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**Five-Year  
Research Plan of  
Menoufia  
University  
2024/2029**



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### Address by the President of the University

In light of the growing pioneering role of Egyptian universities, particularly Menoufia University, at the local, regional, and international levels, and in response to the current global competitiveness in higher education—especially in the fields of scientific research and innovation—Menoufia University firmly believes that the capabilities of all its members, including faculty staff, teaching assistants, registered researchers from within and outside Egypt, and an efficient administrative body, constitute a principal factor behind the remarkable progress the University has achieved in the research domain. This progress is reflected in the increasing number of internationally published research papers, patents, international partnerships, and the rapid positive advancement in various global rankings, all of which demonstrate the genuine efforts exerted by Menoufia University and its members in this field.

This distinction is further supported by advanced postgraduate programs that provide high-level academic content across all research disciplines, reflecting the extensive expertise of those responsible for teaching these programs. Such expertise has been acquired over many years of study, research, and collaboration with scientific institutions from various countries around the world, thereby enabling the University to provide the latest scientific trends within the campus of Menoufia University to all those wishing to pursue academic and professional pathways in postgraduate studies.

In this context, I am pleased to present the five-year research plan for postgraduate studies and scientific research at Menoufia University, which builds upon well-established previous plans and reinforces them with the latest developments in scientific and theoretical fields across various disciplines, thereby creating a solid foundation and a fertile environment for supporting global research output and consolidating the University's position among the leading universities worldwide in diverse research areas.

I would also like to extend my sincere appreciation to all members of Menoufia University, whose outstanding efforts are clearly reflected in this introductory document of the research plan and in the detailed plans covering all health sectors, engineering disciplines, basic sciences, earth sciences, agriculture, social sciences, educational sciences, humanities, and all other branches of science across the University. I extend my sincere wishes for their continued success.

**President of the University**  
**Prof. Ahmed Farag El-Kased**



### Address by the Vice President of the University for Graduate Studies and Research

Based on the university's commitment to keeping pace with scientific progress and its belief that science and scientific research are the foundation of any advancement and the cornerstone of any civilization, through which nations rise and prosper, and its dedication to providing a suitable scientific environment by developing the university's research plan to align with the state's commitment to achieving continuous progress in numerous fields, thus serving the intensive work aimed at achieving the seventeen desired Sustainable Development Goals embodied in Egypt's Vision 2030, across all sectors based on conducting scientific research and linking it to the scientific research strategy of the university and the state, and addressing the problems of the regional community. This includes achieving coordination among researchers from the university's colleges and institutes and the research centers that support them, maintaining a balance between research addressing local environmental problems and technological research, and working towards the practical application of the results of theses, research papers, and research projects, while adhering to innovation and creativity as a means to advance scientific research and serve the community.

I am honored to present the Menoufia University Research Plan 2024-2029. This collaborative effort, based on the combined efforts and expertise of all those involved in postgraduate studies and research, aims to achieve progress and prosperity for humanity. It stems from a belief in the role of science in creating a better life for societies, through the development of the educational process at the university and adherence to the locally and internationally recognized ethics of scientific research.

I extend my sincere thanks to everyone who contributed to the preparation of this research plan, including the deans, vice deans, department heads, and the research plan team.

