

FACULTY FULL NAME: Dr. Ibtisam Mohammed Ababutain

Associate Professor in Microbiology

POSITION: Vice Dean of Studies, Development and Community Service – College of Science – Imam Abdulrahman Bin Faisal University

Personal Data

Nationality | Saudi Department | Biology Official Email | <u>iababutain@iau.edu.sa</u> Personal Email | <u>dr.king2007@hotmail.com</u>

Language Proficiency

| Language | Read | Write | Speak |
|----------|-----------------|-----------------|-----------------|
| Arabic | Native language | Native language | Native language |
| English | V. Good | V. Good | V. Good |
| Others | - | - | - |

Academic Qualifications (Beginning with the most recent)

| Date | Academic Degree | Place of Issue | Address |
|------------|------------------------|---------------------------------|------------------|
| 22/05/1427 | PhD | College of Science- King Faisal | Dammam city |
| 18/06/2006 | | University | Kingdom of Saudi |
| | | | Arabia |
| 26/07/1417 | Master | University of Bradford | United kingdom |
| 07/12/1996 | | | |
| 11/03/1410 | Bachelor | College of Science for Girls | Dammam city |
| 10/10/1989 | | | Kingdom of Saudi |
| | | | Arabia |

PhD, Master or Fellowship Research Title: (Academic Honors or Distinctions)

| PhD | Studies on Biodegradation of Insecticides by Soil Microorganism |
|--------|---|
| Master | Properties of PREVOTELLA INTERMEDIA and PREVOTELLA |
| | NIGRESCENS, which may play a role in colonization of oral sites |



Professional Record: (Beginning with the most recent)

| Job Rank | Place and Address of Work | Date |
|---------------------|------------------------------|-----------------------|
| Associate Professor | College of Science | 13/12/2012 to date |
| Assistant Professor | College of Science | 27/03/2006 |
| Lecturer | College of Science for Girls | 07/10/1998 |

Administrative Positions Held: (Beginning with the most recent)

| Administrative Position | Office | Date |
|---|---|----------------------|
| Vice Dean for Studies, development and community service | College of Science | 2018-2019 To Date |
| Vice Dean of Quality, development and Academic Accreditation | College of Science | 2014-2015/2018-2019 |
| Head of the Biology Department | College of Science | 2013-2014 |
| Assistant Head for the Alumni and Career development center | Imam Abdulrahman bin Faisal University | 2016-2017/2018-2019 |

Scientific Achievements

Published Refereed Scientific Researches (In Chronological Order Beginning with the Most Recent)

| # | Name of Author (s) | Research Title | Publisher and Date of Publication |
|---|---|--|---|
| 1 | Ibtisam Mohammed Ababutain | Antimicrobial Activity and Gas Chromatography-Mass Spectrometry (GC-MS) Analysis of Saudi Arabian <i>Ocimum basilicum</i> Leaves Extracts | 2019 . Journal of Pure and Applied Microbiology, Vol. 13(2): 823-833. |
| 2 | Azzah Ibrahim Alghamdi and Ibtisam Mohammed Ababutain * | Phytochemical Screening and Antibacterial Activity of <i>Eucalyptus</i> <i>camaldulensis</i> 's Leaves and Bark Extracts | 2019 . Asian Journal of Scientific Research, Vol. 12: 202-210. |
| 3 | Amal Aljuraifani*, Sahar Aldosary, Ibtisam Ababutain | In Vitro Antimicrobial Activity of Endophytes, Isolated from Moringa peregrina Growing in Eastern Region of Saudi Arabia | 2019. National Academy Science Letters, Vol. 42(1):75–80 |



