



A.S.D. Government Degree College for Women

An Autonomous Institution

Jagannaickpur, Kakinada, Andhra Pradesh-533002
Affiliated to Adikavi Nannaya University, Rajamahendravaram



INTERNAL QUALITY ASSURANCE CELL

2.6.1. The institution has stated learning outcomes (programme and course outcome)/graduate attributes which are integrated into the assessment process and widely publicized through the website and other documents and the attainment of the same are evaluated by the institution.

స్త్రీ విద్యా ప్రవర్ధతాం

BOTANY

COURSE OUTCOMES

(2018-23)

DEPARTMENT OF BOTANY 2018-2019

Course outcomes :

Paper-1 Microbial Diversity, Algae And Fungi

1. Students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.
2. Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
3. Classify fungi, lichens, algae ,Bacteria and Viruses based on their structure, reproduction and life cycles.
4. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them
5. Evaluate the ecological and economic value of microbes and thallophytes

Paper- II Diversity of Archegoniatae and Plant Anatomy

1. Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
2. Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles
3. Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare
4. Understand on the organization of tissues and tissue systems in plants
5. Understand the economic importance of local timbers –Teak ,Redsanders and Arjuna

Paper-III Plant Taxonomy and Embryology

1. Critically understand various taxonomical aids for identification of Angiosperms.
2. Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families
3. Illustrate and interpret various aspects of embryology
4. Identify the local angiosperms of the families prescribed to their genus and species level and prepare herbarium.
5. Understand about the principles and applications of palynology

PAPER –IV: Plant Physiology and Metabolism

1. Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
2. Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
3. Interpret the role of enzymes in plant metabolism.
4. Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
5. Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.

Paper-V: Cell Biology, Genetics and Plant Breeding

1. Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
2. Explain the organization of a eukaryotic chromosome and the structure of genetic material.
3. Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
4. Evaluate the structure, function and regulation of genetic material.
5. Understand the application of principles and modern techniques in plant breeding.

Paper –VI Plant Ecology & Phytogeography

1. Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
2. Appraise various qualitative and quantitative parameters to study the population and community ecology.
3. Correlate the importance of biodiversity and consequences due to its loss.
4. Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.
5. Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

Paper VII-(B): Elective [(A) Nursery, Gardening And Floriculture

- Understand about Nursery Management and landscaping and different gardening styles
- Make use of different plant propagation structures for plant multiplication.
- Explore the specialized organs or asexual propagules in some plants for their proliferation.
- Demonstrate skills on micropropagation of plants through vegetative propagation techniques.
- Understand about the cultivation practices of various Ornamental Plants

Cluster Elective

paper VIII,-A-1 : Plant Diversity And Human Welfare

1. Understand the concept and levels of biodiversity
2. Correlate the importance of biodiversity and consequences due to Biodiversity loss .
3. Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation
4. Understand about the various organizations involved in the conservation of Biodiversity
5. Elucidate the utilization and commercial aspects of Forestry

Paper VIII-A-2 : Ethnobotany And Medicinal Botany

1. Understand about the study of relationship between Plants and Humans
2. Learn about Phyto chemical significance of various Medicinal plant products
3. Elucidate the importance of Indigenous Medicinal sciences
4. Understand about the conservation strategies of Endangered and endemic medicinal plants
5. Emphasis the importance of Biopiracy and the value of various plants useful; for the mankind

Paper VIII-A-3: Pharmacognosy And Phytochemistry

1. Understand about different medicinal drugs obtained from Natural resources
2. Analyze Cultivation collection Extraction Isolation Bioassaying of Crude drugs of Natural origin
3. Understand about the Pharmacological actions of various drugs and drug Evaluation methods
4. Analyze the extraction of Alkaloids , Terpenoids , Phenolics etc.
5. Elucidate the significance of Aromatherapy and volatile oils

H. Suvarchala

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DEPARTMENT OF BOTANY 2019-2020

Course outcomes :

Paper-1 Microbial Diversity, Algae And Fungi

1. Students will be able to identify, compare and distinguish various groups of microbes and primitive plants based on their characteristics.
2. Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
3. Classify fungi, lichens, algae ,Bacteria and Viruses based on their structure, reproduction and life cycles.
4. Illustrate diversity among the viruses and prokaryotic organisms and can categorize them
5. Evaluate the ecological and economic value of microbes and thallophytes

Paper- 2 Diversity of Archegoniatae and Plant Anatomy

1. Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
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5. Understand the economic importance of local timbers –Teak ,Red sanders and Arjuna

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1. Critically understand various taxonomical aids for identification of Angiosperms.
2. Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families
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5. Understand about the principles and applications of palynology

PAPER –IV: Plant Physiology and Metabolism

1. Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
2. Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
3. Interpret the role of enzymes in plant metabolism.
4. Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
5. Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.

