



**Curriculum
for
Masters of Social Sciences (MSS)
Department of Population Sciences
University of Dhaka**

Contents

1	Introduction to the entity	3
2	Introduction to the program: Masters of Social Sciences (MSS)	4
3	Structure of the Course	5
3.1	MSS First Semester	5
3.1.1	POP 501: Demographic Data: Collection, Evaluation and Adjustment.....	5
3.1.2	POP 502: Population Health.....	7
3.1.3	POP 503: Population Nutrition and Food Security.....	10
3.1.4	POP 504: Planning for Population and Human Resource Development	13
3.1.5	POP 505: Health Systems in Bangladesh.....	15
3.1.6	POP 506: Multivariate Analysis.....	18
3.2	MSS Second Semester.....	20
3.2.1	POP 507: Perspective of Health and Illness	20
3.2.2	POP 508: Global Health.....	22
3.2.3	POP 509: Population Estimations and Projections	25
3.2.4	POP 510: Proposal Development.....	27
3.2.5	POP 511: Internship	29
3.2.6	POP 512: Comprehensive Examination.....	29
3.2.7	POP 549: Thesis.....	29
4	Student Assessment/Evaluation Policy	30

1 Introduction to the entity

The multidisciplinary approach to Population Sciences has gained increasing practical relevance in recent times. For Bangladesh, although many challenges remain, successive successes in several population related programs have brought international laurels and attention over the past few years. Recent developments and challenges in the population field have increased the need for professionals who can critically analyze population issues and steer various population related programs.

To address the need of the times, we are proud to lead the way by introducing this 21st century academic program with forward looking fields of concentration in areas such as demographic analysis; population studies; population and development; sexual and reproductive health and rights; population policy, program and management; food security and nutrition; gender issues; population ageing; and climate change adaptation and risk reduction strategies.

We are encouraged by the prospects which lie ahead. Students and professionals from fields as diverse as environment to medicine, engineering to sociology, business to women's studies, economics to geography, law to NGO management, both at home and abroad, have expressed keen interest in our program. We here at the Department are eager to live up to the expectations that have built up around us. In response to the diverse streams of students, we have put together a pool of faculty and adjunct faculty who have enriched our program with the breadth and depth of their knowledge and experience.

Our survey of population related organizations gives us reasons to believe that there are many opportunities for rewarding careers in these organizations for the right person. While we promise to deliver on an intellectually challenging academic program for our students, at the same time we are mindful that our training should open up stimulating career paths in population and development related disciplines. Candidates who wish to take on the intellectual challenge of our program, and who seek a career path that at the same time contributes to society, are strongly encouraged to apply.

2 Introduction to the program: Masters of Social Sciences (MSS)

Title: Masters of Social Sciences (MSS)

Duration of the Program: 1 Year

Admission Eligibility: As per the guideline of the University of Dhaka, currently a student must have to complete the BSS (Honors) program from the Department of Population Sciences to be eligible for this program.

Objectives of the program

The objective of the program is to train students with advanced theoretical and practical knowledge and skill in population related issues. This program inculcates students with the knowledge that are necessary for understanding population and its related phenomena with advanced statistical skill. The program also helps students to develop their capability to provide different population policies and programs in global and Bangladesh context. Apart from these, in the second semester of this program students get the opportunity to do internship in renowned NGOs and thesis based on their merit position as a partial fulfilment of the degree. Here, students can get the opportunity to apply their theoretical and practical knowledge in field level. In this program, students are supposed to conduct their research for thesis on core population related issues such as fertility, mortality and migration along with related public health, gender issues, aging, developmental and environmental issues.

Rules and regulations for studentship: According to rules and regulations of the University of Dhaka.

3 Structure of the Course

3.1 MSS First Semester

3.1.1 POP 501: Demographic Data: Collection, Evaluation and Adjustment

Credit Hours: There will be **Two** (02) credit hours for this course.

Introduction to the Course: This is an introductory course on population that focuses on some of the demographic techniques to collect, evaluate and adjust data.

Objectives: Objectives of the course are to:

- enable the students to achieve understanding the basic principles of population processes contributing to population change.
- introduce different demographic data collection method and hence the case of data collection in Bangladesh.
- acquainted students with evaluation and adjustment method of demographic data through some well-known demographic theories and measures.

Learning Outcomes: After completing the course, students are expected to learn about:

- different types of demographic data collection methods.
- current demographic data collections methods in Bangladesh
- various techniques of evaluating and adjusting data

Course Content:

1. **Introduction:** Demographic data, Methods of collecting demographic data, Sources of demographic data: Census Operations in Bangladesh, Sample surveys in Bangladesh, DHSs in Bangladesh, Vital Registration
2. **Errors in Demographic Data:** Types and sources of errors in demographic data.
3. **Evaluating Quality of Demographic Data:** Assessment of Coverage errors: Micro and Macro-analytic techniques, use of growth rate formula, Post Enumeration Check (PEC), Dual Record system.
4. **Evaluating Quality of Demographic Data:** Assessment of Content Error: General Assessment of age and sex data; Whipple Index, Mayers' Index, UN Age-Sex Accuracy Index.
5. **Evaluation of Summary Fertility Data from Censuses:** Assessment of parity data, The el-Badry correction, evaluation of data on recent fertility from censuses.
6. **Adequacy of Migration Statistics:** Adequacy of International Migration Statistics, Use of balancing equation, international comparison, direct checks; Adequacy of Internal Migration Statistics: Continuous population registers, census statistics relating to internal migration, tests of data on place of birth, tests of data on place of residence at a previous date, direct checks
7. **Adjustment of Demographic Data:** Graphical method, Carrier-Farrang ratio method, Quadratic interpolation, Osculatory interpolation, Moving average method.

Number of classes: There will be 30 classes for the course. Duration of each class will be 1 hour.

Instructional Strategies: Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and discussions. Individual reading will be given, and students will be presenting their summary. In addition to this, there will be group presentations on a specific topic, and groups will

be formed.

References:

1. Moultrie TA, RE Dorrington, AG Hill, K Hill, IM Timæus and B Zaba (eds) (2013). Tools for Demographic Estimation. Paris: International Union for the Scientific Study of Population. demographicestimation.iussp.org
2. UN Manual II (1955). Population Studies, No. 23: Methods of Appraisal of Quality of Basic Data for Population Estimates, Department of Economic and Social Affairs, Population Branch, NY
3. Islam, MN (2015). An Introduction to Demographic Techniques. Mullick & Bothers, Dhaka
4. Some other articles and relevant readings will also be provided.

3.1.2 POP 502: Population Health

Credit Hours: There will be **Two** (02) credit hours for this course.

Introduction to the course: This course brings together a diverse range of topics to provide students a comprehensive insight into the social, economic, medical and demographic factors that shape health of the population from prevention and promotion, to health protection. Students will be engaged in developing the academic and practical knowledge needed to determine the systematic variations in the health of individuals and population, as well as the skills and experience to apply this knowledge to practical solutions to improve health, wellbeing, and the delivery of health services.

