com> Thu, Feb 18, 2021 at 2:00 PM
To: Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>

Dear Dr Arun Kumar,
The M. Sc. Syllabus of Plant Science of CUK is here by approved.
Chandrashekar K R

On Thu, 18 Feb 2021, 12:54 pm Arun Kumar K Faculty Plant Science, <arunkumark@cukerala.ac.in> wrote:
[Quoted text hidden]

Ginny Antony <ginnyantony@cukerala.ac.in> Fri, Feb 19, 2021 at 3:57 AM
To: Sivaram V <sivaram900@gmail.com>
Cc: Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>, profkrchandrashekar@gmail.com, Parimelazhagan Thangaraj <drparimel@gmail.com>, Janardhana GR <grjbelur@gmail.com>, "Dr Dennis Thuruthiyil T." <den_thuruthiyil@cukerala.ac.in>, Ramachandran Kotharambath <ram@cukerala.ac.in>

Syllabus approved. Thank You for the efforts from all.
[Quoted text hidden]

Dr Dennis Thuruthiyil T. <den_thuruthiyil@cukerala.ac.in> Thu, Feb 18, 2021 at 3:34 PM
To: Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>

Syllabus approved.
Dennis
[Quoted text hidden]

Parimelazhagan Thangaraj <drparimel@gmail.com> Thu, Feb 18, 2021 at 4:22 PM
To: Ginny Antony <ginnyantony@cukerala.ac.in>
Cc: Sivaram V <sivaram900@gmail.com>, Arun Kumar K Faculty Plant Science <arunkumark@cukerala.ac.in>, profkrchandrashekar@gmail.com, Janardhana GR <grjbelur@gmail.com>, "Dr Dennis Thuruthiyil T." <den_thuruthiyil@cukerala.ac.in>, Ramachandran Kotharambath <ram@cukerala.ac.in>

Dear Prof,

I am accepting and approving the syllabus.

Thank you

Parimel.

On Thu, Feb 18, 2021 at 3:27 PM Ginny Antony <ginnyantony@cukerala.ac.in> wrote:
[Quoted text hidden]

--
Dr. Parimelazhagan Thangaraj, Ph.D.
Professor
Department of Botany
Bharathiar University
Coimbatore - 641046

Mobile: 8903001973
E-mail: drparimel@gmail.com; drparimel@buc.edu.in

பாரதியார் பல்கலைக்கழகம்
Bharathiar University
Re-accredited at the "A" Grade Level by NAAC
Coimbatore, Tamilnadu, INDIA.

BTY 5104	**GENETICS** (Credits4; Theory4hrs; Practical 3hrs)
Aim	To study the concepts in genetics and develop skill in problem solving in genetics
Objectives	• To study the basic classical Mendelian genetics and its deviations • Understanding chromosomal basis of inheritance and its application in linkage,mapping and cytogenetics • To study the new emerging concepts in genetics and heredity • To study genetics of a population
Learning outcome	After the completion of this course, the learner will have ➢ Knowledge on the principles of genetics and different types of heritable traits ➢ Knowledge on the mechanism of extra chromosomal and epigenetic inheritance. ➢ The ability to apply the knowledge to understand various traits in individuals and populations of microbes, plants and animals.
	Theory
1.	**Principles of heredity:** Mendelian principles, laws of probability, binomialtheorem,Chi- square analysis, pedigreeanalysis.
2.	**Deviations from Mendelian inheritance:** Incomplete Dominance,Codominance, Lethal Alleles, Hierarchy of Dominance, Multiple Alleles,Pleiotropy, Polygenic inheritance, Quantitative trait loci (QTL), Statistics ofquantitativegenetics,Testforallelism,Environmentaleffect,Penetrance, Expressivity,Epistasis.
3.	**Chromosomal Basis of Inheritance:** Chromosomal theory of inheritance,Sex-linked traits, Pedigree analysis of linked traits, Activation andinactivationofX-chromosome,Sex-influencedtraits,Sex-limitedtraits,Sex Determination.
4.	**Cytogenetics:** Eukaryotic chromosomes-structure, classification andorganization,Banding,karyotyping,MolecularCytogenetics(FISH,GISH, FIBER-FISH,FlowCytogenetics,Flow karyotyping),Chromosomal aberrations.
5.	**Linkage and Mapping:** Linkage, Crossing over, Evolutionary significance ofrecombination, Two-point test cross, Three-point test cross, Genetic Mapping,GeneticmappinginDrosophila,Linkageandmappingusingtetrads,Physical mapping,Applicationofmapping.
6.	**Extra chromosomal inheritance:** Cytoplasmic inheritance, MitochondrialDNA, interplay between mitochondria and nuclear gene products, ChloroplastDNA,chloroplastbiogenesis,Originandevolution ofmitochondriaand chloroplast,Maternaleffect.
7.	**IntroductiontoEpigeneticinheritance:**Epigeneticinheritance,Genomic ImprintingandAnticipation.
8.	**Population genetics:** Migration, mutation, selection, genetic drift, Estimatingallele frequency, Nonrandom mating and genotype frequency, evolution ofgenomes,Inbreeding and co-ancestry.
S. No.	**Laboratory/Practical**
1.	Karyotyping

2.	Workingoutonproblemsrelatedtoconcernedtopicssuchas 1. Classicalgenetics 2. Probability 3. DeviationsfromMendeliangenetics 4. Polygenicinheritance 5. MultipleAlleles 6. Chi-squareanalysis 7. Pedigreeanalysis 8. Sex-linkedtraits 9. Genemapping 10. Allelefrequency 11. Populationgenetics

TextBooks:

1. SnustadPD,SimmonsMJ.2015.PrinciplesofGenetics,7th edition.Wiley.
2. KlugWS,CummingsMR,SpencerCA,PalladinoMA,DarrellKillian.2018.ConceptsofGenetics,12th edition. Pearson.

3. GriffithsAJF,WesslerSR,CarrollSB,DoebleyJ.2015.IntroductiontoGeneticAnalysis,11thedition.W.H. Freeman & Worth Publishers.
4. PierceBA.2016.Genetics:AConceptualApproach6th edition.W.H.Freeman.
5. HartwellL,GoldbergML,FischerJ,HoodL.2017.Genetics:FromGenestoGenomes6th edition.McGraw-Hill Education.
6. HartlDLandJonesEW.2011.Genetics:AnalysisofGenesandGenomes,7theditio n.USA:Jonesand Barlett Publishers.
7. MathewPM.Fundamentalsofpopulationgeneticswithemphasisonhumaninbreedings,1st edition.Southern book star.
8. StrickbergerMW.2015.Genetics,3rd edition.Pearson.
9. SamuelsML,WitmerJA,SchaffnerA.2015.StatisticsfortheLifeSciences,5th editi on.Pearson.
10. BrookerR.2017.Genetics:AnalysisandPrinciples,5th edition.McGraw-HillHigherEducation
11. TamarinR,7th edition.2017.PrinciplesofGenetics.McGrawHillEducation.
12. ElrodS,StansfieldW.2010.Schaum'sOutlineofGenetics,5th edition.McGraw-HillEducation.
13. HartlDL,ClarkAG.2006.PrinciplesofPopulationGenetics4th edition.SinauerAssociatesisanimprintof Oxford University Press.
14. CrowJF,KimuraM.2009.AnIntroductiontoPopulationGeneticsTheory.TheBlackburnPress.
15. HedrickPW.2010.GeneticsofPopulations,4th edition.Jones&BartlettLearning.