Vice President for Postgraduate Studies and Research  
Prof. Ghada Ali Hassan



### Address by the Former Vice President of the University for Graduate Studies and Research

Menoufia University has witnessed remarkable progress in both the quality and quantity of scientific research published in highly reputable and credible academic journals over the past decade. This progress has had a positive impact on improving the University's international rankings, thereby enhancing its global standing, increasing international recognition, and strengthening its ability to attract international students. On the other hand, researchers at Menoufia University regard this institutional achievement as a strong indicator of the scientific value of their research, as well as of the infrastructure provided by the University that supports the production of such research. This research is closely aligned with the Global Sustainable Development Goals (SDGs), Egypt Vision 2030, and national priority issues within Egyptian society, particularly those related to health, education, poverty reduction, innovation, the environment, climate change, sustainability, and other key areas in which scientific research plays a vital role in shaping future visions and development pathways. In addition to the distinguished body of professors and researchers at the University, who achieve outstanding rates of international publication and hold advanced positions in individual academic rankings, the University—like other higher education institutions—faces several challenges, including limited funding and the need to ensure full commitment to research ethics and the integrity of scientific work. These aspects are subject to periodic review with the aim of strengthening positive practices and reducing or preventing shortcomings, in line with internationally adopted standards. The development of the University's research infrastructure has been accompanied by continuous upgrading of laboratories, encouragement of interdisciplinary research, emphasis on international partnerships, and effective follow-up of all activities related to scientific research, publication, and innovation.

On behalf of myself and all those who contributed to making available and updating Menoufia University's Research Plan 2024/2029, I extend my sincere appreciation to the Deans of the Faculties and Institutes, their Vice Deans for Graduate Studies and Research, all faculty members and assisting staff at the University's faculties and institutes, as well as all participants involved in preparing this research plan from the Scientific Research Department, together with the administrative staff whose competence and dedication greatly supported this work. I sincerely hope that this plan will serve the University, its community, Egypt, and the world at large, and that the journey of giving and contribution will continue for the benefit of humanity.

**Former Vice President of the University for Graduate Studies and Research**  
**Prof. Hazem Ibrahim Saleh**



### Address by the Director General of the General Administration for Graduate Studies and Research

On behalf of all members of the administrative body concerned with Graduate Studies and Research at Menoufia University, I am honored to affirm the effective role played by the administrative staff—both centrally at the University administration level and across the faculties and institutes of Menoufia University—in supporting the graduate studies and research system. This also includes all personnel working in the central and research laboratories, as well as all those supporting research-related activities at Menoufia University. This role becomes increasingly significant with the growing number of international students enrolled in graduate degree programs, as the administrative body contributes efficiently to providing the required services at a high level of competence.

Menoufia University administration attaches great importance to institutional digital transformation, given its essential role in maximizing the factors of success in delivering educational services with speed and accuracy. Accordingly, the administrative body is fully aware of the importance of acquiring future-oriented tools and technologies to bring about fundamental changes and continuous improvement in service performance through the University's electronic portal, work automation, and enhanced computer skills in all transactions, while recognizing the importance of maintaining file confidentiality and data accuracy for centralized use within the University in monitoring the progress of graduate educational and research processes.

The various administrative departments also follow up on the work of committees related to scientific research, including scientific publication reward committees, committees for applied research projects funded by the University, and University committees for excellence and recognition, among other committees that include distinguished experts from faculty members together with administrative staff, with the aim of providing additional services that contribute to encouraging scientific research and innovation.

In conclusion, I extend my sincere thanks to all colleagues from the University's Scientific Research Department who participated in preparing Menoufia University's Five-Year Research Plan 2024/2029, with full confidence that the continuous development of the administrative body remains a solid pillar upon which the advancement of university performance in all fields, including graduate studies and research, can always rely.

Former Director General of Graduate Studies and Research Administration

Dr. Mohamed Fawzy Zidan



### 1- Introduction

All countries exert great efforts, in various ways, to achieve the welfare and progress of their peoples through the support and significant role of scientific research in achieving innovations that contribute to and stimulate the growth of the national economy. This positions countries among the advanced nations in utilizing and marketing research-based innovations, which are considered fundamental pillars in the path of national development.

Accordingly, the Arab Republic of Egypt is keen to maintain a strong presence in competitive fields that serve communities and humanity at large. This is achieved through competition in scientific and applied innovation and by updating state research plans, implemented through the efforts of various universities and research centers.