Paper-V: Cell Biology, Genetics and Plant Breeding

1. Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
2. Explain the organization of a eukaryotic chromosome and the structure of genetic material.
3. Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
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Paper –VI Plant Ecology & Phytogeography

1. Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
2. Appraise various qualitative and quantitative parameters to study the population and community ecology.
 - Correlate the importance of biodiversity and consequences due to its loss.
 - Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation
 - Locate different phytogeographical regions of the world and India and can analyze their floristic wealth

Paper VII-(B): Elective [(A) Nursery, Gardening And Floriculture

1. Understand about Nursery Management and landscaping and different gardening styles
2. Make use of different plant propagation structures for plant multiplication.
3. Explore the specialized organs or asexual propagules in some plants for their proliferation.
4. Demonstrate skills on micropropagation of plants through vegetative propagation techniques.
5. Understand about the cultivation practices of various Ornamental Plants

Paper VIII, Cluster Elective, Cluster-A,

paper VIII,-A-1 : Plant Diversity And Human Welfare

1. Understand the concept and levels of biodiversity
2. Correlate the importance of biodiversity and consequences due to its loss.
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1. Understand about the study of relationship between Plants and Humans
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3. Elucidate the importance of Indigenous Medicinal sciences
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5. Emphasize the importance of Biopiracy and the value of various plants useful; for the mankind

Paper VIII-A-3: Pharmacognosy And Phytochemistry

1. Understand about different medicinal drugs obtained from Natural resources
2. Analyze Cultivation collection Extraction Isolation Bioassaying of Crude drugs of Natural origin
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4. Analyze the extraction of Alkaloids , Terpenoids , Phenolics etc.
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DEPARTMENT OF BOTANY 2020-2021

Course outcomes

Semester – I - Fundamentals of Microbes and Non-vascular Plants

- Explain origin of life on the earth.
 - Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.
- Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and life cycles.
- Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
- Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
- Evaluate the ecological and economic value of microbes, thallophytes and bryophyte

Semester – II- Basics of Vascular plants and Phytogeography

- Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and life cycles.
- Justify evolutionary trends in tracheophytes to adapt for land habitat.
- Explain the process of fossilization and compare the characteristics of extinct and extant plants.
- Critically understand various taxonomical aids for identification of Angiosperms.
- Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.
- Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.
- Locate different phytogeographical regions of the world and India and can analyze their floristic wealth.

Semester - III

Paper-3 Plant Taxonomy and Embryology

1. Critically understand various taxonomical aids for identification of Angiosperms.
2. Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families
3. Illustrate and interpret various aspects of embryology
4. Identify the local angiosperms of the families prescribed to their genus and species level and prepare herbarium.
5. Understand about the principles and applications of palynology

Semester - IV

Plant Physiology and Metabolism

Course outcomes:

Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.

- Evaluate the role of minerals in plant nutrition and their deficiency symptoms.
- Interpret the role of enzymes in plant metabolism.
- Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
- Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.
 - Evaluate the physiological factors that regulate growth and development in plants.
- Examine the role of light on flowering and explain physiology of plants under stress conditions

Semester – V Paper-V

Cell biology , Genetics & Plant Breeding

1. Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
2. Explain the organization of a eukaryotic chromosome and the structure of genetic material.
3. Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
4. Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
5. Understand the application of principles and modern techniques in plant breeding

Semester – VI Paper-VI

Plant Ecology & phytogeography

1. Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
2. Appraise various qualitative and quantitative parameters to study the population and community ecology.
3. Correlate the importance of biodiversity and consequences due to its loss.
4. Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation
5. Locate different phytogeographical regions of the world and India and can analyze their floristic wealth

Paper VII-(B): Elective [(A) Nursery Gardening

1. Understand about Nursery Management and landscaping and different gardening styles
2. Make use of different plant propagation structures for plant multiplication.
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DEPARTMENT OF BOTANY 2021-2022