| 4 | Ibtisam M. Ababutain * and Azzah I. Alghamdi | Phytochemical analysis and antibacterial activity of Vitex agnus- castus L. leaf extracts against clinical isolates | 2018 . Asia Life Sciences, Vol. 27 (1): 11-20. |
|----|--|---|--|
| 5 | Ibtisam M. Ababutain | Antimicrobial Activity and Phytochemical Screening of Sarcocolla Gum Resin | 2017 . Pakistan Journal of Biological Sciences, Vol. 20: 571-576. |
| 6 | Ibtisam M. Ababutain | Comparing the antibacterial activity and phytochemical components of three most commonly used oleo-gum- resin in Saudi Arabia | 2017 . Journal of Food, Agriculture & Environment, Vol.15 (3&4): 61-65 |
| 7 | Azzah Alghamdi, Magda ElBendary, Amira AlAbdalall and Ibtisam M. Ababutain* | Petroleum oil biodegradation potential of some isolated bacteria from Saudi Arabia | 2017 . Journal of Food, Agriculture & Environment, Vol.15 (3&4): 61-66 |
| 8 | Ibtisam M. Ababutain | Anti-probiotic effect of sweet basil (Ocimum basilicum L.) leaf extract | 2017 . Asia Life Sciences, Vol. 26(2): 219-228 |
| 9 | Lulwah AlFuraih, Ibtisam M.Ababutain *, Azzat AbdelKhalek and Ahmed AbdelSalam | Effect of different microencapsulation materials on stability of Lactobacillus plantarum DSM 20174 | 2016. African Journal of Biotechnology Vol. 15(24):1207-1216 |
| 10 | Ababutain M. Ibtisam. | Impact of solvent type on antibacterial activities of Lawsonia inermis leaves. | 2015 . Journal of Food, Agriculture & Environment Vol.13 (1): 51-53. |
| 11 | Ababutain M. Ibtisam*, Abdulaziz Zeinab and ALMeshhen Nijla. | Optimization of environmental and nutritional conditions to improve growth and antibiotic productions by Streptomyces Sp. Isolated from Saudi Arabia Soil. | 2013 . International Research Journal of Microbiology. Vol.4 (8): 179-187. |
| 12 | Ababutain M. Ibtisam | Effect of some ecological factors on the growth of Aspergillus niger and Cladosporium sphaerospermum. | 2013 . American Journal of Applied Sciences, Vol.10 (2):159-163. |
| 13 | Ababutain M. Ibtisam. | Aeromycoflora of some eastern provinces of Saudi Arabia. | 2013 . Indoor and Built Environment. Vol. 22(2): 388-394 |
| 14 | Ababutain M. Ibtisam [*] , Abdul Aziz Zeinab and ALMeshhen Nijla. | Lincomycin antibiotic biosynthesis produced by Streptomyces sp. Isolated from Saudi Arabia soil: II- extraction, separation and purification of Lincomycin. | 2012 . Canadian Journal of pure and applied sciences, Vol. 6(2): 1905-1911. |



| 15 | Ababutain M. Ibtisam*, Abdul Aziz Zeinab and ALMeshhen Nijla | Lincomycin antibiotic biosynthesis produced by Streptomyces sp. Isolated from Saudi Arabia soil: I – Taxonomical, antimicrobial and insecticidal studies on the producing organics. | 2012 . Canadian Journal of pure and applied sciences, Vol. 6(1):1739-1748. |
|----|---|--|--|
| 16 | Ababutain M. Ibtisam. | Antimicrobial Activity of Ethanolic Extracts from Some Medicinal Plant. | 2011 . Australian Journal of Basic and Applied Sciences, Vol. 5(11): 678-683. |
| 17 | Ababutain M. Ibtisam. | Studies on the diversity of Mycoflora associated with spotted leaves of Date Palm. | 2009 . Scientific Journal of King Faisal University-Basic and Applied Sciences. Vol. 10(2): 1-16. |
| 18 | Ababutain, M. Ibtisam ; Barakah, F.N and Heggo, A.M*. | Effect of Pesticides (Lannate and Diazinon) on Growth and Activity of Soil Free Living Nitrogen Fixing Bacteria. | 2009 . Journal of. K Saudi Soc. For Agric. Sci. Vol. 8(1): 40-52. |
| 19 | Ababutain, M. Ibtisam ; Barakah, F.N and Heggo, A.M*. | Effect of some Pesticides on soil Microorganisms growth in soil with organic matter. | 2008 . Alexaneria Science Exchange Journal, Vol. 29 (4):38-53. |
| 20 | Barakah, F.N; Ababutain M. Ibtisam and Heggo A.M*. | Effect of lannite and diazinon pesticides on some soil Microorganisms. | 2007 . Alexaneria Science Exchange Journal, Vol. 28 (1):38-53. |

Research accepted for publication

| # | Name of Author (s) | Research Title | Journal Name | Date of acceptance |
|---|-----------------------|----------------|-----------------|-----------------------|
| 1 | - | - | - | - |
| 2 | - | - | - | - |