Menoufia University occupies a distinguished position among Egypt's longstanding governmental universities, with a notable local, regional, and international impact. It provides high-quality educational services across various academic stages, while also offering opportunities for advanced scientific research to its staff and external researchers. These efforts enable them to obtain advanced degrees (Diploma, Master's, and Doctorate), whether along the academic track or the professional track, contributing also to the development of the university's engagement with its regional community and beneficiaries across all industrial, commercial, agricultural, administrative, legal, and other specializations.

The university does not operate in isolation from the Ministry of Higher Education or the strategic directions of the state. Considering global efforts toward achieving sustainable development goals, Menoufia University's research plan takes all of these factors into account, particularly with respect to ongoing international developments in education and research. Its aims include graduating researchers with a comprehensive understanding of global, regional, and local challenges, and equipping them with the ability to apply knowledge in addressing societal issues and proposing innovative, non-traditional solutions that respond to growing challenges related to natural resources, public health, climate change, and more.

Thus, this document presents the latest update of Menoufia University's research plan, reflecting the university's pioneering role and its regional and international openness. It highlights its active participation in addressing global issues through scientific publications, applied research, patents, the promotion of innovation, and other academic activities conducted by the university to advance scientific research across all levels and specializations.

## 2. Global Sustainable Development Goals

The international community, through the United Nations, has agreed on the priority of achieving sustainable development goals that benefit people, conserve the Earth's resources from depletion and pollution, and ensure a stable life for future generations. This is in light of the attention given to several factors that directly and indirectly impact human life.

Figure (1) illustrates the seventeen Sustainable Development Goals (SDGs) according to the United Nations classification, which serve as a crucial reference for guiding humanitarian efforts to achieve them. These goals constitute standards that Egypt is committed to, and their implementation is supported through various mechanisms, including innovation and scientific research.



Figure (1): The Seventeen Targeted Global Sustainable Development Goals

In light of this, it should be noted that the prepared and ongoing research plans implemented at Menoufia University serve all seventeen Sustainable Development Goals mentioned above. This is in accordance with the annexes specific to each university sector, accompanied by the main and subsidiary fields of research and their associated sustainable development objectives.

### 3. Egypt's Sustainable Development

In light of the state's dedication to achieving continuous progress across a wide range of sectors that foster the desired development and serve the advancement of humanity and nations, specific development axes have been defined to construct Egypt's Sustainable Development Strategy 2030. Moreover, several indicators have been established to monitor and measure progress in these fields, ensuring their periodic evaluation and effective implementation.

Figure (2) illustrates the Sustainable Development Axes, while Figure (3) presents selected excerpts from Egypt's Sustainable Development 2030 Plan, highlighting certain sectors and associated progress indicators. Undoubtedly, scientific research represents a fundamental pillar that enables the state to achieve these objectives in a structured and scholarly manner.



Figure (2): Sustainable Development Axis in Egypt 2030

#### Health

Egypt seeks, by 2030, to ensure that all Egyptians enjoy a healthy, safe, and secure life through the implementation of a comprehensive health system characterized by integration and equitable access, by improving health indicators, developing the health system and ensuring the financial sustainability of healthcare services for all citizens, including those unable to pay.

##### Key Performance Indicators to Measure Outcome

- Increase the number of doctors and hospital beds per capita to 3 doctors per 1,000 citizens.
- Lower the mortality rate to 60%.
- Ensure access to essential health services for all citizens.
- Achieve full health insurance coverage for all Egyptians.
- Increase the share of government spending on healthcare.
- Ensure the quality of services and expanding

Performance Measure Outcome

#### Knowledge, Innovation, and Scientific Research

The Egyptian society pledges to build a knowledge society characterized by creativity and innovation, as a driver for national economy, and to improve human well-being.

##### Key Performance Indicators to Measure Outcome

- Egypt within top 30 countries worldwide in
- Increase scientific research outputs.
- Maintain the nurturing of talents and creative capacities.
- Egypt within top 20 countries worldwide in innovation.
- Increase the number of patents and intellectual property rights.
- Increase the number of patents and intellectual property rights.