Objectives: Objectives of the course are to:

- introduce students with scopes of population health and its difference with the ones of public health.
- provide theoretical education on the fundamentals of component of population health.
- provide the sense of importance of summary measures of population health with its advantage over traditional measures.
- provide in-depth insights to the understanding of health disparities and their probable determinants and also the scopes of non-health policies to keep impact on the health outcome are also included in the aims of this course.

Learning outcomes: After the completion of this, the students will able to:

- differentiate population health approach from public health approach;
- identify the components of population health;
- determine the importance of summary measures of population health over the traditional measures of population health;
- calculate some of the key summary measures of population health, such as DALY, QALY, HLE, etc.;
- understand the health disparities through identifying the determinants of population health; and assess the impact of non-health policies on the health status of the population.

Course Content:

- 1. Introduction and Background:** Traditional View of the Health. Limitations of the Traditional View. Reflections on Key Concepts: Population Health and Public Health. Population and Public Health. Difference between Population and Public Health. Benefits of Population Health Approach. History of the Emergence of Population Health. Foundations of Population Health. Models for Population Health
- 2. Components of Population Health:** Population Health Components: Health Outcome; Health Determinants; Policies. Pillars of Population Health: Chronic Care Management; Quality and Safety; Public Health; Health Policy. Core Principals of Population Health
- 3. Measuring Population Health:** Traditional Measures of Population Health and Its Limitation; Summary Measures of Population Health
- 4. Determinants of Population Health:** Policy; Social factors (social determinants of health); Health services; Individual behavior; Biology and genetics. The ecological framework
- 5. Non-Health Policies:** How Non-Health Policies Can Affect Population Health

Number of classes: There will be 30 classes for the course. Duration of each class will be 1 hour.

Instructional strategies: The course is structured into topics as listed in the course outline. Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and discussions. Individual reading will be given and student will be presenting his/her summary. In addition to this there will be group presentation on a specific topic and group will be formed. Beginning of the semester all reading materials will be provided to students in a folder.

References:

1. Chomik, T. A. 2001. The Population Health Template: Key Elements and Actions That Define A Population Health Approach. Strategic Policy Directorate, Population and Public Health Branch, Health Canada
2. Cohen, D., Huynh, T., Sebold, A., Harvey, J., Neudorf, C., & Brown, A. 2014. The population health approach: A qualitative study of conceptual and Operational definitions for leaders in Canadian healthcare. SAGE Open Medicine (DOI: 10.1177/2050312114522618)
3. Community Health and Social Services Network Population Health Initiative A Community Guide to The Population Health Approach.2003.
4. Field, M.J. and Gold, M. R. 1998. Summarizing Population Health: Directions for the Development and Application of Population Metrics. Washington, D.C.: National Academy Press
5. Graham, H. (2009). Health inequalities, social determinants and public health policy. Policy & Politics. <https://doi.org/10.1332/030557309x445618>
6. Kaplan, R. M., Spittel, M. L. & David, D. H. 2015. Population Health: Behavioral and Social Science Insights. AHRQ Publication No. 15-0002. Rockville, MD: Agency for Healthcare Research and Quality and Office of Behavioral and Social Sciences Research, National Institutes of Health.
7. Kindig, D. & Strodart, G. 2003. What is Population Health? American Journal of Public Health. Vol. 93, No. 3
8. Kindig, D. A. 2007. Understanding Population Health Terminology. The Milbank Quarterly, Vol. 85, No. 1
9. Kunitz, S. J. 2007. The Health of Populations: General Theories and Particular Realities. Oxford: Oxford University Press
10. Lalonde, M. 1974. A New Perspective on the Health of Canadians: A Working Document.
11. Marmot, M. & Wilkinson, R. G. 2006. Social Determinants of Health. Oxford: Oxford University Press
12. Murray, C. J. L., Salomon, J. A. & Mathers, C. 2000. A Critical Examination of Summary Measures of Population Health. Bulletin of the World Health Organization, Vol. 78, No. 8
13. Nash, D. B., Reifsnnyder, J., Fabius, R. A., Pracilio, V. P. 2011. Population Health: Creating A Culture of Wellness. Burlington: Jones and Burtlett Learning.
14. Nash, D. V. B. 2012. The Population Health Mandate: A Broader Approach to Care Delivery. San Diego: The Governance Institute
15. Osypuk, T. L., Joshi, P., Geronimo, K., & Acevedo-Garcia, D. (2014). Do Social and Economic Policies Influence Health? A Review. Current Epidemiology Reports. <https://doi.org/10.1007/s40471-014-0013-5>
16. Reigelman, R. & Kirkwood, B. 2015. Public Health 101: Healthy People Healthy Populations. Burlington: Jones and Burtlett Learning.
17. Strategies for Population Health Investing in the Health of Canadians. 1994.
18. Taking Action on Population Health: A Position Paper for Health Promotion and Programs Branch Staff. Health Canada
19. WHO. 2008. Closing the gap in a generation: Health equity through action on the social

determinants of health. Geneva: WHO

20. Wilkinson, R. G. Marmot, M. 2003. The Solid Facts (Social Determinants of Health). Geneva: WHO

21. Young, T. K. 1998. Population Health: Concepts and Methods. Oxford: Oxford University Press

3.1.3 POP 503: Population Nutrition and Food Security

Credit Hours: There will be **Four (04)** credit hours for this course.

Introduction to the Course: This course is an overview of the discipline of population, nutrition and food security. This course introduces students to the complex and multidimensional issues of nutrition and food security from population perspective. In this course students will engage in critical thinking about population, nutrition and food security issues and gain exposure to different aspects.

Objectives: Objective of the course are to:

- provide the basic concept of population nutrition and food security.
- enable students with knowledge regarding population, malnutrition and food security issues in global and Bangladesh context.
- help students to develop their capability to understand the ways and policy issues in which population nutrition and food security issues are interdependent.

Learning outcomes: A student who successfully completes the course will have the ability to

- critically explain the linkages between population, nutrition and food security issues in global and Bangladesh context
- analyze contemporary social issues and policies.
- demonstrate an understanding of the perspectives, theories, methods, or core concepts of the population nutrition and food security.

Course Content:

- 1. Introduction to Nutrition and Food Science:** Definitions of nutrition, food safety, food security, Malnutrition and chronic malnutrition, Concepts of food-Nutrition and nutrients, macronutrients-Carbohydrates, Fat and Proteins; Macronutrients-Vitamins and Minerals, their chemical structures, basic physiological functions, name and deficiency diseases, Body requirement and RDA. Aspects of Food science, Concepts of food, food sources, Nutritive values of common foodstuffs, functions of foods, loss of nutrients in different condition, food beliefs and misconception. Nutritional status, role of nutrition in human development, forms and types of malnutrition, importance of nutrition, nutritional assessment. Food composition and classification, food production, food system and food security and food contaminants and toxicants.
- 2. Human Nutrition and Food Security:** Major Nutrients Diseases (Protein-energy malnutrition, Vitamin A deficiency disorders, Iodine deficiency disorder, Nutritional Anemia, Obesity- cause, types, complications and management), Supplementary feeding: Concepts, advantages, disadvantages, cost and benefits of feeding programs; Nutritional impact of feeding programs; measures to improve the nutritional impact of feeding programs, Household Food Security: Definitions, concepts and importance of household food and nutrition security; Situation of Household food security in Bangladesh; Groups at risk of food and nutrition security;
- 3. Maternal, Child and Elderly Nutrition:** Adolescents nutrition and growth, Care during pregnancy and lactation, Maternal nutrition and pregnancy outcome, Maternal protein-energy malnutrition, micro-nutrient, malnutrition and its effect on infant growth, development and health, Infant and Young Child Nutrition (IYCN), Elderly nutrition

