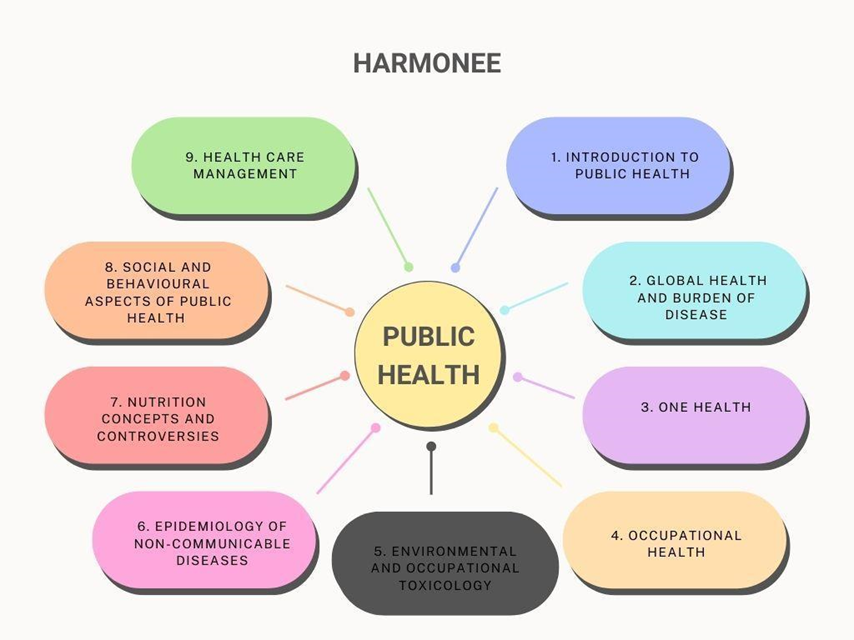
**HARMONEE**

****

***MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC***

***OSH STATE UNIVERSITY***

***INTERNATIONAL MEDICAL FACULTY***

***DEPARTMENT OF PUBLIC HEALTH***

****

**"Approved" -**

*at a meeting of the Department of Public health*

*Prot. №\_\_\_ dated \_\_\_\_\_\_\_ 2022*

*Head of department Turusbekova A.K. \_\_\_\_\_\_\_\_*

**STUDENT PROGRAM**

**(Syllabus)**

**by discipline "Global health and Burden of Disease"**

**"Master"**

Form of study: evening

Total credits -4, course -2 semester -3

Total labor intensity - 120 hours, including:

classroom - 24 hours (lectures - 10 hours, practical - 14,

SRS - 36 hours.

Number of midterm controls (RC) - 2, exam - 1 semester

**Compiled by:**Candidate of Medical Sciences, Associate Professor Turusbekova A.K.

**Osh – 2022**

**3. INFORMATION ABOUT THE TEACHER:**

**Turusbekova Akshoola Kozmanbetovna - Candidate of Medical Sciences, Associate Professor, Head of the Department of Public Health and Health.**

**Contact phones: 0550 10 70 90**

**Email: turusbekova80@mail.ru**

**6. PURPOSE AND TASKS OF THE DISCIPLINE**

the formation of undergraduate scientific understanding of the theoretical foundations of the global burden of disease, the assimilation of methods for improving the analysis of the global burden of disease, the principles of global disease prevention, the assimilation of the means used to prevent global diseases, both in peacetime and wartime, and understanding the significance of global diseases as a basis evidence-based medicine.

**Discipline tasks:**

• formulate and explain general laws and categories, biological and ecological characteristics of the global burden of disease. Using knowledge and understanding in practice: - to predict the incidence and the algorithm of necessary preventive and anti-epidemic measures for the most common nosological forms of infectious diseases.

• the formation of well-educated and qualified medical professionals who have the skills to professionally assess and interpret the results of the survey of the global burden of disease, explain the observed facts and phenomena, their causal relationships and evaluate the effectiveness and quality of preventive and anti-epidemic measures in the elimination of the epidemic focus, and are able to propose mechanisms for solving problems in these areas necessary for the acquisition of professional training and development of subsequent practical activities of the doctor.