Scientific Research Papers Presented to Refereed Specialized Scientific Conferences

| # | Name of Investigator(s) | Research Title | Conference and Publication |
|---|---------------------------|-----------------------------|----------------------------------|
| | | | Date |
| 1 | Imen Massoudi, Ridha | The activity of zinc oxide | 1 st regional virtual |
| | Hamdi, Ibtisam Ababutain, | nanoparticle synthesized by | symposium on physic |
| | Ethar Alhussain and Aya | milling against human | advances – Bahrain |
| | Kharma | pathogenic microorganisms | University |
| | | | 28-29/06/2020 |



| 2 | Azzah Alghamdi, Magda ElBendary, Amira AlAbdalall and Ibtisam M. Ababutain | The possibility of biological analysis of petroleum oil by some bacteria isolated from Saudi Arabia and its ability to produce surface tension materials | and Environmental Development in Vision 2030. Makah-Umm-Alqura University 18-20/April/2017 |
|---|---|--|---|
| 3 | Azzah Alghamdi, Amira AlAbdalall, Magda ElBendary, and Ibtisam M. Ababutain | Study the ability of a mixture of the selected bacterial strains in the analysis of petroleum oil and the effect of some physiological factors on them | Abha- King Khalid |
| 4 | Ibtisam M.Ababutain, Lulwah AlFuraih, Azzat AbdelKhalek and Ahmed AbdelSalam | Preparation of functional food containing encapsulated probiotic bacteria | The 12th Egyptian Dairy Science & Technology Conference. Egyptian Dairy Science Association - Egypt – Cairo 9-11 / November / 2015 |

Completed research Projects

| # | Name of Author (s) | Research Title | Date of Publication |
|---|--------------------|-----------------------|---------------------|
| | - | - | - |
| | - | - | - |

Current Researches

| # | Research Title | Name of Author (s) |
|---|--|--|
| 1 | Identification and antibacterial characterization of endophytic fungi from <i>Artemisia sieberi</i> | Ibitsam Mohammed Ababutain*, Sahar Khamees Aldosary, Amal Abdulaziz AlJuriafani, Azzah Ibrahim Alghamdi, Amira Hassan Alabdalall, Eida Marshid Al-Khaldi, Sumayh A Aldakeel, Noor B Almandil, Sayed AbdulAzeez, J. Francis Borgio |
| 2 | The activity of zinc oxide nanoparticle synthesized by milling against human pathogenic microorganisms | Imen Massoudi*, Ridha Hamdi, Ibtisam Ababutain, Ethar Alhussain and Aya Kharma |
| 3 | In vitro anticandidal activity and gas chromatography-mass spectrometry (GC- | Ibtisam M. Ababutain* and Azzah I. Alghamdi |



| | MS) screening of <i>Vitex agnus-castus</i> leaves extracts | |
|---|--|--|
| 4 | Efficient Pollutants Removal Technologies Project Number: 2018-110-Sci | Hesham Elkomy*, Ibtisam Ababutain and Others. |
| 5 | Plant in high saline ecosystem Project Number: 2019-363-SCi | Hesham Elkomy*, Ibtisam Ababutain and Others |

Contribution to Scientific Conferences and Symposia

| # | Conference Title | Place and Date of the Conference | Extent of Contribution |
|---|---|---|-----------------------------|
| 1 | International Conference on Education and Training Evaluation 2020 | Education and Training Evaluation Commission 14-15/10/2020 | Attendance - online |
| 2 | The first Arab summit for self-development Under the slogan back to the inside | kingdom of Bahrain 26/07/2020 | Attendance - online |
| 3 | 1 st regional virtual symposium on physic advances – Bahrain University | kingdom of Bahrain 28-29/06/2020 | Poster - online |
| 4 | The final program of Online Meeting on Medicinal Plants: Traditional Botany to Research to Pharmacy and Industry | MedPlants-2020 30/06/2020 | Attendance - online |
| 5 | The 4 th Saudi International Nanotechnology Conference (SCNC 2016) | Dhahran- King Fahd University of Petroleum and Minerals 25-27/10/2016 | Attendance |
| 6 | 1 st Annual Scientific Research update: Medicine and Biomedical Research 2015 | Dammam – University of Dammam 16-18/05/ 1436 5-7/ 04/ 2015 | Attendance |
| 7 | Conference of the twenty-ninth meeting of the Saudi Society for Life Sciences entitled | Sheraton Hotel – Dammam 25-27/02/2014 | Rapporteur of the Committee |



| | (Environment and Development in the Gulf) | | |
|---|--|---------------------------------------|------------|
| 8 | Conference (Fourth Palm Symposium) in Saudi Arabia | King Faisal University 5-8/05/2007 | Attendance |

Membership of Scientific and Professional Societies and Organizations

-Association of Agricultural Sciences of King Saud University.

