**e-Learning Material to be uploaded on Virtual C4**

Course / Programme: M.Sc. Botany

**M.Sc. (Botany), Semester-II, Paper-V, Cytogenetics and Molecular Biology**

|  |  |
| --- | --- |
| **Name of topic** | **e-content Link \*** |
| **Reading material PDF and PPT, Semester-II, Paper-V, CGMB** | |
| Restriction Mapping | [**https://drive.google.com/file/d/1\_DDKkVA0CrGy1C3BA16AtE1vcWKC1BNT/view?usp=drive\_open**](https://drive.google.com/file/d/1_DDKkVA0CrGy1C3BA16AtE1vcWKC1BNT/view?usp=drive_open) |
| Molecular Markers: an Introduction and Applications | [**https://drive.google.com/file/d/1F9rMjugHiQH7oDpl-itvzdb-JH1pTf2u/view?usp=drive\_open**](https://drive.google.com/file/d/1F9rMjugHiQH7oDpl-itvzdb-JH1pTf2u/view?usp=drive_open) |
| Gene Families: Multigene  Families and Superfamilies | [**https://drive.google.com/file/d/1dm2wv88YwjVFX-tXFBXwKWwwRZagd1BP/view?usp=drive\_open**](https://drive.google.com/file/d/1dm2wv88YwjVFX-tXFBXwKWwwRZagd1BP/view?usp=drive_open) |
| Regulation of Gene Expression | [**https://drive.google.com/file/d/1DMaEUqF28kwlKoDJRXPO\_Q208YlQVdLL/view**](https://drive.google.com/file/d/1DMaEUqF28kwlKoDJRXPO_Q208YlQVdLL/view) |
| Polyploidy | [**http://plantbreeding.coe.uga.edu/index.php?title=5.\_Polyploidy**](http://plantbreeding.coe.uga.edu/index.php?title=5._Polyploidy) |
| Methods for DNA sequencing | [**https://drive.google.com/file/d/1Y189mNVv2uY4BJAe-hwOmRgOz089QCcI/view**](https://drive.google.com/file/d/1Y189mNVv2uY4BJAe-hwOmRgOz089QCcI/view) |
| Genetic recombination | [**https://drive.google.com/file/d/12Sb7YvvPk7Bn4yA2xj9FDFzyaBcaE86c/view**](https://drive.google.com/file/d/12Sb7YvvPk7Bn4yA2xj9FDFzyaBcaE86c/view) |
| **Video lectures – Semester-II, Paper-V, CGMB.** | |
| Physical mapping of genes on chromosome:  Fluorescence In Situ Hybridization (FISH) | <https://www.youtube.com/watch?v=POJqsNUYzDw&t=29s> |
| Physical mapping of genes on chromosome: single nucleotide polymorphism (SNP). | <https://www.youtube.com/watch?v=qAOHWbBA_Vs> |
| Physical mapping of genes on chromosome: Restriction Mapping (RM). | <https://drive.google.com/file/d/1MKbYmXT3A5na3sXvi568jxMMBjAiPZrd/view?usp=drive_open> |
| Linkage and Crossing Over | <https://www.youtube.com/watch?v=LgmU5plSzuY> |
| Molecular chaperons: Heat shock proteins | <https://www.youtube.com/watch?v=Wv9csJGYLmU> |
| Regulation of gene expression | <https://www.youtube.com/watch?v=uwJGrl6_RjI> |
| Molecular Markers | <https://www.youtube.com/watch?v=pM6QW90HsnU> |
| DNA Profiling Technique | <https://www.youtube.com/watch?v=CNqGkYsTufo> |
| DNA sequencing: Maxam- Gilbert method | <https://www.youtube.com/watch?v=b2uv8i66VEU> |
| DNA sequencing methods | <https://www.youtube.com/watch?v=etpSw6xfLmM> |
| DNA sequencing: Sanger's di-deoxy method | <https://www.youtube.com/watch?v=2A7PSOt1utk> |
| Polyploidy- Introduction and Causes of Polyploidy | <https://www.youtube.com/watch?v=miQrtLduIt4> |
| Autopolyploidy and Allopolyploidy | <https://www.youtube.com/watch?v=1Lsbl91pCo4> |
| Genetic Basis of Heterosis | <https://www.youtube.com/watch?v=SA9wz1bkkZk> |
| Molecular mechanism of crossing over | <https://www.youtube.com/watch?v=Owd_gLK2dGY> |

\* e-content:

* e-content (PPT, pdf) shared as a Google Drive link.
* e-content : Own or Available as a **free learning resources preferably** offered by MHRD or similar government organizations/institutions. viz. NPTEL You tube channel, SWAYAM, SWAYAMPRABHA, e-PG Pathshala, NDL, etc.

**Sd/-**

**Professor and Head**

**Department of Botany**

**Sant Gadge Baba Amravati University,**

**Amravati.**