**As a result of mastering the discipline, the undergraduate must:**

**Know:**

* current trends and challenges in the global burden of disease.
* ways of generalization, analysis, perception of information in the field of global health.
* know the key concepts of epidemiology and how to use them in solving microbiological and professional problems;
* basic modern research and methods in the prevention of infectious diseases;
* theoretical foundations of informatics in the global burden of health, the use of information computer systems and periodicals.
* Solving clinical problem-situational problems; independent preparation of oral abstract reports on program issues with their subsequent discussion.

**Be able to:**

* identify key drivers and trends in the global health burden.
* critically evaluate the various theoretical approaches that exist in the field of the global burden of health.
* apply theoretical knowledge to analyze current problems in global health;
* determine the sources of infection and the mechanism of transmission of infectious diseases;
* to classify infectious diseases to evaluate the manifestations of the epidemic process;
* conducting a primary epidemiological survey of foci of infectious (parasitic) diseases;
* filling out an emergency notification of an infectious disease;
* determine the precursors and prerequisites for infectious diseases;
* draw up algorithms for preventive and anti-epidemic measures in health facilities of various profiles;
* work with original scientific medical texts, adequately interpret medical texts of various doctrinal orientations;
* use educational, scientific, popular science literature, the Internet and an educational portal for professional activities;
* collect, process and generalize information in the field of medicine and apply the main theoretical and methodological approaches;

**Own:**

* a culture of medical thinking in the field of epidemiology, an understanding of the current epidemic realities and the challenges of globalization;
* ways of epidemiological interaction in public medicine, characterized by the presence of significant epidemiological and general medical differences;
* skills of scientific research and analysis of epidemiological problems and processes related to epidemiology and other branches of medicine;
* the main theoretical and methodological approaches in the approach to epidemiology and other branches of medicine in the field of microbiological forecasting.

**8. COURSE REQUIREMENTS**

The subject of the global burden of disease, as an academic discipline, is based on the study of public health, epidemiology, global health, general and particular epidemiology by undergraduates and is integrated with these disciplines.

**9.**POST REQUISITES OF THE COURSE

Addressing the global burden of disease.

**10.Technological map of discipline**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Total hours** |  | **Aud. Classes** | **Lecture** | **Prakt. (semin.)** | **SRS** | **Final control (40b.)** | | |  |
|  | **Exam** | | |  |
|  |  |
| **60** |  | **thirty** | **12** | **12** | **thirty** | **40** | | |  |
|  | **Points** | | | | | **40** | | |  |
|  | **Total modules** | | | | | **K1=(30+30+30+30):4=30\*2=60** | **K1=(30+30+30+30):4=30\*2=60** | **I=40b** | |
|  | **Total score** | | | | | **K=K1+I=60+40=100b.** | | | |

**11.Map of scoring per module**

***Graduate student assessment***

* *will be based on five quizzes (one quiz, two modules and one*
* *presentation) and exam*
* *The system for assessing the knowledge of a master student in class:*
* *preliminary (input, selection, initial control);*
* *current (phased, intermediate (thematic);*
* *final (final)*
* *In accordance with the requirements, individual, group and frontal surveys are used.*

***TC score card***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **TK1** | **Visit to class** | **oral questioning** | **situational**  **Task** | **Analysis interpretation** | **Quiz /PPT** | **Total** |
| **Topic1** | **5** | **10** | **5** | **5** | **5** | **thirty** |
| **Topic2** | **5** | **10** | **5** | **5** | **5** | **thirty** |
| **Topic3** | **5** | **10** | **5** | **5** | **5** | **thirty** |
| **Topic4** | **5** | **10** | **5** | **5** | **5** | **thirty** |
| **Topic5** | **5** | **10** | **5** | **5** | **5** | **thirty** |
|  | **20** | **50** | **25** | **25** | **25** | **(NT/5)=30** |

**12. SUMMARY OF THE DISCIPLINE**

This program was written taking into account the new requirements of higher education and is intended for undergraduates of the specialty "560100 - Public Health" of higher medical educational institutions. Introduction to the subject

This program was written taking into account the new requirements of higher education and is intended for undergraduates of the specialty "560100 - Public Health" of higher medical educational institutions. Introduction to the subject Teaching global diseases reflects the social problems of all four components of medical practice: prevention, diagnosis, treatment and rehabilitation. The preventive orientation of medicine requires from medical specialists deep knowledge in the field of public health.

