



Lesson Plan No. 1	Course Name: Environment & Sustainability Topic: Introduction to Sustainability: Humanity and the Environment: What is Sustainability?	Course No.: NCC-201
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Objectives	<ol style="list-style-type: none">At the end of the lesson the student shall be able to:articulate the concept of Environment and Sustainabilityunderstand the appropriate Sustainability: Humanity and the EnvironmentArticulate different environmental risks and issues and potential interventions to tackle them.Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	<ol style="list-style-type: none">Video of Milankovitch (orbit) cycles by NASA(climate.nasa.gov)Use of Google form/Nearpod tool for online quiz
Teaching Development	<ol style="list-style-type: none">Introduction (5 minutes)<ul style="list-style-type: none">Ask questions<ul style="list-style-type: none">What do you understand by Climate change?How we can make a change in Climate and Global Warming issues?Do you know the major issues related to climate?What do you understand by sustainability?Introduce the concept of sustainability. Show Figure on slide.Talk about Human, sustainability and environmentIntroduction to Sustainability utilizing the resource from Science direct. https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/environmental-sustainabilityHighlight the Challenges for Sustainability.Development (30 minutes)<ol style="list-style-type: none">Sustainability<ul style="list-style-type: none">Introduce the concept of sustainability, effect on human and environment etc.Show video of sustainability https://www.youtube.com/watch?v=rmQby7adocMIPAT Equation<ul style="list-style-type: none">Introduce the concepts of IPAT with some examples.Show figures to illustrate IPAT equation- Give example of notations with reference to human impact on environment which can be easily understood by the students.Major human impact on the environment



	<ul style="list-style-type: none">- Human Consumption Patterns and the “Rebound” Effect-Types of effectsd. Challenges for sustainability<ul style="list-style-type: none">- Soil exploitation and overbuilding- Pollution- Loss of biodiversity3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects Use Nearpod to collect responses and discuss the answers.
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading<ul style="list-style-type: none">- Environmental sustainability Paper on science direct https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/environmental-sustainability3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on environment/sustainability <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 2	Course Name: Environment & Sustainability Topic: The IPAT Equation, Human Consumption Patterns.	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: a. articulate the concept of IPAT equation b. understand the Environmental impacts of population, understand the appropriate Sustainability: Humanity c. Articulate different environmental risks due to population growth and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	a. Video of Milankovitch (orbit) cycles/ and planet earth from space (https://courses.lumenlearning.com/) by NASA(climate.nasa.gov) b. Use of Google form/Nearpod tool for online quiz
Teaching Development	1. Introduction (5 minutes) - Ask questions What do you understand by Climate and Global risks? How we can make a change in Climate and Global issues? Do you know the major issues related to climate? What do you understand by sustainability? - Introduce the concept of sustainability. Show Figure on slide. - Talk about Human, sustainability and environment - Introduction to IPAT Equation. https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/the-ipat-equation/ - Highlight the Challenges for Sustainability. 2. Development (30 minutes) a. Sustainability revise - Show Fact data of IPAT https://cea.org.uk/downloads/docs/Support/Fact%20File%3A%20A2/2019/The%20IPAT%20Equation%20Fact%20file%20.pdf b. IPAT Equation - Introduce the concepts of IPAT with some examples. - Show figures to illustrate IPAT equation- Give example of notations with reference to human impact on environment which can be easily



	<p>understood by the students.</p> <p>c. Major Population impact on the environment</p> <ul style="list-style-type: none">- Air pollutants- Water pollutants- Toxic materials- Greenhouse gases <p>d. Human Consumption Patterns and the “Rebound” Effect</p> <ul style="list-style-type: none">-Types of effects <p>e. Challenges for sustainability</p> <ul style="list-style-type: none">- Deserification- Soil exploitation and overbuilding- Pollution- Loss of biodiversity <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p> <ul style="list-style-type: none">- Population problem and affluence- (Resources) Renewable or not- Reduce, reuse and recycle- Save energy- Inspire sustainable attitudes) <p>Use Nearpod to collect responses and discuss the answers</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading<ul style="list-style-type: none">- IPAT Equation https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/the-ipat-equation/- https://ceea.org.uk/downloads/docs/Support/Fact%20File%3A%20A2/2019/The%20IPAT%20Equation%20Fact%20file%202.pdf- https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/environmental-sustainability3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on IPAT Equation