4. **Climate change and Food Security:** Climate Change and Food Production; Climate Change and Food Projection, Understanding the current food production system in the context of climate change Bangladesh, Investing in an alternative future food system; Essential actions for food security and climate stabilization.
5. **Nutritional Problems:** Protein-energy malnutrition- Protein and energy requirements of different age groups; energy intake and expenditure, gender variation in the intake, adaptation theory protein-energy interaction; micro-nutrient, linear growth retardation-causes, chronic energy deficiency (CED) and its consequences, Micronutrients and health development- Micronutrient malnutrition (hidden hunger), health and social effects of micronutrient deficiencies. Long term food security problems of Bangladesh and developing countries. Major nutritional problems in Bangladesh.
6. **Assessment of Nutritional Status and Food Security:** Direct methods (Dietary assessment, Clinical Assessment and Anthropometric assessment); Indirect methods (Dietary intake, Socio-economic and ecological assessment); Nutritional Survey and surveillance, Concepts, measurements and interpretation of food security indicators, Food Security Assessment Indicators, Global food indicators on food security
7. **Nutrition in Emergencies:** Definition of nutritional emergency; its causes and implication; Management and practice of different type of emergency feeding program (general food distribution, mass feeding, therapeutic feeding, and special foods during emergency). Macro- and micro nutrient deficiencies in emergency. Assessment and surveillance of nutritional status in emergency, Monitoring and evaluation of nutritional emergencies; responsibilities and mandate of UN bodies and different GOs and NGOs in emergency situation;
8. **Population Food Security and Nutrition Nexus:** Conditions of public health in Bangladesh; nutritional referrals and utilization of public health facilities; measures to improve health environment and utilization of public health facilities, Low birth weight and its consequences; nutrition and national development: development effects in labor productivity, education, population growth and health expenditure, Groups at risk of food and nutrition security; identification of food insecure households, Nutrition Communication: Strategies of nutrition communication, identification of target groups and their needs, tools, methods and media of nutrition communication and their limitations, formulation and testing of nutritional messages and communication materials and development of curriculum
9. **Program Policy and Planning:** Addressing Malnutrition: Need for nutrition planning; sectoral approach to nutrition planning, Role of national organizations in nutrition education; role of voluntary and international organizations in nutrition education; limitations of nutrition education programs, Food, Nutrition Policy and Act in Bangladesh; components of food and nutrition policies, Agricultural policies and programs affecting nutrition Food Safety Laws (2013), Approaches to combat malnutrition: Supplementation, Food fortification, food based approaches: concepts, potentials, advantages, costs, government and private sector involvement; monitoring and evaluation; Genetically Modified Crops , Strategies and Programs for Food Security and Nutrition; measures to improve household food and nutrition security , Government program for Food and Nutrition Security interventions and Interventions; Selected agricultural interventions to improve food security

Number of classes: There will be 60 classes for the course. Duration of each class will be 1 hour.

Instructions strategies: The course is structured into topics as listed in the course outline. Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and

discussions. Individual reading will be given and student will be presenting his/her summary. In addition to this there will be group presentation on a specific topic and group will be formed.

References:

1. Eastwood, M. (2003). *Principles of human nutrition* (2th ed.). Blackwell Science Ltd.
2. Barasi, M., & Morris, M. (2003). *Human Nutrition* (2th ed.). Hodder Arnold.
3. Gibney, M.J., Lanham-New, S.A., Cassidy, A. & Vorster, H.H. (2009). *Introduction to Human Nutrition* (2th ed.). Wiley-Blackwel.
4. Temple, N. J., Wilson, T., & Jacobs Jr, D. R. (2006). *Nutritional health: Strategies for disease prevention* (2th ed.). Humana Press.
5. Some other articles and relevant readings will also be provided.

3.1.4 POP 504: Planning for Population and Human Resource Development

Credit Hours: There will be **Four (04)** credit hours for this course.

Introduction to the course: This course is an overview of the discipline of Planning for Population and Human Resource Development introduces students to the complex and dynamic issues. Students will engage in critical thinking about Planning for Population and Human Resource Development issues and gain exposure to different types of basic concepts and issues. Additionally, students will learn the Planning for Population and Human Resource Development and gain the ability to distinguish between facts, values, and opinions.

Objectives: Following the completion of this course, students will be able to:

- demonstrate understanding of fundamental Planning for Population and Human Resource Development theories and concepts;
- discover and develop their own sociological imagination and apply it to Planning for Population and Human Resource Development;
- understand the ways in which social institutions are interdependent;
- Explore how social factors contribute to Planning for Population and Human Resource development and efforts to create social change;

Learning outcomes: Students will be able to:

- analyze contemporary Planning for Population and Human Resource Development issues.
- demonstrate an understanding of the perspectives, theories, methods, or core concepts of the Planning for Population and Human Resource Development.
- identify how culture and identity impact individual and group experience in society.

Course Content:

- 1. Introduction to Population Planning and Human Resource Development (HRD):** Concepts and Definitions; Components of Population Planning and Human Resource Development; Demographic Analysis in the Planning Process; Demographic Dividend and HRD
- 2. The Theory of Human Resource Development:** The theory integration proposition; Economic Theory of HRD; Psychological Theory of HRD; System Theory Component of HRD
- 3. Human Capital Formation and Human Development:** Human Development Paradigm, UNDP Human Development Index (HDI); Use of HDI for Policy Analysis; Critiques of HDI, Inequality-adjusted HDI (IHDI); Human Poverty Index (HPI); Gender related Development Index (GDI); Gender Inequality Index (GII); Global Multidimensional Poverty Index (MPI)
- 4. Labor Force Analysis for Population Planning and Human Resource Development** Determinants of labor supply and demographic factors determining labor force growth; Labor underutilization, unemployment rate, under employment rate, Labor force participation rates; the demographic dividend, Strategies of human resource development of reaping benefits of demographic dividend
- 5. International Labor Migration:** Levels and trends of international migration, remittances, brain drain versus brain gain; future prospects and challenges of international migration for Bangladesh
- 6. Health and Nutrition:** Basic indicators of health and nutrition status; health and economic development; Determinants of health status; Health and nutrition issues in human resource development; health and nutrition policies in human resource development in Bangladesh

7. **Education and Human Resource Development:** Education and development (major educational goals, quantity versus quality approaches in education; prospects and challenges of educational expansion); education, inequality and poverty; Human resource planning
8. **Population Planning for Sustainable Development:** Definition, components, Sustainable Development Goals (SDGs), Challenges and prospects of ensuring sustainable development in Bangladesh

Number of classes: There will be 60 classes for the course. Duration of each class will be 1 hour.

