

Exo Microbiology Workshops

Exo Microbiology Workshops

NTHRYS BIOTECH LABS provides a diverse array of workshops in the realm of Exo-Microbiology. Explore our comprehensive offerings below

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From Lab to Life: Choose Your Exo Microbiology Workshop!

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1. Workshop in Introduction to Exo-Microbiology

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Culturing Extremophiles for Exo-Microbiology

Hands-on training on culturing extremophiles.

Protocols for isolating and culturing microorganisms from extreme environments like high salinity, temperature, and radiation.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Astrobiological Soil and Water Analysis

Practical session on analyzing soil and water samples for potential exo-microbiological life.

Protocols for simulating Martian and extraterrestrial soil conditions for microbial growth.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Microbial Metabolism in Space-Like Conditions

Discussion on microbial metabolism under space-like conditions.

Protocols for examining metabolic pathways and energy production in low-gravity and vacuum conditions.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Detection of Biosignatures in Space

Hands-on workshop on detecting microbial biosignatures.

Protocols for identifying key biosignatures using molecular techniques like PCR and DNA sequencing.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.

Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

2. Workshop in Microbial Survival in Space

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.
Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Microbial Radiation Resistance Testing

Hands-on training on testing microbial resistance to radiation.
Protocols for exposing microbes to different levels of cosmic and UV radiation and measuring survival rates.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Freeze-Drying and Preservation of Microbes for Space Missions

Practical session on preserving microbes for space missions.
Protocols for freeze-drying, lyophilization, and cryopreservation of microbial cultures for long-term storage.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Microbial Growth in Microgravity

Hands-on workshop on studying microbial growth in microgravity conditions.
Protocols for simulating microgravity and measuring growth kinetics of space-faring microorganisms.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Development of Microbial Biofilms in Space

Practical session on microbial biofilm formation in space environments.
Protocols for monitoring biofilm development on spacecraft surfaces and preventing contamination.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.
Dialogue on overcoming challenges in adopting new technologies in similar sectors.
Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

3. Workshop in Astrobiology and Microbial Genetics

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.
Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Genome Sequencing of Extremophiles

Hands-on training on sequencing the genomes of extremophiles.

Protocols for extracting DNA and sequencing microbial genomes from extreme environments.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Genetic Adaptations to Extraterrestrial Environments

Discussion on genetic adaptations in microbes for survival in space.
Protocols for identifying specific genetic traits and mutations that enable microbial life in extraterrestrial environments.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: CRISPR-Cas9 Applications in Exo-Microbiology

Practical session on using CRISPR-Cas9 for microbial genetic editing.
Protocols for engineering microbial strains with enhanced survival traits for space missions.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Metagenomics for Astrobiological Exploration

Hands-on workshop on metagenomics for astrobiology.
Protocols for studying microbial communities in extraterrestrial analog environments using metagenomics.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.
Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

4. Workshop in Microbial Life Detection Protocols

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Sample Collection from Extreme Environments

Practical session on collecting microbial samples from extreme environments.

Protocols for aseptic collection of samples from glaciers, hydrothermal vents, and deserts.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Microbial Detection Using

Fluorescent Microscopy

Hands-on workshop on detecting microbial life using fluorescence microscopy. Protocols for staining microbes with fluorescent dyes and analyzing them under the microscope.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Raman Spectroscopy for Biosignature Detection

Hands-on training on using Raman spectroscopy for detecting microbial biosignatures. Protocols for identifying biomolecules in extraterrestrial soil and rock samples.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Molecular Detection of Microbes in Space Samples

Practical session on molecular techniques for detecting microbes in space samples. Protocols for PCR amplification and sequencing of microbial DNA from space missions.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today. Dialogue on overcoming challenges in adopting new technologies in similar sectors. Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

5. Workshop in Biomanufacturing in Space

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Microbial Production of Biopolymers in Space

Practical session on microbial biopolymer production in space.

Protocols for optimizing the production of biopolymers under microgravity conditions.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Microbial Bioreactors for Space Applications

Hands-on training on setting up microbial bioreactors for space environments.

Protocols for bioreactor design, microbial growth monitoring, and product extraction in space.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Microbial Biosynthesis of Pharmaceuticals

Hands-on workshop on microbial production of pharmaceuticals in space.
Protocols for producing key pharmaceuticals using engineered microbes in space bioreactors.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Biofabrication Using Microbes in Space

Practical session on microbial biofabrication in space.
Protocols for biofabricating materials like bioplastics, textiles, and other bioproducts using microbes.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.
Dialogue on overcoming challenges in adopting new technologies in similar sectors.
Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

6. Workshop in Microbial Ecology in Space

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Microbial Communities in Closed Life Support Systems

Hands-on training on managing microbial communities in closed life support systems.

Protocols for monitoring and controlling microbial populations in confined habitats.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Microbial Interactions in Space Habitats

Practical session on studying microbial interactions in space habitats.

Protocols for assessing symbiosis, competition, and antagonism among microbial species in space.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Biogeochemical Cycles in Space Ecosystems

Discussion on biogeochemical cycles in space environments.

Protocols for monitoring nutrient cycling, gas exchange, and microbial metabolism in space ecosystems.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Microbial Contamination Control in Space Missions

Practical session on controlling microbial contamination in space missions. Protocols for decontaminating spacecraft, habitats, and equipment using biocidal agents and physical methods.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today. Dialogue on overcoming challenges in adopting new technologies in similar sectors. Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

7. Workshop in Synthetic Biology for Exo-Microbiology

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Designing Synthetic Microbes for Space

Hands-on workshop on designing synthetic microbes for space exploration.