This transdisciplinary course provides an overview of quantitative and descriptive methods and their application to the study of global health and the burden of disease. The scope of the area includes three main categories of global health and the burden of disease, including mental and behavioral disorders, communicable diseases, non-communicable medical diseases. Topical areas include maternal and child health, social determinants of health, environment and health.

The course focuses on the causes and consequences of mortality and disability, as well as comparative risk assessment. Students will learn the main methods used for global health research and the main global, regional and national trends in these areas, and will be able to apply knowledge about measurements to predict the global, regional, national burden of specific diseases, develop the necessary policy recommendations and develop prevention strategies and strategies. country-specific interventions. or regions using a transdisciplinary approach. Students will also explore aspects of the sociocultural, economic and environmental factors that influence the global and regional distribution of major disease categories, and how how the burden of disease is linked to the global economy, politics and the environment. The interdisciplinary knowledge and practical skills gained during this course will enable students to develop an interest in health research and practice in both the international and local arena. This course will introduce undergraduates to the basic concepts of interdisciplinary work, social and behavioral aspects of health, and provide tools for developing behavior change interventions to improve population health.

**10. Calendar-thematic plan of discipline by type of occupation**

**13. 1. Lectures**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Number and title of the topic** | **Lek-**  **tions**  **No.** | **Name**  **issues under study** | **TO-**  **-in**  **hour** | **Lit-ra** | **Use**  **arr. call-tech** | **Ned** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **Module 1** | | | |  | |  |
| 1.Introduction to the global burden of disease |  | ***Lecture plan:***  *● Introduction to class*  *● Course overview*  *● Reading materials*  *● Student requirements and products*  *● Global Health and the Burden of Disease Background*  *° Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)*  ***Questions:***  *● Group discussion and informal reporting: what does GBD mean to you? What would you like to achieve?*  *● Discussion: Why global health, why global burden of disease?*  *● IHME GBD visualization practice*  *● Homework for MDGs and SDGs* | **1** | **1,3,5**  **6, 8** | ***LV,MP*** | **1st** |
| 2.Basic models of the global burden of disease |  | ***Lecture plan:***  *1.*Epidemiology as a science, its goals and objectives.  *2. Definition of epidemiology.*  *3. Determinants and distribution*  *4. Historical context of epidemiology*  *5. Summarize the historical evolution of epidemiology.*  *6. Preventive medicine. Primary, secondary and tertiary prevention.*  ***Questions:***  *● Test #1*  *● Report on MDGs and SDGs*  *● Review: Hyder et al. (Chapter 1)*  *● Discussion of key GBD indicators: years of life lost (YLL); disability weights; years of life lost due to disability (YLD); disability-adjusted life years (DALY)*  *● Brief report #1 instruction* | **1** | **1,2,5** | ***LV,MP*** | **1st** |
| 3.Disease experiments |  | ***Lecture plan:***  *● Diseases and ailments*  *● Illness experience - student report*  *● Medical anthropology*  ***Questions:***  *● Introduction and practice of Gapminder*  *● Brief report #1 discussion*  *● Discussion: Kleinman chapters 1 and 6*  *● Brief report #2 instruction*  *● Group discussion: cool project* | **1** | **1,2,5** | ***LV,MP*** | **2nd** |