Instructions strategies: The course is structured into topics as listed in the course outline. Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and discussions. Individual reading will be given and student will be presenting he/her summary. In addition to this there will be group presentation on a specific topic and group will be formed. Beginning of the semester all reading materials will be provided to students in a folder.

References:

1. Battu, Naga Raju (2013). Human Resources Development. A P H Publishing Corporation
2. Vohra, Snell and Bohlander (2010). Human Resource Management: A South Asian Perspective. Chandramohan, A. (2007). Human Resource Management. A P H Publishing Corporation
3. Beardwell, I., Holden, L. and Claydon, T., (2004), Human Resource Management a contemporary Approach, 4th edition, Prentice Hall.
4. Bhatia, B.S., Verma, H.L. and Garg, M.C., (2002), Studies in Human Resource Development, Deep & Deep Publications.
5. Decenzo, D.A. and Robbins, S.P., (1988), Personnel/Human Resource Management, 3rd edition, Prentice Hall College Div.
6. Desai, A.S., (1979), Human Capital Formation and its Utilization, Sterling Publishers Pvt. Ltd., New Delhi.
7. Dessler, G. and Varkkey, B., (2009), Human Resource Management, 11th edition, Dorling Kindersley (India) Pvt.
8. Fukuda-Parr, S., Kumar, A.K.S. and Sen, A., (2005), Readings in Human Resource Development: Concepts, Measures and Policies for a Development Paradigm, Oxford University Press.
9. Gould, W.T.S., (2009), Population and Development, Routledge.
10. Holton, E.F. III, and Torraco, R.J., (2002), Human Resource Development Review, Sage Publications.
11. Jhingan, K.L., (2011), The Economics of Development and Planning, 40th edition, Vrinda Publications.
12. Yadav, K.P., (2006), Manpower Planning and Economics Development, Sarup & Sons.

3.1.5 POP 505: Health Systems in Bangladesh

Credit Hour: There will be **Four** (04) credit hours for this course.

Introduction to the Course: This course provides an introduction about health care from systems perspectives. The course introduces students to the main elements or building blocks of a health system based on World Health organization's guidance. The course is designed to give conceptual foundation of health system operating in different contexts. The course examines the status, salient features of health care in Bangladesh from systems perspectives and their implications for health of the population of the country. The course focuses on application and integration of concepts and evidence to understand and address current issues of health care system in Bangladesh.

Objectives: The course intends to educate students, the health care in Bangladesh from systems perspectives. It intends to impart students, aims and organization of the health system; different types of organizations, services, and personnel and their relationships across the healthcare delivery system including accreditation, licensure etc.; critical roles of every part of health system in health care; different forms of health systems that may take; roles of different levels of health system and the special place of primary health care within health system; health financing system and its implications; examine policies, regulations, and standards that affect healthcare operations. It aims to enable students to examine and critically analyze health care in Bangladesh through application of system concepts and frameworks.

Learning Outcomes: Upon successful completion of this course, students will be able to:

- identify major elements of a health care system, its core objectives and functions;
- understand the core building blocks of health care systems and modes of operation;
- know different approaches to health system design and their implications for access, quality and equity;
- comprehend the functioning of health systems;
- understand the organizational structure of health care facilities
- understand the role of health care professionals in various settings
- understand health system financing forms and their implications on health equity;
- comprehend the variant views around boundaries of a health system, and major approaches related to the understanding of health systems;
- assess health care system's strengths and weaknesses,
- assess the role of different health care systems to promoting good health, access to services and equity;
- compare health systems from low-income, middle-income, and high-income countries around the world.
- apply a health system approach to major health challenges in a range of different contexts;
- know current health system issues in Bangladesh
- critically analyze key issues and trends in Bangladesh's health care system and health policy
- critically appraise and apply key concepts and approaches to health systems evaluation and the role of policy issues and global influences on health systems

Course Content:

1. **Concepts and Fundamentals of Health System:** This section will introduce the students with the basic concepts of health system i.e., application of system theory in understanding health system; health system building blocks i.e., health information system, health system financing, financing

functions and dominant modes of financing, health workforce; health service provision, health system functions i.e, generating resources, service provision; health system goals; health system boundary; health system strengthening and frameworks for health system strengthening. This section will impart knowledge on health systems from low-income, middle-income, and high-income countries around the world.

2. **Theoretical Frameworks and Approaches to Health System:** This section will introduce dominant theoretical approaches and frameworks for health system strengthening, analysis and performance measurements to the students.
3. **Universal Health Care:** In this section goals and objectives of Universal Health Care will be introduced. It will explain why Universal Health Care is needed; health system features for Universal Health Care. It will expose student to the current arguments over Universal Health Coverage. It will focus on the issues in Universal Health Coverage and Progress towards Universal Health Coverage.
4. **Health System in Bangladesh:** This section will focus on health system in Bangladesh from the perspective of health system building blocks and health system functions. The section will explain the key features of health system in Bangladesh; administrative structure for public health service provision and its funding in Bangladesh; key elements of the health system as related to costs, coverage, access, and quality of health care in Bangladesh; human resource capacity development and health workforce in Bangladesh, health system financing and health system governance in Bangladesh; specific public health and health service delivery problems in Bangladesh; health systems policy development; policy and programmatic options for addressing specific public health and health service delivery problems in Bangladesh; Health System Challenges for Bangladesh; Future prospect for Universal Health Coverage.
5. **Health System in Bangladesh: Health Disparities:** This section will develop students' understanding of health disparities across social, economic and cultural groups as well as strategies to reduce those disparities in the context of health system in Bangladesh. It will focus on how the marginalization of populations based on class, gender, religion etc. affects health behavior and health status and how health system policy approaches can contribute towards a more equitable distribution of social, economic, and political resources for achieving health equity

Number of Classes: There will be 60 classes for the course. Duration of each class will be 1 hour.

Instructional Strategies: Lectures, individual and group activities i.e., papers and presentations will be followed for teaching and learning. Focus of group activities will be on practical case studies to illustrate key policy issues.

References:

1. WHO. 2000. Health Systems: Improving Performance. WHO Geneva.
2. WHO. 2009. Systems Thinking for Health System Strengthening. WHO. Geneva.
3. WHO. 2010. Health System Financing: the Path to Universal Coverage. WHO. Geneva.
4. WHO. 2010. A Conceptual Framework for Action on the Social Determinants of Health: A Discussion Paper Series. WHO, Geneva.
5. WHO 2013. Arguing for Universal Health Coverage.
6. Bangladesh Health Watch. 2008. The State of Health in Bangladesh. 2007. Health Workforce in Bangladesh: Who Constitutes the Health Care System? BRAC, Mohakhali, Dhaka.
7. Bangladesh Health Watch Report 2009. How Healthy is Health Sector Governance? 2010. UPL, Mahakhali, Dhaka.

8. Bangladesh Health Watch Report. 2011. Moving Towards Universal Health Coverage. 2012. BRAC, Mohakhali, Dhaka.
9. Tehmina Ghafur, 2017. Policy discourse and the paradigm shift in Reproductive Health in Bangladesh, Cambridge Scholars Publishing, NE6 2PA, UK.
10. Transparency International Bangladesh. 2014. Governance Challenges in the Health Sector and the Way Outs. Transparency International, Banani, Dhaka.
11. Some other articles and relevant readings will also be provided.