Model Institute of Engineering
& Technology (Autonomous)
Lesson Plan

Kot Bhalwal, Jammu

Spend 5 minutes to evaluate student assimilation of the lesson contents





Lesson Plan No. 3	Course Name: Environment & Sustainability Topic: The “Rebound” Effect, Challenges for Sustainability.	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: a. articulate the concept of Human consumption and Rebound effect b. understand the impacts of population on Environmental, understand the appropriate Sustainability: Humanity c. Articulate different environmental risks due to population growth and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	a. Reference research material on Human consumption and Rebound effect - https://www.frontiersin.org/articles/10.3389/fenrg.2018.00081/full b. Use of Google form.
Teaching Development	1. Introduction (5 minutes) - Ask questions Do you know the major issues related to climate? What do you understand by Human Consumption? - Introduce the concept of Human consumption. Show Figure on slide. - Talk about Human, sustainability and environment - Introduction to Human Consumption and Rebound effect https://www.frontiersin.org/articles/10.3389/fenrg.2018.00081/full - https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/human-consumption-patterns-and-the-rebound-effect/ - Highlight the Challenges for Sustainability. 2. Development (30 minutes) a. Sustainability revise - Show Fact data of Human Consumption b. Rebound effect - Introduce the concepts of rebound equation with some examples. - Show figures to illustrate rebound- Give example of notations with reference to human impact on environment which can be easily understood by the students. c. Human Consumption Patterns and the “Rebound” Effect -Types of effects d. Challenges for sustainability - Pollution - Loss of biodiversity



	<p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p> <ul style="list-style-type: none">- Save energy- Inspire sustainable attitudes) <p>Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading3. Consumption pattern and rebound effect(https://www.frontiersin.org/articles/10.3389/fenrg.2018.00081/full)4. https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/human-consumption-patterns-and-the-rebound-effect/5. Homework6. Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings.</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on Human Consumption and rebound Effect <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 4	Course Name: Environment & Sustainability Topic: Climate Processes; External and Internal Controls,	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none"> a. articulate the concept of Climate Processes b. understand the appropriate Climate Sustainability c. Articulate different environmental risks and issues and potential interventions to tackle them. <p>Appreciate global sustainability best practices in diverse domains.</p>
Teaching Aids (if any)	<ul style="list-style-type: none"> a. Material for reference on Climate processes https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-and-global-change-chapter-introduction/ b. Use of Google form for online quiz.
Teaching Development	<ol style="list-style-type: none"> 1. Introduction (5 minutes) <ul style="list-style-type: none"> - Ask questions What do you understand by Climate processes? How we can make a change in Climate and Global issues? Do you know the major issues related to climate? - Introduce the concept of sustainability. Show Figure on slide. - Talk about Human, sustainability and environment - Introduction to Sustainabilityutilizing the resource - https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-and-global-change-chapter-introduction/ - Highlight the Challenges for Sustainability. 2. Development (30 minutes) <ol style="list-style-type: none"> a. Sustainability <ul style="list-style-type: none"> - Introduce the concept of Insolation, effect on human and environment etc. - https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-and-global-change-chapter-introduction/ b. Climate Processes c. - Introduce the concepts of Climate Processes with some examples. d. - Show figures to illustrate Climate Processes. Give example of notations with reference to human impact on environment which can be easily understood by the students. e. Challenges for sustainability <ul style="list-style-type: none"> - Pollution - Loss of biodiversity



