

**Department of Microbiology**  
**University of Dhaka, Dhaka 1000, Bangladesh**  
**SDG linkage for the syllabus taught in Master of Science (MS)**

**MPG 501: Environmental Biotechnology**

Achievement towards SDG

SDG 11: Sustainable Cities and Communities

- Reduction of the adverse environmental impact of cities
- Universal access to safe, inclusive and accessible, green and public spaces

SDG 12: Responsible Consumption and Production

- Sustainable management and efficient use of natural resources
- Reduction of waste generation
- Access to relevant information and awareness for sustainable development
- Environmentally sound management of all chemicals and all wastes

SDG 13: Climate Action

- Improvement of education, awareness raising and human and institutional capacity on climate change, mitigation, adaptation, impact reduction and early warning

SDG 15: Life on Land

- Urgent and significant action to reduce degradation of natural habitats
- Prevention of the introduction and the reduction of the impact of invasive alien species of ecosystem

**MPG 502: Advanced Molecular Genetics**

Achievement towards SDG

SDG 3: Good Health and Well-being

- Reduction of one third premature mortality + non- communicable diseases
- Prevention and treatment of abuse of drugs and alcohol
- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution
- A stronger capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks

SDG 4: Quality Education

- Substantial increase the number of technically skilled youth and adults
- All learners should acquire the knowledge and skills needed for sustainable development

SDG 17: Partnerships for the Goals

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing
- Promotion of the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms

## **MPG 503: Immunopathology and Vaccine Development**

Achievement towards SDG

SDG 1: No poverty

- Implementation of nationally appropriate social protection system

SDG 3: Good Health and Well-being

- Reduction of the global maternal mortality ratio to less than 70 per 100,000 live births
- End of preventable deaths of newborns and children under 5 years of age
- End of the epidemics of AIDS, tuberculosis, malaria and NTDs and combat hepatitis, water borne diseases and other communicable diseases
- Aim to reduce neonatal mortality to 12 and under 5 mortality to 25 per 1,000 live births

SDG 9: Industry, Innovation and Infrastructure

- Enhanced scientific research, upgrade of the technological capabilities of industrial sector

SDG 17: Partnerships for the Goals

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing

## **MPG 504: Bioprocess Engineering and Technology**

Achievement towards SDG

SDG 4: Quality Education

- An equal access for all to affordable and quality tertiary education
- Substantial increase in the number of technically skilled youth and adults
- All learners should acquire the knowledge and skills needed for sustainable development
- Upgraded education facilities for inclusive and effective learning environments for all
- Increased supply of qualified teachers

SDG 9: Industry, Innovation and Infrastructure

- Development of quality, reliable, sustainable and resilient infrastructure
- Promotion of inclusive and sustainable industrialization

SDG 17: Partnership for the Goals

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing
- Enhanced international support for capacity building in developing countries to support national plans to implement all the Sustainable Development Goals

## **MPG 505: Enzyme and Protein Biotechnology**

Achievement towards SDG

SDG 3: Good Health and Well-being

- End of the epidemics of AIDS, tuberculosis, malaria and NTDs and combat hepatitis, water borne diseases and other communicable disease
- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution

- A stronger capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks

SDG 8: Decent Work and Economic Growth

- Higher levels of economic productivity through diversification, technological upgrading and innovation

SDG 9: Industry, Innovation and Infrastructure

- Enhanced scientific research, upgrade of the technological capabilities of industrial sector
- Enhanced financial, technological and technical support to least developed countries for development

SDG 11: Sustainable Cities and Communities

- Reduction of the number of deaths and the number of people affected by disease
- Reduction of the adverse environmental impact of cities

SDG 12: Responsible Consumption and Production

- Sustainable management and efficient use of natural resources

SDG 17: Partnerships for the Goals:

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing
- Promotion of the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms

**MPG 506: Advanced Bioinformatics**

Achievement towards SDG:

SDG 4: Quality Education

- An equal access for all to affordable and quality tertiary education
- Substantial increase in the number of technically skilled youth and adults
- All learners should acquire the knowledge and skills needed for sustainable development
- Upgraded education facilities for inclusive and effective learning environments for all
- Increased supply of qualified teachers

SDG 17: Partnership for the Goals:

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing
- Enhanced international support for capacity building in developing countries to support national plans to implement all the Sustainable Development Goals

**MPG 507: Epidemiology of Infectious Diseases**

Achievement towards SDG:

SDG 3: Good health and Well-being

- Reduction of the global maternal mortality ratio to less than 70 per 100,000 live births
- End of preventable deaths of newborns and children under 5 years of age
- End of the epidemics of AIDS, tuberculosis, malaria and NTDs and combat hepatitis, water borne diseases and other communicable disease
- Aim to reduce neonatal mortality to 12 and under 5 mortality to 25 per 1,000 live births

- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution
- A stronger capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks

#### SDG 4: Quality Education

- Access to quality early childhood development care and pre-primary education
- An equal access for all to affordable and quality technical, vocational and tertiary education

#### SDG 9: Industry, Innovation and Infrastructure

- Enhanced scientific research, upgrade of the technological capabilities of industrial sector

### **MPG 508: Microbial Food Safety Management**

Achievement towards SDG:

#### SDG 2: Zero Hunger

- A must access by all people to safe nutritious and sufficient food all year round
- A sustainable food production systems for increased productivity

#### SDG 3: Good Health and Well-being

- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution
- A stronger capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks

#### SDG 6: Clean Water and Sanitation

- Universal and equitable access to safe and affordable drinking water

#### SDG 17: Partnership for the Goals:

- TECHNOLOGY: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing

### **MPG 509: Bioenergy and Biofuel Technology**

Achievement towards SDG:

#### SDG 3: Good Health and Well-being

- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution

#### SDG 7: Affordable and Clean Energy

- Universal access to affordable, reliable and modern energy services

#### SDG 8: Decent Work and Economic Growth

- Higher levels of economic productivity through diversification, technological upgrading and innovation

#### SDG 13: Climate Action

- Improvement of education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

## **MPG 510: Molecular Virology and Oncology**

Achievement towards SDG:

SDG 3: Good Health and Well-being

- End of the epidemics of AIDS, tuberculosis, malaria and NTDs and combat hepatitis, water borne diseases and other communicable diseases
- Reduction of one third premature mortality + non-communicable diseases
- Substantial reduction of number of deaths and illness from hazardous chemicals and air, water and soil pollution

SDG 4: Quality Education

- An equal access for all to affordable and quality technical, vocational and tertiary education
- Substantial increase the number of technically skilled youth and adults
- Increased supply of qualified teachers

## **MPG 511: Extremophiles and Novel Biological Products**

Achievement towards SDG:

SDG 2: End Hunger

- A sustainable food production systems for increased productivity

SDG 3: Good Health and Well-being

- Achieving an universal health coverage and access to quality essential health care
- Substantial reduction of the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution

SDG 4: Quality Education

- All learners should acquire the knowledge and skills needed for sustainable development

SDG 6: Clean Water and Sanitation

- Improvement of water quality by reducing pollution

SDG 7: Affordable and Clean Energy

- Substantial increase in the share of renewable energy in the global energy mix; and
- Sustainable withdrawals and supply of freshwater to address water scarcity to reduce the number of people suffering from it

SDG 8: Decent Work and Economic Growth

- Higher levels of economic productivity through diversification, technological upgrading and innovation

SDG 9: Industry, Innovation and infrastructure

- Promotion of inclusive and sustainable industrialization
- Enhanced scientific research, upgrade of the technological capabilities of industrial sector

SDG 13: Climate Action

- Improvement of education, awareness raising and human and institutional capacity on climate change, mitigation, adaptation, impact reduction and early warning

SDG 14: Life below Water

- Prevention and significant reduction of marine pollution;
- Sustainable management and protection of marine and coastal ecosystem

### SDG 15: Life on Land

- Conservation, restoration, sustainable use of terrestrial and inland freshwater ecosystems;
- Combat desertification and restoration of degraded land and soil
- Integration of ecosystem and biodiversity values into national and local planning and development process

### SDG 17: Partnerships for the Goals

- Technology: Promotion of the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms

## **MPG 512: Pharmaceutical Biotechnology**

### Achievement towards SDG:

#### SDG 3: Good Health and Well-being

- Reduction of the global maternal mortality ratio to less than 70 per 100,000 live births
- End of preventable deaths of newborns and children under 5 years of age
- Aim to reduce neonatal mortality to 12 and under 5 mortality to 25 per 1,000 live births
- End of the epidemics of AIDS, tuberculosis, malaria and NTDs and combat hepatitis, water borne diseases and other communicable diseases

#### SDG 8: Decent Work and Economic Growth

- Sustained per capita economic growth with a 7% GDP growth per annum in least developed countries
- Equal pay for work of equal value for all
- Higher levels of economic productivity through diversification, technological upgrading and innovation
- Reduction of the proportion of un-employed youth

#### SDG 9: Industry, Innovation and Infrastructure

- Development of quality, reliable, sustainable and resilient infrastructure
- Promotion of inclusive and sustainable industrialization
- Enhanced scientific research, upgrade the technological capabilities of industrial sectors

#### SDG 11: Sustainable Cities and Communities

- Enhanced inclusive and sustainable urbanization
- Reduction of the number of deaths and the number of people affected by disease

#### SDG 17: Partnerships for the Goals

- Technology: Enhancement of international cooperation on and access to science, technology and innovation and knowledge sharing