Protocols for constructing synthetic microbial strains with enhanced space survival traits.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Gene Circuits for Space-Based Applications

Practical session on creating gene circuits for space-based applications.

Protocols for designing and implementing gene circuits that respond to extraterrestrial stimuli.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Synthetic Pathways for Biofuel Production in Space

Hands-on training on engineering synthetic pathways for biofuel production.

Protocols for optimizing biofuel production in space using synthetic microbes.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Environmental Biosensors Using Synthetic Biology

Practical session on developing biosensors using synthetic biology.

Protocols for engineering synthetic microbes to detect extraterrestrial environmental changes.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.
Dialogue on overcoming challenges in adopting new technologies in similar sectors.
Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

8. Workshop in Bioinformatics for Exo-Microbiology

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.
Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Analyzing Extremophilic Microbial Genomes

Hands-on workshop on analyzing extremophilic genomes.
Protocols for using bioinformatics tools to identify genes and pathways involved in extreme condition survival.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Metagenomic Analysis of Space-Like Microbial Communities

Practical session on metagenomic analysis of microbial communities in space-like environments.
Protocols for processing and analyzing metagenomic data from extraterrestrial analogs.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Comparative Genomics of Space-Resistant Microbes

Hands-on training on comparative genomics.
Protocols for comparing genomes of space-resistant microbes to identify key survival mechanisms.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Phylogenetic Analysis of Space-Faring Microbes

Practical session on constructing phylogenetic trees of space-faring microbes.
Protocols for building phylogenies and analyzing evolutionary relationships among extremophiles.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.

Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

9. Workshop in Microbial Bioremediation for Space Habitats

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Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Microbial Degradation of Space Contaminants

Practical session on microbial degradation of contaminants in space habitats.

Protocols for using microbes to break down hazardous chemicals and waste in closed space environments.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Microbial Recycling of Waste for Resource Recovery

Hands-on training on microbial recycling systems.

Protocols for converting waste materials into usable resources, such as oxygen and water, using microbial processes.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Microbial Bioremediation of Air Contaminants

Practical session on using microbes to clean the air in space habitats.

Protocols for removing volatile organic compounds (VOCs) and other contaminants from the air using bioreactors.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Biofilters for Wastewater Treatment in Space

Hands-on workshop on designing biofilters for wastewater treatment in space habitats.

Protocols for constructing and optimizing biofilters for recycling wastewater into potable water.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.

Dialogue on overcoming challenges in adopting new technologies in similar sectors.

Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

10. Workshop in Exo-Microbial Symbiosis for Space Agriculture

+

Date: Pre Selected Date

Fee: Rs 6000/-

Duration: One Day

Mode: Offline and Virtual

Location for Offline: NBL Cherlapalli IDA Branch

Facilitator(s): NTHRYS TEAM

8:00 AM - 8:30 AM: Registration and Welcome Coffee

Participants arrive, register, and network over coffee.

8:30 AM - 8:45 AM: Opening Remarks

Welcome by the host.

Brief overview of today's focus.

8:45 AM - 10:15 AM: Session 1: Rhizobial Symbiosis for Space Crops

Practical session on enhancing rhizobial symbiosis in space-grown crops.

Protocols for inoculating plants with rhizobia to improve nitrogen fixation and crop yields in space habitats.

10:15 AM - 10:30 AM: Coffee / Tea / Snacks Break

Networking and refreshments.

10:30 AM - 12:00 PM: Session 2: Mycorrhizal Fungi for Space Agriculture

Hands-on workshop on mycorrhizal fungi in space agriculture.

Protocols for inoculating space crops with mycorrhizal fungi to improve nutrient uptake and growth.

12:00 PM - 1:00 PM: Lunch Break

Catered lunch and networking opportunity.

1:00 PM - 2:30 PM: Session 3: Cyanobacterial Symbiosis for Oxygen Production

Practical session on cyanobacterial symbiosis in space environments.
Protocols for using cyanobacteria to produce oxygen and nutrients for space habitats and crops.

2:30 PM - 2:45 PM: Short Break

Time for a stretch and informal discussions.

2:45 PM - 4:15 PM: Session 4: Microbial Symbiosis for Soil Formation in Space

Hands-on training on microbial symbiosis for soil formation.
Protocols for using microbes to convert regolith into fertile soil for growing crops in extraterrestrial environments.

4:15 PM - 4:30 PM: Coffee / Tea / Snacks Break

Last networking opportunity with snacks.

4:30 PM - 5:30 PM: Closing Session: Implementing Changes and Technology Adoption

Group discussions on implementing new techniques learned today.
Dialogue on overcoming challenges in adopting new technologies in similar sectors.
Feedback session and closing remarks.

Certificate Issue

5:30 PM: Workshop Concludes

Note: NTHRYS Management reserves the right to modify the workshop module at any time without prior notice. Registered or enrolled candidates will receive the module that is current on the day of enrollment.

NTHRYS Workshops Department

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Email: workshops (a t) nthrys [d0t] com

Exo Microbiology Workshops Application Process

1. Select a workshop from the list.
2. Contact via whatsapp on the number present above to request fee details and dates suitable for joining. Alternatively, you can send an email to workshops (a t) nthrys [d 0 t] com.
3. Our Workshop department will contact you promptly to provide further assistance.