	<p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p> <ul style="list-style-type: none">- Renewable or not- Reduce, reuse and recycle- Save energy- Inspire sustainable attitudes) <p>Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading<ul style="list-style-type: none">- Climate processes:https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-and-global-change-chapter-introduction/3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on Climate Processes. <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 5	Course Name: Environment & Sustainability Topic: Modern Climate Change.	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: <ol style="list-style-type: none"> articulate the concept of Modern climate change understand the appropriate Sustainability and green-house gases Articulate different environmental risks and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	<ol style="list-style-type: none"> Research material from research gate: https://www.researchgate.net/publication/8975416_Modern_Global_Change Use of Google form.
Teaching Development	<ol style="list-style-type: none"> Introduction (5 minutes) <ul style="list-style-type: none"> Ask questions <ul style="list-style-type: none"> What do you understand by Modern Climate change? How we can reduce the impact of climate change? Do you know the major issues related to climate? What do you understand by importance of Green- house gases? Introduce the concept of sustainability. Show Figure on slide. Talk about Human, sustainability and environment Introduction to Sustainabilityutilizing the resource from https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-processes-external-and-internal-controls/ Highlight the Challenges for Sustainability. Development (30 minutes) <ol style="list-style-type: none"> Sustainability <ul style="list-style-type: none"> Introduce the concept of sustainability, effect on human and environment etc. –research article from research gate; https://www.researchgate.net/publication/8975416_Modern_Global_Change Introduce the concepts of modern Climate change with some examples. <ul style="list-style-type: none"> Show figures to illustrate modern Climate change - Give example of notations with reference to human impact on environment which can be easily understood by the students. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects



	<ul style="list-style-type: none">- Effect of climate change on our life- Creative thinking to make earth a better place to live in- Role of individual in reducing the impact of climate change- Inspire sustainable attitudes) <p>Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading<ul style="list-style-type: none">- Environmental sustainability Paper on research gate:https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-processes-external-and-internal-controls/3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings.</p>



Lesson Plan No. 6	Course Name: Environment & Sustainability Topic: Climate Projections	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: a. articulate the concept of Environment and Climate Projections b. understand the appropriate Sustainability: Humanity and the Environment c. Articulate different environmental risks and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	a. Material on climate projection (https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-projections/) b. Use of Google form for online quiz
Teaching Development	1. Introduction (5 minutes) - Ask questions What do you understand by Climate projections? How we can make a change in Climate and Global issues in future? Do you know the major issues related to climate change? - Introduce the concept of future projections and sustainability. Show Figure on slide. - Talk about sustainability and environment, climate change and risks involved. - Introduction to Sustainability utilizing the resource - (https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-projections/) - Highlight the Challenges for Sustainability. 2. Development (30 minutes) a. Sustainability - Introduce the concept of sustainability, effect on human and environment etc. -Climate projections - Introduce the concepts of Climate projections with some examples. - Show figures to illustrate climate projections- Give example of notations with reference to human impact on environment which can be easily understood by the students. b. Major human impact on the environment - Air pollutants



	<ul style="list-style-type: none">- Water pollutants- Toxic materials- Greenhouse gases <p>c. Climate projection and Effect on ecosystem. -Types of effects</p> <p>d. Challenges for sustainability - Desertification</p> <ul style="list-style-type: none">- Soil exploitation and overbuilding- Pollution- Loss of biodiversity <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading<ul style="list-style-type: none">- Climate projections- https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/climate-projections/3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on Climate projections <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 7	Course Name: Environment & Sustainability Topic: Biosphere	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">a. articulate the concept of Biosphereb. understand the appropriate biosphere Sustainabilityc. Articulate different Biosphere risks and issues and potential interventions to tackle them. Appreciate global Biosphere sustainability best practices in diverse domains.
Teaching Aids (if any)	<ul style="list-style-type: none">a. Material on biosphere for the reference of students (https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biosphere-chapter-introduction/)b. Use of Google form for online quiz
Teaching Development	<ol style="list-style-type: none">1. Introduction (5 minutes)<ul style="list-style-type: none">- Ask questions What do you understand by Biosphere? How we can make a change in Biosphere? Do you know the major issues related to Biosphere? What do you understand by Atmosphere?- Introduce the parts of Biosphere. Show Figure on slide.- Talk about atmosphere, Lithosphere and Hydrosphere- Introduction to Biosphere (https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biosphere-chapter-introduction/)- Highlight the Challenges for saving biosphere.2. Development (30 minutes)<ol style="list-style-type: none">a. Sustainability<ul style="list-style-type: none">- Introduce the concept of sustainability, effect on human and environment etc.- Show video of sustainability https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biosphere-chapter-introduction/b. Biosphere and its parts<ul style="list-style-type: none">- Introduce the concepts of Biosphere with some examples.- Show figures to illustrate Biosphere - Give example of notations with reference to human impact on environment which can be easily