3.1.6 POP 506: Multivariate Analysis

Credit hours: There will be **Four (04)** credit hours for this course.

Introduction to the course: This course is an overview of the discipline of Multivariate Analysis of Statistics and introduces students to the advanced and sophisticated knowledge of different multivariate techniques of statistical analysis. Students will be able to understand the advanced knowledge of multivariate statistical analysis and also will be able to apply this knowledge to the different population related issues and research. Students will also introduce with statistical software STATA/SPSS/R/JASP/JMP to handle quantitative data for performing different multivariate techniques of statistical analysis.

Objectives: Following the completion of this course, students will be able to:

- overview the multivariate techniques of statistical analysis;
- comprehend about multivariate data and applications of multivariate techniques;
- comprehend in displaying multivariate data in different ways;
- compare and contrast the bivariate and multivariate distributions with properties;
- understand the inference of mean vectors;
- understand the matrix operation;
- understand bivariate, multinomial, multivariate regression models;
- realize the uses of principal component and factors analysis;
- distinguish between ANOVA and MANOVA;
- overview the concept of structural equation modeling;
- operate statistical software Excel/STATA/SPSS/R/JASP/JMP for conducting multivariate analysis;

Learning Outcomes: Students will be able to:

- understand the importance and use of multivariate analysis;
- use the knowledge of multivariate statistical analysis in their practical life;
- operate statistical software STATA/SPSS/R/JASP/SAS JMP/Excel for analyzing and presenting data

Course Content:

1. **Introduction:** Ideas of multivariate data, applications of multivariate techniques
2. **Multivariate Distributions:** Multinomial distributions with properties, Multivariate normal distribution with properties
3. **Inference about a Mean Vector:** Introduction, Test of a mean vector of normal population; Comparisons of Several Multivariate Means: paired comparison, comparing mean for two populations, several means comparison.
4. **Multivariate Regression models:** Multivariate Linear regression models, Multivariate logistic regression models
5. **Multivariate Analysis of Variance:** Introduction, One-way MANOVA, Two Way MANOVA
6. **Principal Components:** Introduction, Population principal components, summarizing sample variation by principal components
7. **Factor Analysis:** Introduction, the orthogonal factor model, methods of estimation, factor rotation, factor scores.
8. **Structural Equation Modeling:** Introduction, fundamental equation for SEM, models identification, estimation, assessing the model fit, model modification.

Number of classes: There will be 60 classes for the course. Duration of each class will be 1 hours.

Instructional strategies: The course is structured into topics as listed in the course outline. Learning activities of the course will consist of class lectures with Power Point presentations, reading, and discussions. Individual reading will be given and student will be presenting his/her summary. In addition to this there will be group presentation on a specific topic and group will be formed. Apart from theoretical classes around fifty percent lab classes will be held. At the beginning of the semester all reading materials will be provided to students in a folder.

References:

1. Bray, J. H., & Maxwell, S. E. (1985). *Multivariate analysis of variance* (No. 54). Sage.
2. Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. 2nd edition. routledge.
3. Byrne, B. M. (2013). *Structural equation modeling with Mplus: Basic concepts, applications, and programming*. routledge.
4. Duncan, Otis, Dudley. (1975). *Introduction to Structural Equation Models*-Elsevier Inc, Academic Press.
5. Finch, W. H., & French, B. F. (2015). *Latent variable modeling with R*. Routledge.
6. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). Upper Saddle River, NJ: Pearson Prentice Hall.
7. Hosmer DW, Lemeshow S. (1989). *Applied logistic regression*. Wiley & Sons, New York.
8. Johnson, R. A., & Wichern, D. W. (1992). *Applied multivariate statistical analysis* (Vol. 4). Englewood Cliffs, NJ: Prentice hall.
9. Kline, Rex, B. (2015). *Principles and Practice of Structural Equation Modeling*-The Guilford Press.
10. Manly, B. F. (2004). *Multivariate statistical methods: a primer*. CRC Press.
11. Pallant, Julie (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS*. Routledge.
12. Peter Vik (2013). *Regression, ANOVA, and the general linear model: A statistics primer*. SAGE Publications.
13. Schumacker, R. E. (2015). *Using R with multivariate statistics*. Sage Publications.
14. StataCorp. (2019). *Stata: Release 16. Statistical Software*. College Station, TX: StataCorp LLC.
15. Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics*. International edition. Pearson 2012.
16. Some other articles and relevant readings will also be provided.

3.2 MSS Second Semester

3.2.1 POP 507: Perspectives of Health and Illness

Credit Hours: There will be **Four** (04) credit hours for this course.

Introduction to the course: This course will introduce health and illness issues in the context of the broader social structure. 'Health and illness is essentially a social product' would be reverberated throughout the course.

Objectives:

The objective of the course is to:

- make students familiar with the intricate multidimensional relationship between health and illness of the population and the different aspects of the broader social context.

Learning Outcomes: After successfully completing the course, student would able to:

- understand the social aspects of health and illness
- correlate different socio-politico-economic issues with health and illness of a population
- explore the state of health and illness of a population in a critical way

Course Content:

1. **Introduction:** Origin and Development; Definition; Nature and Scope; Social Sciences, Natural Sciences and Health; Methodological Issues.
2. **Basic Issues:** Health and Illness; Diseases; Epidemiology; Medicalization
3. **Theoretical Perspectives:** Basic Theoretical Perspectives in Social Sciences; Interpretation of Health and Illness Issues
4. **Contemporary Issues:** Western Biomedical Model; The Body; Medicine History; Postmodernity; Neoliberalism
5. **Health, Gender and Feminism:** Basic Issues; Women Patients; Patriarchal Science and Medicine; Men, Gender and Health
6. **Health, Race and Ethnicity:** Basic Issues, Aboriginality, Race and Disease; Ethnicity; Genetic Issues
7. **Health Care and Social System:** The Physician-Patient Relationship; Health Professions; Health and Illness Management

Number of classes: There will be 60 classes for the course. Duration of each class will be 1 hour.

Instructional strategies: Instruction strategies will follow class lectures through audio-visual aids, assignments, presentations, group work and class discussion.

References:

1. Kevin White (2002) *An Introduction to the Sociology of Health and Illness*. London: SAGE Publications Ltd.
2. Minako K. Maykovich (1980) *Medical Sociology*. Alfred Publishing CO., Inc.

3. Michael Marmot and Richard G. Wilkinson(ed) (1999) *Social Determinants of Health*. Oxford University Press.
 4. Steve Taylor and David Field (ed) (2003) *Sociology of Health and Health Care* (4th Edition) Blackwell Publishing.
 5. John Germov (ed) (1998) *Second Opinion: An Introduction to Health Sociology* Oxford University Press
 6. Michael Bury and Jonathan Gabe (2004) *The Sociology of Health and Illness*. Routledge
- Some other articles and relevant readings will also be provided.

3.2.2 POP 508: Global Health

Credit Hours: There will be **Two** (02) credit hours for this course.