| 4.Global burden of psychiatric diseases and addictions. |  | ***Lecture plan:***  ***●****Global Trends in Major Mental Disorders*  *● Selected global trends in drug addiction and substance abuse*  *● Global financing for mental health*  *● Global inequality*  *● Special topics (eg, suicide, trauma and violence; global child and adolescent mental disorders; refugee mental health, gun violence)*  *● Global monitoring, prevention, intervention and health promotion*  *● Stigmatization*  ***Questions****:*  *● Deep understanding of YLD calculations in GBD 2010 study*  *● Group discussion: cool project*  *● Barriers to mental health care*  *● Review of WHO Chapter 3; Solberg, 2017*  *● Discussion: stigmatization; meaning of death in terms of HBD*  *° Other commonly used indicators of health: years of healthy life (Healthy); quality-adjusted years (QUALY)*  *● Short Report #2 expected* | **1** | **2.4, 5** | ***LV,MP*** | **2nd** |
| 5.Global burden of infectious diseases. |  | ***Lecture plan:***  ***●****Introduction to global infectious diseases*  *● AIDS as a paradigm*  *● Recent epidemics (Ebola, Zika, Covid-19)*  *° Other ID topics (e.g. tuberculosis, malaria, neglected tropical diseases)*  *● Sexually transmitted infections*  *● Global and local STI epidemiology and disease burden*  *● Prevention and control*  ***Questions:***  *● Test #2*  *● YLL, YLD and DALY calculations*  *● Review and discussion: Voigt & King, 2014*  *● Comparative Risk Assessment (CRA) concepts and model*  *° CRACK Calculation*  *● Group CRA exercises*  *● Group discussion: it is necessary to prepare an abstract of the class project* | **2** | **1.3, 4, 5** | ***LV,MP*** | **3rd** |
| 6.Maternal and child health protection. |  | ***Lecture plan:***  *● Infant and maternal mortality and morbidity rates*  *● Maternal and child health in developing countries*  ***Questions:***  *● Comparative Risk Assessment (CRA) concepts and models*  *● Group CRA exercises (continued)*  *● Brief report #3 instruction* | **2** | **2,3,6** | ***LV,MP*** | **4th** |
| 7.Global burden of noncommunicable diseases (NCDs) |  | ***Lecture plan:***  *● Major chronic diseases in developed countries: adult and geriatric diseases (cancer, obesity, cardiovascular disease)*  *● Prevention and intervention research*  *● Health promotion in developed/developing countries*  *● Best purchases and obstacles to prevent*  ***Questions:***  *● Example and practice of using CRA risk factors*  *● Brief report #3 discussion*  *● Preparing a class project plan and content* | **1** | **2, 4,5,6,7,8** | ***LV,MP*** | **5th** |
| 8. Risk factors and comorbidities of NCDs. |  | ***Lecture plan:***    *● Prevention of HPV and cancer*  *● Barriers to reducing risk factors*  ***Questions:***  *● Test #3*  *● Preparing a class project plan and content*  *● Brief report #4 instruction*  *● Study of risk factors for use* | **1** | **1,3, 4,7,9,10** | ***LV,MP*** | **5th** |
| 9.Environment and GBD. |  | ***Lecture plan:***  *● Global and national burden of NCDs due to environmental inequalities*  *● WASH in developing countries*  *● Gates Foundation WASH challenge*  ***Questions:***  *● Brief report #4 discussion*  *● Group Discussion: Class Project Plan* | **2** | **1.3, 4.6** | ***LV,MP*** | **6th** |
| 10. Presentations of students. |  | ***Lecture plan:***  ***● Final presentations of projects***  ***● Discussion presentations***    ***● Group presentation***  ***● Q&A for group presentation***  ***● Expected final report*** |  |  |  |  |