	<p>understood by the students.</p> <p>c. Major polluting biosphere impact on the environment</p> <ul style="list-style-type: none">- Atmosphere- Hydrosphere- Lithosphere <p>d. Biosphere pollutants</p> <ul style="list-style-type: none">-Types of effects <p>e. Challenges for Biosphere sustainability</p> <ul style="list-style-type: none">- Desertification- Soil exploitation and overbuilding- Pollution- Loss of biodiversity <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biosphere-chapter-introduction/3. Homework<ul style="list-style-type: none">- Create your video log highlighting environment and sustainability concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on environment/sustainability <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 8	Course Name: Environment & Sustainability Topic: Flow of Energy in the Earth System.	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: <ul style="list-style-type: none">a. articulate the concept of Energy Flow Cycleb. understand the Energy flow cycle: Biogeochemical cyclec. Articulate different environmental risks and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	<ul style="list-style-type: none">a. Content on Energy flow cycle https://sciencing.com/energy-cycle-ecosystem-8881.htmlb. Use of Google form for online quiz
Teaching Development	<ol style="list-style-type: none">1. Introduction (5 minutes)<ul style="list-style-type: none">- Ask questions What do you understand by Energy flow cycle? How we can make a change in Energy flow cycle? Do you know the major issues related to climate?- Introduce the concept of Biochemical cycle. Show Figure on slide.- Talk about Biogeochemical cycle- Introduction to Energy flow cycles https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biogeochemical-cycles-and-the-flow-of-energy-in-the-earth-system/- Highlight the Challenges of Energy flow.2. Development (30 minutes)<ol style="list-style-type: none">a. Sustainability<ul style="list-style-type: none">- Introduce the concept of sustainability, effect on human and environment etc. https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biogeochemical-cycles-and-the-flow-of-energy-in-the-earth-system/b. Biogeochemical cycle- Energy Flow Cycle<ul style="list-style-type: none">- Introduce the concepts of Energy flow cycle with some examples.- Show figures to illustrate Energy Flow Cycle- Give example of notations with reference to human impact on environment which can be easily understood by the students.



	<p>c. Energy flow cycle and biochemical cycles -Types of effects</p> <p>d. Challenges for sustainability - Soil exploitation and overbuilding - Pollution - Loss of biodiversity</p> <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p> <ul style="list-style-type: none">- Save energy- Inspire sustainable attitudes) <p>Use Nearpod to collect responses and discuss the answers.</p>
Closure	<p>1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.</p> <p>2. Suggested Reading Energy Flow Cycle and Biogeochemical cycles https://sciencing.com/energy-cycle-ecosystem-8881.html https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biogeochemical-cycles-and-the-flow-of-energy-in-the-earth-system/</p> <p>3. Homework - Create your video log highlighting Energy flow cycle's concepts and submit on Google classroom</p> <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<p>1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.</p> <p>2. Google form Quiz on environment/sustainability Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 9	Course Name: Environment & Sustainability Topic: Biodiversity and Species Loss	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: a. articulate the concept of Biodiversity b. understand the biodiversity: biodiversity loss with reference to species and ecosystems c. Articulate different biodiversity loss risks and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	a. Video content on biodiversity: https://www.youtube.com/watch?v=ErATB1aMiSU b. Use of Google form for online quiz
Teaching Development	1. Introduction (5 minutes) - Ask questions What do you understand by Biodiversity? How we can make a change in biodiversity loss? Do you know the major issues related to this loss? - Introduce the concept of biodiversity. Show Figure on slide. - Talk about Biodiversity, with some real world examples - Introduction to biodiversity - https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function/ - Highlight the Challenges to tackle biodiversity loss. 2. Development (30 minutes) a. Biodiversity and species loss - Introduce the concept of Species diversity, affect of human activities etc. - https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function/ b. Biodiversity- types of biodiversity - Introduce the concepts of biodiversity and biodiversity loss with some examples. - Show figures to illustrate types of biodiversity- Give example of notations with reference to human impact on environment which can be easily understood by the students. c. Major human impact on the environment which affect biodiversity