Introduction to the course: This course will provide an overview of the most important health challenges facing the world today. Graduate students will gain insight into how challenges have changed over time. Also the students will seek the answer- 'why are some people in some countries so much healthier than others?' This course will explore the factors that explain the unequal distribution of health and disease in the world and will discuss the likely determinants of such changes and examine future scenarios.

Objectives: Following the completion of this course, students will be able to:

- describe and explain the variations in health in and between countries and over time and urgency to priorities the courses of actions in this regard.
- explore the variations in health between and within countries
- between and within countries
- highlight the successful international strategies and programs promoting global health
- map and explore the global health governance structures and the role of the key actors

Learning outcomes: From this course it is expected that the students will be able to

- Define and discuss key terms, functions, and core principles of global health
- introduce key concepts and frameworks used in examining global health issues
- explore issues and controversies in global health in an interdisciplinary manner
- introduce the key actors in the global health system and to understand the structure and governance of institutions addressing global health challenges
- learn to articulate the policy relevance of complex global health issues
- Discuss how the strong links between health, economic and social development affect the health of populations globally
- Identify major global health challenges and key features of the current global health system
- Describe the necessary functions of an effective global health system

Course content:

1. **Introduction to Global Health:** Defining and Measuring Global Health; Principles and Goals of Global Health; Health Determinants, Measurements, and Trends; International Cooperation in Global Health: A Historical Overview; Principles and Goals of Global health, Global Burden of Diseases, Unequal Distribution of Health in the World
2. **Health Systems and Global Health Governance:** Frame work for Health Systems; NCDs and Health Care Systems; Financing Universal Health Coverage; Health System and Financing in a Global Perspective; Global Health Governance; Framework Convention on Tobacco Control, The Role of International Actors in the Delivery of Health Services, Health Service Delivery- Demand Side Issues; Health Service Delivery- Supply Side Issues; Health System in Low and Middle Income Countries; the Role of NGOs in Global Health
3. **Priorities in Global Health Policy and Challenges of Global Health Importance:** Unfinished agenda—Maternal and Child Health and Rights Globally; Unfinished Agenda—Global Health Impact of HIV/AIDS and Tuberculosis; Undernutrition and Obesity; Violence and Injuries; Chronic Diseases and Risk Factors; Emerging Infectious Diseases; Urban Health in Developing Countries, Migration and Health: Climate Change, Refugees and Internally and Internationally Displaced/ Humanitarian Emergencies/ Healthcare in Emergencies

4. **Ethical Issues in Global Health Research and Interventions:** Ethics and Human Rights; Ethical and Human Rights Concern in Global Health Research and Interventions

Number of classes: There will be 30 classes of the course. Duration of each class will be 1 hour.

Instructions strategies: The course is structured into topics as listed in the course outline. Lecture and discussions, selected readings, getting examples on various case studies including videos are the instruction strategies. Learning activities of the course will consist of class lectures with PowerPoint presentations, suggested reading, and discussions. Individual/group readings will be provided. There will be group presentation on a specific topic and group will be formed following numerical cluster. Beginning of the semester all reading materials will be provided to students.

References:

1. Skolnik, Richard (2015). *Global Health 101, Second Edition*. Jones & Bartlett Learning.
2. Levine, Ruth (2007). *Case Studies in Global Health*. Jones and Bartlett Publishers.
3. Birn, Anne-Emanuelle, Yogan Pillay, and Timothy Holtz (2009). *Textbook of International Health: Global Health in a Dynamic World*. Third Edition. Oxford: Oxford University Press, 2009
4. Lindstrand, A. et al. (2006). *Global Health: An Introductory Textbook*, Studentlitteratur: Lund, 2006.
5. Koplan, J.P. et al. (2009). Towards a common definition of global health. *Lancet*. 2009 June 6; 373
6. Beaglehole, B. Bonita, R. (2010). What is global health? *Global Health Action*; 2010:3
7. Szlezak NA, Bloom BR, Jamison DT, Keusch GT, Michaud CM, Moon S & Clark WC. (2010). The Global Health System: Actors, Norms, and Expectations in Transition. *PLoS Med*. 7(1), e1000183.
8. Gostin, Lawrence O.; Mok, Emily A. (2010). "Innovative Solutions to Closing the Health Gap between Rich and Poor: A Special Symposium on Global Health Governance." *Journal of Law, Medicine & Ethics*. Fall. 38(3): 451-458.
9. Moon, S., Szlezak, N. A., Michaud, C. M., Jamison, D. T., Keusch, G. T., Clark, W. C., & Bloom, B. R. (2010). The Global Health System: Lessons for a Stronger Institutional Framework. *PLoS Medicine*, 7(1), e1000193.
10. The Lancet Commission on Investing in Health (2013). Global health 2035: A world converging within a generation. *The Lancet* 382(9908): 1898-1955.
11. Levine, Ruth (2007). *Case Studies in Global Health: Millions Saved*, Jones & Bartlett Learning, MA.
12. Garrett L (2007). The Challenges of Global Health. *Foreign Affairs*. 86(1): 15-38.
13. Marmot M, et al. (2008) Closing the gap in a generation: Health equity through action on the social determinants of health. Final report of the WHO Commission on the Social Determinants of Health.
14. Alam, N., Merry, L., Mainul Islam, M. and Cortijo, C. (2015) International Health Professional Migration and Brain Waste: A Situation of Double-Jeopardy. *Open Journal of Preventive Medicine*, 5, 128-131.
15. Islam MM, Islam MK, Hasan MS, Hossain MB (2017) Adolescent motherhood in Bangladesh: Trends and determinants. *PLoS ONE* 12(11): e0188294.

16. Mohammad Mainul Islam and MD. Yeasir Yunus (2020). Rohingya refugees at high risk of COVID-19 in Bangladesh, *The Lancet Global Health* (Impact Factor: 15.873), Volume 8, ISSUE 8, e993-e994, August 01, 2020
17. Mohammad Mainul Islam and Tasmiah Nuzhath (2018). Health risks of Rohingya refugee population in Bangladesh: A call for global attention, *Journal of Global Health*, 2018, Vol.8: 2 , DOI: 10.7189/jogh.08.020309
18. Mohammad Mainul Islam, Sayema Haque Bidisha, and Israt Jahan (2016). Effects of remittances on health expenditure and types of treatment of international migrants' households in Bangladesh, *Summaries of Conference Papers: Global Conference on Prosperity, Equality and Sustainability: Perspectives and Policies for a Better World*, New Delhi: Institute of Human Development (ISBN: 978-81-88315-56-7)
19. Mohammad Mainul Islam, Md. Zakiul Alam, Sayema Haque Bidisha and S M Abdullah (2019). Caesarean Section Delivery in Bangladesh, *Journal of Bangladesh Studies* (JBS), Vol.21, No. 2, 2019, Bangladesh Development Initiative, USA.
20. Winkler, Daniel and Richard Cash (2009). Ethical Issues (Chapter 12), *Global Public Health: a new era* (Second Edition), Oxford.
21. Rubenson, B. (2002). *Health and human rights*, Sida: Stockholm. www.sida.se
22. Tehmina Ghafur, Mohammad Mainul Islam, Nazmul Alam and Mohammad Sazzad Hasan (2020). Health and Demographic Surveillance System Sites: Reflection on Global Health Research Ethics, *Journal of Population and Social Studies* (JPSS), Vol. 28 No. 3 (2020): July – September, 265-275
23. Mohammad Mainul Islam and Mohammad Bellal Hossain (2020). Ethical review process in Bangladesh: Experiences of internationally funded health and demographic surveys, *Demography India*, Volume 49, Issue 1, January-June 2020, Pp. 152-158.