COURSE OUTCOMES

SEMESTER – 1

- Explain origin of life on the earth.
- Illustrate diversity among the viruses and prokaryotic organisms and can categorize them.
- Classify fungi, lichens, algae and bryophytes based on their structure, reproduction and lifecycles.
- Analyze and ascertain the plant disease symptoms due to viruses, bacteria and fungi.
- Recall and explain the evolutionary trends among amphibians of plant kingdom for their shift to land habitat.
- Evaluate the ecological and economic value of microbes, thallophytes and bryophytes.
Microbial diversity

SEMESTER – 2

- Classify and compare Pteridophytes and Gymnosperms based on their morphology, anatomy, reproduction and lifecycles.
- Justify evolutionary trends in tracheophytes to adapt for land habitat.
- Explain the process of fossilization and compare the characteristics of extinct and extant plants.
- Critically understand various taxonomical aids for identification of Angiosperms.
- Analyze the morphology of the most common Angiosperm plants of their localities and recognize their families.
- Evaluate the ecological, ethnic and economic value of different tracheophytes and summarize their goods and services for human welfare.
- Locate different phytogeographical regions of the world and India and can analyze their floristic wealth

SEMESTER-3

- Understand on the organization of tissues and tissue systems in plants.
- Illustrate and interpret various aspects of embryology.
- Discuss the basic concepts of plant ecology, and evaluate the effects of environmental and biotic factors on plant communities.
- Appraise various qualitative and quantitative parameters to study the population and community ecology.
- Correlate the importance of biodiversity and consequences due to its loss.
- Enlist the endemic/endangered flora and fauna from two biodiversity hot spots in India and assess strategies for their conservation.

SEMESTER – 4


- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- Demonstrate techniques to observe the cell and its components under a microscope.
- Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
- Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- Evaluate the structure, function and regulation of genetic material.
- Understand the application of principles and modern techniques in plant breeding.
- Explain the procedures of selection and hybridization for improvement of crops.

SEMESTER -5

- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- Demonstrate techniques to observe the cell and its components under a Microscope.
- Discuss the basics of Mendelian genetics, its variations and interpret inheritance of traits in living beings.
- Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- Evaluate the structure, function and regulation of genetic material.
- Understand the application of principles and modern techniques in plant breeding.
- Explain the procedures of selection and hybridization for improvement of crops.

SEMESTER – 6

- Study about tissue culture methods and applications are extensively studied with application point of view
- Plant biotechnology reveals new trends in plant sciences this was extensively studied
- Diversified plants are studied extensively
- Ornamental plants study is possible
- Secondary metabolites are studied from phytochemistry
- Medicinal plants are extensively studied from different species of plants


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COURSE OUTCOMES

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SEMESTER-3

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SEMESTER – 4

- Comprehend the importance of water in plant life and mechanisms for transport of water and solutes in plants.
- Evaluate the role of minerals in plant nutrition and their deficiency symptoms. Interpret the role of enzymes in plant metabolism.
- Critically understand the light reactions and carbon assimilation processes responsible for synthesis of food in plants.
- Analyze the biochemical reactions in relation to Nitrogen and lipid metabolisms.

- Evaluate the physiological factors that regulate growth and development in plants
- . Examine the role of light on flowering and explain physiology of plants under stress conditions.
- Distinguish prokaryotic and eukaryotic cells and design the model of a cell.
- Explain the organization of a eukaryotic chromosome and the structure of genetic material.
- Demonstrate techniques to observe the cell and its components under a microscope.
- Discuss the basics of Mendelian genetics, its variations and interpret

inheritance of traits in living beings.

- Elucidate the role of extra-chromosomal genetic material for inheritance of characters.
- Evaluate the structure, function and regulation of genetic material.
- Understand the application of principles and modern techniques in plant breeding.
- Explain the procedures of selection and hybridization for improvement of crops.
- **SEMESTER -5**
- Make use of different plant propagation structures for plant multiplication.
- Explore the specialized organs or asexual propagules in some plants
- for their proliferation.
- Demonstrate skills on micropropagation of plants through vegetative
- Propagation techniques.
- Evaluate and use a suitable propagation technique for a given plant species.
- Explain the causes for seed dormancy and methods to break dormancy.
- Understand critical concepts of seed processing and seed storage procedures.
- Acquire skills related to various seed testing methods.
- Identify seed borne pathogens and prescribe methods to control them.
- Understand the legislations on seed production and procedure of seed certification



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