- Saudi Society for Medical Microbiology and Infectious Diseases.
- Life Sciences Society of King Saud University.

Teaching Activities

Undergraduate

| # | Course/Rotation Title | No./Code | Extent of Contribution (no. of lectures/Tutorials. Or labs, Clinics) |
|----|----------------------------|-----------|---|
| 1 | Microbiology Physiology | N413 | 15 lectures, 12 labs |
| 2 | Economical plant | N422 | 15 lectures |
| 3 | Bacteria and viruses | BIOL 221N | 15 lectures, 12 labs |
| 4 | General Biology | BIOL 101N | 15 lectures, 12 labs |
| 5 | Graduation research | N427 | 15 lectures |
| 6 | Fungi and algae | BIOL 332N | 15 lectures, 12 labs |
| 7 | Health & Fitness | HTFT 151S | 15 lectures |
| 8 | Research Project | BIOL448N | 15 lectures |
| 9 | Bacteriology | N224 | 12 labs |
| 10 | Microbiology | MICRO 307 | 12 labs and 15 lectures |
| 11 | Fundamentals of Ecology | BIOL 207 | 13 labs |
| 12 | Microtechnique | BIOL 501 | 13 labs |

Brief Description of Undergraduate Courses Taught: (Course Title - Code: Description)

1 N413 Physiological Microbiology

Introduction to Microbiology and Physiological Basis of Microbiology Classification. Autotrophic - Algae - Bacteria - Autotrophic bacteria - Self-feeding bacteria. Energy sources for these organisms, sources of conversion of light energy to chemical energy, stabilization of carbon dioxide (similarities and differences between bacteria and algae), non-self-feeding throw bacteria, and energy sources. Metabolism of carbohydrates (simple and complex), different ways of converting these substances to the material of the organism, the importance of NADH-ATP in metabolism and construction, the composition of these two compounds, their chemical and physical properties, breathing in microorganisms Carbs



cycle with reference to the nature of this cycle in the absence of oxygen, cycle Glycosylate, microorganism growth on finite and unlimited plants, nutritional requirements for microorganisms, fermentation, nitrogen metabolism. 2 **Economic Plant N422** General idea about the economic plants in the world and the most important products. Effective and inactive ingredients. 3 **Bacteria and viruses BIOL 221N** In this course the student defined the classification of the bacteria from the taxonomic in microorganisms, as well as recognize the importance of bacteria and viruses, and some applied fields for them, and practical skills to isolate bacteria and cultivated in vitro methods (bacteria used is not pathogenic) also the most important bacterial genera and species viral, and the most important Genus and types of both and economic and medical importance of them. Physical and chemical factors affecting bacterial growth. Also recognize the cycle of the virus within the host. viruses and Immunology **General biology BIOL 101N** 4 An introductory biology course with lab for preparatory general level. The major emphasis is on cell biology in plant and zoology including cell structure, organization and division. Illustrating concepts and principles of basic structure and function, genetics and ecology. Also, it is an integrated study of basic concepts concerning living organisms (plant and animals). Emphasis on diversity of living organisms, morphology, limited reproductive cycles, taxonomy and physiology. 5 **Graduation Research N427** Practical or theoretical lessons in plant and microbiology, introducing the student to the method of scientific research and different methods and collecting data, analysis and preparation of reports in the field of plant and microbiology. Fungi and algae BIOL 332N 6 This course will provide studies of different methods of asexual and sexual reproduction in fungi and algae; in addition, to identify their cell structures. Moreover, it will focus on identifying the differences between their different classes'. Also, through a combination of lecture, this course will emphasis on the economic importance of fungi and algae in addition to determine their morphology and internal structure Health & Fitness HTFT 151S 7 Recognize the concept of public health and types. Distinguish the rules of health protection. The students will aware of the most important non-communicable diseases, which affect health directly. Also aware of the concept of integrated nutrition and the role of food in the body building and protect him from disease. The sources of danger in requesting food. The necessary skills to conduct simple first aid in the event of accidents or injuries. Recognize generally forms of psychological pressure, sources and how to handle them. The negative effects of smoking, drugs and alcohol on health and social aspects of the individual. 8 **Bacteriology N224:** Study of optical microscopy and use of oily lens, examination of bacterial slices, and examination of colonies of developing bacteria on hard media and study the external shape of them, preparation of artificial media, the study of methods of sterilization by wet heat, dry heat, radiation, filtration. Incubation methods, simple dye, compound dye, acid resistant



dye, dye germs and dye whip. Estimation of bacterial cell count and isolation. Grow the anaerobic bacteria.