	<p>with reference to</p> <ul style="list-style-type: none">- Air pollutants- Water pollutants- Toxic materials- Greenhouse gases <p>d. Biodiversity and species loss</p> <ul style="list-style-type: none">-Types of biodiversity <p>e. Challenges for preserve biodiversity</p> <ul style="list-style-type: none">- Desertification- Pollution- Loss of biodiversity <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects</p> <p>Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading3. Biodiversity and value of biodiversity<ul style="list-style-type: none">- https://www.youtube.com/watch?v=ErATB1aMiSU- https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function4. Homework5. Create your video log highlighting Values of Biodiversity concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on environment/sustainability <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>



Lesson Plan No. 10	Course Name: Environment & Sustainability Topic: Biodiversity, Species Loss and Ecosystem Function	Course No.: NCC-201
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Objectives	At the end of the lesson the student shall be able to: a. articulate the concept of Biodiversity b. understand the biodiversity: biodiversity loss with reference to species and ecosystems c. Articulate different biodiversity loss risks and issues and potential interventions to tackle them. Appreciate global sustainability best practices in diverse domains.
Teaching Aids (if any)	a. Video content on biodiversity: https://www.youtube.com/watch?v=ErATB1aMiSU b. Use of Google form for online quiz
Teaching Development	<ol style="list-style-type: none">1. Introduction (5 minutes)<ul style="list-style-type: none">- Ask questions What do you understand by Biodiversity? How we can make a change in biodiversity loss? Do you know the major issues related to this loss?- Introduce the concept of biodiversity. Show Figure on slide.- Talk about Biodiversity, with some real world examples- Introduction to biodiversity- https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function/- Highlight the Challenges to tackle biodiversity loss.2. Development (30 minutes)<ol style="list-style-type: none">a. Biodiversity and species loss<ul style="list-style-type: none">- Introduce the concept of Species diversity, affect of human activities etc.- (https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function)b. Biodiversity- types of biodiversity<ul style="list-style-type: none">- Introduce the concepts of biodiversity and biodiversity loss with some examples.- Show figures to illustrate types of biodiversity- Give example of notations with reference to human impact on environment which can be easily understood by the students.



	<p>c. Major human impact on the environment which affect biodiversity with reference to</p> <ul style="list-style-type: none">- Air pollutants- Water pollutants- Toxic materials- Greenhouse gases <p>d. Biodiversity and species loss</p> <ul style="list-style-type: none">-Types of biodiversity <p>e. Challenges for preserve biodiversity</p> <ul style="list-style-type: none">- Desertification- Pollution- Loss of biodiversity <p>3. Exercise (5 minutes) – Give different use-cases and make students think about sustainability aspects Use Nearpod to collect responses and discuss the answers.</p>
Closure	<ol style="list-style-type: none">1. Summarize the Lesson Learning Outcomes and get affirmation from students on these.2. Suggested Reading3. Biodiversity and value of biodiversity<ul style="list-style-type: none">- https://www.youtube.com/watch?v=ErATB1aMiSU- https://courses.lumenlearning.com/suny-sustainability-a-comprehensive-foundation/chapter/biodiversity-species-loss-and-ecosystem-function4. Homework5. Create your video log highlighting Values of Biodiversity concepts and submit on Google classroom <p>Spend 5 minutes to wrap up and consolidate the learnings</p>
Evaluation	<ol style="list-style-type: none">1. Reflective Questions (What, Why, Who?). Allow students to answer and discuss.2. Google form Quiz on environment/sustainability <p>Spend 5 minutes to evaluate student assimilation of the lesson contents</p>