3.2.3 POP 509: Population Estimations and Projections

Credit hour: There will be **Two** (02) credit hours for this course.

Introduction to the Course: Projective computations are actually conducted to furnish predictions or forecasts about the future size and structure of the population in response to the needs of a certain users from a wide range of sectors (e.g. education, employment, housing, pension schemes). This course will provide students basic knowledge projecting the future population, as well as interpret the implications. The methods of projections examined in this course are not “purely” demographic, as they incorporate, at varying degree, some theoretical and technical considerations from other scientific disciplines (regional science, social development, economics and behavioral sciences). It is true to say the likelihood of population projections heavily rests in a good knowledge of the changes affecting other dimensions of development. For this reason, for generating reliable projection it is important for students to demonstrate some general knowledge about development issues related to population change.

Objectives: The overall objective of this course is to provide students with basic skills in computing population estimates and projections as part of the routine demographic analysis. Specific objectives are to discuss (a) the main methods demographers use to project, or forecast future demographic developments, (b) the justifications of plausible assumptions made regarding the future development of fertility, mortality and migration, and (c) relevant applications. Students will also be oriented to relevant projections software. Examples will be provided in Bangladesh settings as well.

Learning Outcomes: After successfully completed this course, students will be able to:

- Demonstrate knowledge and understanding of the basic concepts related to population projections including fertility, mortality, and migration
- Demonstrate knowledge and understanding of a wide range of projection methods applied to real-life situations
- Analyze past demographic trends, formulate reasonable assumptions regarding future development of demographic parameters, and evaluate their possible social, economic and environmental impacts
- Utilize DemProj software for population projection
- Critically appraise different methods of population projections and their outcomes

Course content:

1. **Concepts and definitions related to population estimates and projection:** estimates versus projections, importance of population estimates and projection from a policy perspective, understanding population projection, who produces projections
2. **Theoretical Perspectives on fertility:** Trends and Patterns of fertility (global and national), forecasting fertility and setting assumptions, Projecting future fertility
3. **Theoretical Perspectives on Mortality:** Trends and Patterns of Mortality, Forecasting Mortality and setting assumptions, Comparison of Various Life Tables for Projection, Projecting Future Mortality
4. **Theoretical perspectives of internal and international migration:** trends and patterns of internal and international migration, forecasting migration and setting assumptions; importance of including migration in projections and risk of excluding migration in projection, Projecting Future Migration

5. **Projection methodology:** Cohort component methods, alternative methods, time series, microsimulation, multi-state cohort component projections, Uncertainty, Scenario, Probabilistic projection, choosing a population projection
6. **Projection Outcomes:** Total Population Size, Projection by Age-Sex, Projection of Urban and Rural Population, Projection of Labour Force, Regional/District Level Projection, Accuracy of projection.
7. **Population projection through microsimulation**
8. **DemProj**—A computer program for making population projection

Number of Classes: There will be 30 classes for the course. Duration of each class will be 1 hour.

Instructional Strategies: Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and discussions. Individual reading will be given, and students will be presenting their summary. In addition to this, there will be group presentations on a specific topic, and groups will be formed.

References:

1. Alho J and Spencer BD (2005) *Statistical demography and forecasting*. New York: Springer.
2. Bijak J (2010) *Forecasting international migration in Europe: a Bayesian view*. Dordrecht: Springer.
3. Booth H (2006) Demographic forecasting: 1980 to 2005 in review. *International Journal of Forecasting* 22(3): 547–581.
4. George MV, Smith SK, Swanson DA and Tayman J (2004) Population projections. In: *The methods and materials of demography*, 2nd Edition, Siegel JS and Swanson DA, eds., pp. 561–601. Amsterdam: Elsevier.
5. Isserman AM (1993) The right people, the right rates: Making population estimates and forecasts with an interregional cohort-component model. *Journal of the American Planning Association* 59(1): 45–64.
6. Keilman N (2001) Data quality and accuracy of United Nations population projections, 1950–1995. *Population Studies* 55(2): 149–164
7. Keilman N (2007) UK national population projections in perspective: How successful compared to those in other European countries? *Population Trends* 129: 20–30.
8. Keilman N (2008) European demographic forecasts have not become more accurate over the past 25 years. *Population and Development Review* 34(1): 137–153.
9. O’Neill BC, Balk D, Brickman M and Ezra M (2001) A guide to global population projections. *Demographic Research* 4(8): 203–288.
10. Preston SH, Heuveline P and Guillot M (2001). *Demography: Measuring and modelling population processes*. Oxford: Blackwell.
11. Shaw C (2007) Fifty years of United Kingdom national population projections: how accurate have they been? *Population Trends* 128: 8–23.
12. Smith KS, Tayman J and Swanson DA (2001) *State and local population projections: Methodology and analysis*. New York: Kluwer Academic / Plenum.
13. Wilson T and Rees P (2005) Recent developments in population projection methodology: A review. *Population, Space and Place* 11: 337–360.

3.2.4 POP 510: Proposal Development

Credit hours: There will be **Two** (02) credit hours for this course.

Introduction to the Course: The research proposal is a central feature of the research world. Typically, this course applies to the graduate student of the department, for whom the research dissertation (or thesis) lies ahead, and for whom the approval of a research proposal is required in order to proceed with the dissertation. It applies also to the application for funds to support research, where the proposal is the vehicle by which the proposed research is assessed, and decisions are made about its funding.

Objectives: Objective of this course is to:

- familiarize the students about the process of developing a proposal. However, the course will specifically focus on the
- acquainted them with the process of developing technical proposal for implementing programs to solve problems and academic research proposal.

Learning outcomes: After the completion of this course, the students will learn:

- the purpose of proposals and their uses.
- the basic features and types of proposals.
- how to plan and do research for a proposal?
- how to organize and draft the major sections in a proposal?
- how to develop a technical and grant proposal?