9 Microbiology MICRO 307: This course provides an introduction to microbiology. It describes: diversity and taxonomy of microorganisms; microbial cell structure and function, microbial growth and metabolism, principles of microbial genetics including DNA and RNA structures, replication, different forms of mutation and mutagenic agents. It also covers the applications of microorganisms in industry and environment.

10 **Microtechnique BIOL 501:** This course aims at presenting students with an introduction to the techniques of microscopy and their applications in biology. In addition, students gain hands-on experience in the preparation of whole mounts, smears, and permanent glass slides in both plant and animal tissues (from fixation to staining).

Teaching Activities

Postgraduate

| # | Course Name | Course Code | Contribution field |
|---|----------------------------------|-----------------|--|
| 1 | Environmental Microbiology | MICR 501 | Teaching the theoretical part |
| | (Advanced) | | |
| 2 | Research Methods | MICRO 502 | Teaching the theoretical part |
| 3 | Advanced studies in bacteriology | MICRO 575 | Teaching the theoretical and practical |
| | | | part |
| 4 | Research Methods | BIOL 570 | Teaching the theoretical part |

Brief Description of Postgraduate Courses Taught: (Course Title – Code: Description)

1 Environmental Microbiology (Advanced) MICR 501

Acidic environments and biodiversity in microorganisms. Interactions between microorganisms, the environment of thermal and superheated microbes and mechanisms for thermal stability (protein-cell wall DNA), root zone and interaction between plants and soil microbes.

2 **Research Methods MICRO 502**

Theoretical lessons in microbiology, introducing the student to the scientific research method and its different methods, collecting and analyzing data and preparing reports in the field of microbiology.

3 Advanced studies in bacteriology MICRO 575

Introduce postgraduate students to the most important classification and physiological studies in bacteriology. Reviewing; modern international researches, practical, and theoretical significance. It is important for students to master research methods for information, practical experiments assessment, and writing reports.

4 **Research Methods BIOL570**

Introducing the student to the scientific research method, collecting and analyzing data and preparing reports in the field of biology sciences.

| 1100 | | | | | |
|------|-----------|--------------------|------|------|--|
| # | Stage | Number of students | from | to | |
| 1 | Masters | 3 | 1434 | 1435 | |
| 2 | Doctorate | 4 | 1434 | 1435 | |
| 3 | Bachelor | 12 | 1431 | 1434 | |

Academic Advising for Students



Supervision of Master and/or PhD Thesis

| # | Degree Type | Title | Institution | Date |
|---|-------------|--|---|--------------------------|
| 1 | Master | Use the capsule in the protection of probiotics to produce functional foods | University of Dammam | 1433/11/22 1434/08/07 |
| 2 | Master | Biosynthesis of Silver Nanoparticles by Industrial Soil Isolate from the Eastern Province of Saudi Arabia | Imam Abdulrahman bin Faisal University | 1439/1/1 To date |

Administrative Responsibilities, Committee and Community Service

(Beginning with the most recent) Administrative Responsibilities

| # | Position | Organization | From | То |
|---|---|-----------------------|-----------|---------|
| 1 | Member of College Council | College of Science | 2014-2015 | To Date |
| 2 | Member of Biology Department Council | Biology Department | 2007-2008 | To Date |