**10.2. Practical lessons**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Number and title of the topic** | **Names of the studied issues** | | **TO-**  **-in**  **hour** | **Lit-ra** | **Use**  **arr. call-tech** | **Ned** |
| **1** | **2** | | **4** | **5** | **6** | **7** |
| 1.Introduction to the global burden of disease |  | ***Lecture plan:***  *● Introduction to class*  *● Course overview*  *● Reading materials*  *● Student requirements and products*  *● Global Health and the Burden of Disease Background*  *° Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)*  ***Questions:***  *● Group discussion and informal reporting: what does GBD mean to you? What would you like to achieve?*  *● Discussion: Why global health, why global burden of disease?*  *● IHME GBD visualization practice*  *● Homework for MDGs and SDGs* | **1** | **1,3,5**  **6, 8** | ***LV,MP*** | **1st** |
| 2.Basic models of the global burden of disease |  | ***Lecture plan:***  *1.*Epidemiology as a science, its goals and objectives.  *2. Definition of epidemiology.*  *3. Determinants and distribution*  *4. Historical context of epidemiology*  *5. Summarize the historical evolution of epidemiology.*  *6. Preventive medicine. Primary, secondary and tertiary prevention.*  ***Questions:***  *● Test #1*  *● Report on MDGs and SDGs*  *● Review: Hyder et al. (Chapter 1)*  *● Discussion of key GBD indicators: years of life lost (YLL); disability weights; years of life lost due to disability (YLD); disability-adjusted life years (DALY)*  *● Brief report #1 instruction* | **1** | **1,2,5** | ***LV,MP*** | **1st** |
| 3.Disease experiments |  | ***Lecture plan:***  *● Diseases and ailments*  *● Illness experience - student report*  *● Medical anthropology*  ***Questions:***  *● Introduction and practice of Gapminder*  *● Brief report #1 discussion*  *● Discussion: Kleinman chapters 1 and 6*  *● Brief report #2 instruction*  *● Group discussion: cool project* | **1** | **1,2,5** | ***LV,MP*** | **2nd** |
| 4.Global burden of psychiatric diseases and addictions. |  | ***Lecture plan:***  ***●****Global Trends in Major Mental Disorders*  *● Selected global trends in drug addiction and substance abuse*  *● Global financing for mental health*  *● Global inequality*  *● Special topics (eg, suicide, trauma and violence; global child and adolescent mental disorders; refugee mental health, gun violence)*  *● Global monitoring, prevention, intervention and health promotion*  *● Stigmatization*  ***Questions****:*  *● Deep understanding of YLD calculations in GBD 2010 study*  *● Group discussion: cool project*  *● Barriers to mental health care*  *● Review of WHO Chapter 3; Solberg, 2017*  *● Discussion: stigmatization; meaning of death in terms of HBD*  *° Other commonly used indicators of health: years of healthy life (Healthy); quality-adjusted years (QUALY)*  *● Short Report #2 expected* | **1** | **2.4, 5** | ***LV,MP*** | **2nd** |
| 5.Global burden of infectious diseases. |  | ***Lecture plan:***  ***●****Introduction to global infectious diseases*  *● AIDS as a paradigm*  *● Recent epidemics (Ebola, Zika, Covid-19)*  *° Other ID topics (e.g. tuberculosis, malaria, neglected tropical diseases)*  *● Sexually transmitted infections*  *● Global and local STI epidemiology and disease burden*  *● Prevention and control*  ***Questions:***  *● Test #2*  *● YLL, YLD and DALY calculations*  *● Review and discussion: Voigt & King, 2014*  *● Comparative Risk Assessment (CRA) concepts and model*  *° CRACK Calculation*  *● Group CRA exercises*  *● Group discussion: it is necessary to prepare an abstract of the class project* | **2** | **1.3, 4, 5** | ***LV,MP*** | **3rd** |
| 6.Maternal and child health protection. |  | ***Lecture plan:***  *● Infant and maternal mortality and morbidity rates*  *● Maternal and child health in developing countries*  ***Questions:***  *● Comparative Risk Assessment (CRA) concepts and models*  *● Group CRA exercises (continued)*  *● Brief report #3 instruction* | **2** | **2,3,6** | ***LV,MP*** | **4th** |
| 7.Global burden of noncommunicable diseases (NCDs) |  | ***Lecture plan:***  *● Major chronic diseases in developed countries: adult and geriatric diseases (cancer, obesity, cardiovascular disease)*  *● Prevention and intervention research*  *● Health promotion in developed/developing countries*  *● Best purchases and obstacles to prevent*  ***Questions:***  *● Example and practice of using CRA risk factors*  *● Brief report #3 discussion*  *● Preparing a class project plan and content* | **1** | **2, 4,5,6,7,8** | ***LV,MP*** | **5th** |
| 8. Risk factors and comorbidities of NCDs. |  | ***Lecture plan:***    *● Prevention of HPV and cancer*  *● Barriers to reducing risk factors*  ***Questions:***  *● Test #3*  *● Preparing a class project plan and content*  *● Brief report #4 instruction*  *● Study of risk factors for use* | **1** | **1,3, 4,7,9,10** | ***LV,MP*** | **5th** |
| 9.Environment and GBD. |  | ***Lecture plan:***  *● Global and national burden of NCDs due to environmental inequalities*  *● WASH in developing countries*  *● Gates Foundation WASH challenge*  ***Questions:***  *● Brief report #4 discussion*  *● Group Discussion: Class Project Plan* | **2** | **1.3, 4.6** | ***LV,MP*** | **6th** |
| 10. Presentations of students. |  | ***Lecture plan:***  ***● Final presentations of projects***  ***● Discussion presentations***    ***● Group presentation***  ***● Q&A for group presentation***  ***● Expected final report*** |  |  |  |  |