Course Content:

- 1. The Proposal-Readers, Expectations and Functions:** What is a proposal? Functions and purposes of the proposal-communication, contract, and plan. Basis of proposal: research questions or research problems. Types of proposal: Request for proposal (RFP), Informal proposal, Speculative proposal, Grant proposal, and Academic research proposal.
- 2. General Framework for Developing Proposals:** Overall framework, Hierarchy of concepts, Research areas and topics, General and specific research questions, Data collection questions, Research questions and data: the empirical criterion, Tactical issues: the importance of pre-empirical stage; questions before methods; and need of hypothesis in proposal
- 3. Role of Theory and Dealing with the Literature:** Perspective behind the research, Role of theory-descriptive versus explanation and theory verification versus theory generation, Pre-structured versus unfolding research, Literature and reviewing literature- relevant literature, relationship between study and literature
- 4. Writing the Technical Proposal: Writing academic research proposal-**Title page, Abstract, Table of contents, Introduction: area, topic and statement of purpose, Research questions: general and specific, Conceptual framework, theory and hypotheses, Review of literature, Methods, Sampling, Data collection instruments, Data collection procedures, Data analysis techniques, Significance, Grantt chart, Limitations and delimitations, Ethical issues: consent, access and participant's protection, References, Appendices.
Writing grant proposal for implementing programs to solve problems-Title page, Executive summary, Table of contents, Detailed explanation of the proposal: introduction to the situation, research and analysis, Goals and objectives of the project, solutions (descriptions of project activities), unique selling proposition (USP)/ innovativeness in proposing solutions, description of

expected project results, project implementation plan, grantt chart, Background information about the organization and personnel, Logistics-budget, equipment, roles and responsibilities of human resource, Appendix

Number of Classes: There will be 30 classes for the course. Duration of each class will be 1 hours.

Instructions Strategies: The course is structured into topics as listed in the course outline. Learning activities of the course will consist of class lectures with PowerPoint presentations, reading, and discussions. Individual reading will be given, and students will be presenting their summary. In addition to this there will be group presentation on a specific topic and group will be formed. All reading materials will be provided to students by email.

References:

1. Bowling, A. (2014). Research methods in health: Investigating health and health services. Milton Keynes: Open University Press.
2. Bowling, A., & Ebrahim, S. (2005). Handbook of health research methods: investigation, measurement and analysis. Maidenhead: Open University Press.
3. Cambroner, Julian G., et al. "Writing a first grant proposal: a workshop organized by the Society for Leukocyte Biology offered advice to young scientists on how to decipher the grant-submission process of the US National Institutes of Health and compose a clear, compelling and fundable grant." *Nature Immunology*, vol. 13, no. 2, 2012, p. 105+. Accessed 17 Feb. 2021.
4. Creswell, J. W. (2014). Research design: qualitative, quantitative, and mixed methods approaches. 4th ed. Thousand Oaks, California: SAGE Publications.
5. Denscombe, Martyn. Research Proposals: A Practical Guide. Maidenhead: Open University Press, 2012.
6. O'Leary, Z., & O'Leary, Z. (2010). The essential guide to doing your research project.
7. Punch, K. F. 2006. Developing Effective Research Proposals. New Delhi: SAGE Publications
8. Stephen J. Notaro & Diane L. Smith. (2008). Fundamentals of Grant Writing for Public Health. University of Illinois at Urbana-Champaign.

Some other articles and relevant readings will also be provided.

3.2.5 POP 511: Internship

After completion of the coursework, there will be an Internship for Three (03) months to different organizations, which is equivalent to Two (02) credit hours for the Internship report (including oral examination). The Internship will be conducted for partial fulfillment of the MSS program.

Objective of the Internship: The main objective of the internship program is to gather practical experience on various programs related to population issues such as population health, sexual and reproductive health and rights, women empowerment, sustainable development, migration and urbanization, poverty reduction and population ageing. It is expected that interns will gather practical experience in project management and implementation along with hands on experience from field work, if available. The intern will work full-time in line with the office working time of his/her assigned organization by the Department.

Learning outcome: From the Internship, the interns will be able to:

- learn about the profile of the organization
- learn about all the programs being conducted under the organization
- learn about a specific program and focus on ongoing projects
- know about interventions provided under the project (if any)
- involve in conducting field work (if any).

Supervision: The intern student will conduct his/her internship under the direct supervision and guidance of the faculty members of the Department and the respective organizations.

Deliverables: A report will be submitted to the Department and his/her assigned organization based on the completion of internship.

3.2.6 POP 512: Comprehensive Examination

There will be Four (04) credit hours for this course. Two (02) credits will be for the written comprehensive examination, and two (02) credits will be for the oral comprehensive examination.

3.2.7 POP 549: Thesis

The top 40% of the students will be eligible for conducting Thesis. There will be eight (08) credit hours for Thesis. A total of 200 marks is allocated for Thesis, of which 150 marks will be for the examination of the written Thesis paper, and 50 marks will be for the oral examination on the written Thesis.

4 Student Assessment/Evaluation Policy

In course, class test, mid-term, mid-semester, final exam (Marks distribution): An individual course (except POP 510, POP 511, POP 512, and POP 549) will be evaluated based on the following criteria.

<u>Type of Assessment</u>	<u>Marks (%) Allocated</u>
• Class attendance	5 %
• Active participation in the discussion of class and/or class tutorial and/or presentation (individual or group) and/or class test and part of class attendance	10 %
• Term paper/ assignment/ homework	15 %
• Mid-semester examination	20 %
• Semester final examination	50 %
Total	100 %
POP 510: Proposal Development will be evaluated based on the following criteria: Class attendance	5%
Active participation in the class	10%
Submission of written proposal	70%
Presentation on the proposal	15%
Total	100%

POP 511: A student will submit an Internship report to the Department after the completion of her/his internship. A total of 50 marks is allocated for the Internship report of which 40 marks will be for the examination of the written Internship report, and 10 marks will be for the oral examination on the written Internship report.

POP 512: A total of 100 marks is allocated for the comprehensive examination, of which 50% marks will be given to written comprehensive examination and other 50% marks will be given to the oral comprehensive examination.

POP 549: A total of 200 marks is allocated for Thesis, of which 150 marks will be for the examination of the written Thesis paper, and 50 marks will be for the oral examination on the written Thesis.

Project & Assignment: A student or a group of students will be assigned specific topic for each course to critically discuss. Specific course teacher may also encourage presentation of a topic relevant to the course.

Continuous Assessments: Continuous assessments will be carried out throughout the semester for each course. Participation in the classes is mandatory to get the marks assigned for class participation. Taking class attendance will also be (as proxy of class participation) a part of continuous assessment.

Types of Question: Multiple choice questions (MCQ) and/or true/false question, and/or short questions and/or short notes and/or broad essay types questions will be drawn from the lectures, reading materials, group discussions and topic of presentation held to date.

Grading Policy: Grading system will follow the guideline of Faculty of Social Sciences or University of Dhaka. The current grading will be as follows:

Grading Structure in a 4 Point Grading Scale			
Marks Range (in percent)	Letter Grade	Explanation	Grade Points
80 and above	A+	Excellent	4.00
75 to less than 80	A		3.75
70 to less than 75	A-		3.50
65 to less than 70	B+	Very Good	3.25
60 to less than 65	B		3.00
55 to less than 60	B-		2.75
50 to less than 55	C+	Good	2.50
45 to less than 50	C		2.25
40 to less than 45	D	Passing	2.00
Below 40	F	Failing	0.0
-----	I	----	Incomplete
-----	W	----	Withdrawn

Requirements for awarding the degree: The Department of Population Sciences will apply the rules/guideline provided by the Faculty Social Sciences, University of Dhaka. To obtain a MSS degree, a student shall require to earn a minimum CGPA of 2.25, taking into consideration all the grade points earned in total number of courses, including improved grade, if any.