Membership of committees

| # | Committees | Position | From | То |
|---|---|--------------------|-----------|-----------|
| 1 | Advisory Committee for the Management of Study Plans and Programs, Imam Abdulrahman Bin Faisal University | Member | 2016-2017 | To Date |
| 2 | External Advisory Committee, College of Science | Member | 2014-2015 | To Date |
| 3 | Alumni and Career Development office College of Science | Head of the office | 2013-2012 | To Date |
| 4 | Committee for the preparation of descriptions of bachelor programs courses, Department of Biology, College of Science. | Member | 2014-2015 | 2015-2016 |
| 5 | Sub-Academic Follow-up Committee, College of Science | Member | 2014-2013 | 2014-2015 |
| 6 | Committee for the preparation of descriptions of postgraduate programs (Master), Department of Biology, College of Science. | Member | 2013-2012 | 2014-2015 |
| 7 | Advisory Committee of the Alumni and Career Development Center, | Member | 2011-2012 | 2013-2014 |



| | Dammam University | | | |
|---|--|-----------|-----------|-----------|
| 8 | Registration and Academic Advising and | Head of | 2011-2010 | 2011-2012 |
| | Transformers Committee, | Committee | | |
| | Department of Biology, College of | | | |
| | Science. | | | |
| 9 | Extracurricular Activity Office, | Head of | 2008-2009 | 2009-2010 |
| | College of Science. | Committee | | |

Scientific Consultations

| # | From | То | Organization | Full time - Part time |
|----|------------|------------|---|-------------------------|
| # | гюш | 10 | 6 | Full tille - Fait tille |
| 1 | 30/07/2020 | 16/08/2020 | Plant cell biotechnology and molecular biology | Part time |
| 2 | 19/05/2017 | 02/06/2017 | African Journal of Agricultural Research | Part time |
| 3 | 28/11/2016 | 02/12/2016 | Agricultural Science Research Journal | Part time |
| 4 | 09/09/2016 | 24/09/2016 | African Journal of Biotechnology | Part time |
| 5 | 14/01/2016 | 20/02/2016 | Indoor and Built Environment | Part time |
| 6 | 30/01/2012 | 09/02/2012 | British Biotechnology Journal | Part time |
| 7 | 2015 | 2015 | International Journal of Applied Microbiology and | Part time |
| | | | Biotechnology Research | |
| 8 | 2015 | 2015 | African Journal of Plant Science | Part time |
| 9 | 2013 | 2013 | International Journal of Biotechnology and Food | Part time |
| | | | Science | |
| 10 | 2013 | 2014 | College of Hafr Al-Batin - University of Dammam | Part time |
| | | | previously | |

Volunteer Work

| # | From | То | Type of Volunteer | Organization |
|---|--------------|--------------|---|--|
| 1 | 02/04/2019 | 02/04/2019 | Participation in "Rawa" Program | Office of Education Governorate Khobar - care unit talented |
| 2 | 08/11/2018 | 08/11/2018 | participation in the discussion the projects of talented students "Toward creativity" | Eastern Exhibition for Creativity Olympics 2019 |
| 3 | 07/03/ 2017 | 07/03/ 2017 | participation in the meeting of career opportunities for university graduates at Saudi Aramco | Alumni and Career Development Center, |
| 4 | 07/ 06/ 2015 | 09/ 07/ 2015 | Project member | SA-RSI international summer program for gifted students, collaborate with CEE (Center for Excellence in Education, USA), Saudi ARAMCO |
| 5 | 2013 | To Date | Supervising the training program | Office of Alumni and Career Development Center, College of Science |
| 6 | 06/02/2013 | 06/02/2013 | Research Arbitration in the Fourth Student Conference | Imam Abdulrahman bin Faisal University (formerly University of Dammam) |
| 7 | 12/03/2013 | 19/03/2013 | Participation in the judging committee in the National Olympiad for Scientific Creativity (Ibda'a) Level 2 | King Abdul Aziz and his men - talent |



| 8 | 28/03/2011 | 23/03/2011 | Participation in judging committee in the National Olympiad for Scientific Creativity (Ibda'a) Level 3 | King Abdul Aziz and his men - talent |
|---|------------|------------|---|--------------------------------------|
|---|------------|------------|---|--------------------------------------|

Personal Key Competencies and Skills: (Computer, Information technology, technical, etc.)

| 1 | Ability to use computer programs Microsoft Office. | | | |
|---|---|--|--|--|
| 2 | Ability to use the Blackboard program in teaching (preparation of electronic content - preparation of tests - monitoring grades - communication with students - the development of advertisements). | | | |
| 3 | Ability to use a correspondence program in administrative transactions (sending, forwarding and answering letters). | | | |
| 4 | The ability to use the program of student records in teaching (electronic preparation - monitoring of grades - academic guidance). | | | |

Up Date14/10/2020