**11. Educational technologies**

Interactive teaching methods:

1. Visualization LP Lecture
2. MS brainstorming
3. ATD-activation of creative activity
4. COP-use of computer training programs
5. T-tests
6. RK teamwork
7. Kst-case study
8. PM search method
9. IM research method

**13. Scoring Policy.**

A master's student can score points in all types of classes. At lectures and seminars - for activity, attendance and availability of notes. At the boundary control - a maximum of 30 points: for solving a situational problem, for solving tests or a written answer. For the implementation of the CPM - points separately according to the plan.

Assessment of students' knowledge is carried out according to a 100 point system as follows:

Grading of exams is carried out on the basis of the principles of objectivity, fairness, a comprehensive analysis of the quality of students' knowledge, and

|  |  |  |  |
| --- | --- | --- | --- |
| *Rating (points)* | *Grading by letter system* | *Evaluation digital equivalent* | *Assessment according to the traditional system* |
| *87 - 100* | *A* | *4.0* | *Great* |
| *80 - 86* | *IN* | *3.33* | *Fine* |
| *74-79* | *WITH* | *3.0* |
| *68-73* | *D* | *2.33* | *Satisfactorily* |
| *61-67* | *E* | *2.0* |
| *31-60* | *FX* | *0* | *unsatisfactory* |
| *0 - 30* | *F* | *0* |

Evaluation- this is the final stage of the student's educational activity, aimed at determining the success of training.

Grade by disciplineis set as the sum of the marks for the modules into which the academic discipline is structured (60 points), and from the marks during the final control - exam (40 points).

Grade per moduleis defined as the sum of assessments of current educational activities and assessments of midterm module control, expressed on a multi-point scale (60 points)

**15. Educational, methodological and information support of the course.**

Video materials, materials from the Internet:

www.medline.com

1. Projection computer installation

2. Projector for demonstrating slide presentations

3. TV- for demonstration of educational files

**Main literature:**

1. Hyder, AA, Puvanachandra P, Morrow, Rod. Indicators of health and morbidity of the population. In the books of Merson M.H., Black R.E., Mills A.J. (ed.) Global Health. Diseases, programs, systems and policies. Third edition. Learning Jones and Bartlett, 2012 (Chapter 1).

2. Kleinman A. Stories about diseases: suffering, healing and the human condition. Chapters 1 and 6, Basic Books, 1989.

3. Lopez A.D., Mathers K.D., Ezzati M., Jamison D.T., Murray K.L. (ed.). Global burden of disease and risk factors. Washington, DC: Oxford University Press and Word Bank, 2006 (chapter 1) up to page 9.

4. World Health Organization. The concept of the global burden of disease (Chapter 3).

5. Solberg, CT, Norheim, Barra M. Underestimation of mortality in the global burden of disease. Medical Ethics: 2017:0:1-7.

6. Years lived with disability (YLD) attributable to 1160 outcomes of 289 diseases and injuries 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010 Luncet 2012: 380:2163-2196

7. World Health Organization. The concept of the global burden of disease (Chapter 3).

8. Voight K., King N.B. Disability weight in the 2010 Global Burden of Disease Study: two steps forward, one step back? Bull of the World Health Authority 2014; 92:226-228.

9. Lopez A.D., Mathers K.D., Ezzati M., Jamison D.T., Murray K.L. (ed.). Global burden of disease and risk factors. Washington, DC: Oxford University Press and Word Bank, 2006 (Chapter 1), pp. 9-10.

10.https://www.healthdata.org

***Note:****MP-multimedia presentation, LP-lecture-visualization, RI-role-playing game, COP-computer training program*