## Environment

The strategy also promotes sustainable improvement in the quality of life for present and future generations through raising awareness of environmental protection, mitigating climate change impacts, and providing a clean and sustainable environment.

### Key Performance Indicators for Measuring Performance

- Increasing water productivity by approximately 5% annually
- Achieving safe sanitation coverage for 100% of villages
- Improving air quality indicators
- Doubling energy-use efficiency by 2030
- Reducing waste generation to 0.5 kg per capita daily

## Education

The strategy aims to strengthen human development resources through education and health services, ensuring high-quality education accessible to all by 2030.

### Key Performance Indicators for Measuring Performance

- Top 30 countries worldwide in education quality
- Achieving zero illiteracy rate
- Kindergarten enrollment reaches 80%
- 10 Egyptian universities among top 500 globally

## Urban Development

Egypt Vision 2030 seeks urban development characterized by connectivity, integration of historical and modern architecture, and balanced resource utilization.

### Key Performance Indicators for Measuring Performance

- Increasing inhabited land area to 5%
- Constructing 7.5 million housing units
- Solving informal settlement challenges

## Energy

The Egyptian government aims to maximize domestic energy utilization and enhance the sector's contribution to economic growth.

### Key Performance Indicators for Measuring Performance

- Securing energy resources
- Increasing reliance on domestic resources
- Reducing energy consumption intensity
- Enhancing contribution to national income

Figure (3): Examples of Some Fields and Their Measurement Indicators in Egypt's Sustainable Development 2030 Plan

#### 4. Policy of the Ministry of Higher Education in Egypt

In light of the previously presented global sustainable development goals and the Egyptian state’s Sustainable Development Strategy 2030, efforts are being integrated across all institutions to intensify work toward achieving the desired sustainable development embodied in Egypt Vision 2030. With regard to research institutions, this is reflected in addressing research priorities that correspond to the State’s strategic needs .In this context, the Ministry of Higher Education and Scientific Research in Egypt has sought to achieve these goals through several main pillars—as illustrated in Figure (4)—which aim at ensuring continuous improvement in quality of life, justice, inclusion, a strong economy, progress in knowledge, innovation, environmental sustainability, governance, security, peace, and leadership status.This is realized through the strategic plans of each educational and research institution, as well as through the administrative measures adopted by research institutions to achieve these objectives by increasing international partnerships, improving international rankings, encouraging innovation at all stages of study, and implementing other measures that enable research institutions—not only through research itself—to contribute effectively to achieving these goals.



Figure (4): Main Pillars of the Ministry of Higher Education for Achieving Egypt’s Sustainable Development Plan 2030

It is worth noting that the implementation of various efforts across these different pillars ultimately aims at achieving the State’s sustainable development plan, which is likewise grounded in the realization of the Global Sustainable Development Goals. Therefore, the University adopts a range of measures to contribute to this objective through several practices that are not limited solely to scientific research, although scientific research represents one of the important pillars—though not the only one—in achieving this goal .Accordingly, Menoufia University has been keen to direct its research priorities toward issues of national importance to the Egyptian State in achieving sustainability, supporting the economy, enhancing resilience to climate change, providing a favorable environment for investment, promoting social justice, governance, and other practices carried out by the University through its various sectors.Given that the current document focuses exclusively on the research plan of Menoufia University, reference will be made to the main and subsidiary research topics for each faculty, which fulfill the University’s research mission. These topics also contribute to achieving and supporting the Global Sustainable Development Goals, as detailed in the appendices.

## 5. The Role of the University's Research Sector in Achieving the State's Goals and Sustainable Development

### 1-5. General – Scientific Research

This part of the research plan addresses Menoufia University and its role in achieving the state's goals and the global sustainable development objectives. It underscores the importance of scientific research in supporting positive changes at all levels, which also calls for the continuous development of postgraduate programs and research plans to align with global transformations.

The significance of scientific research becomes more prominent as countries increasingly rely on it, recognizing its crucial role in achieving progress, civilizational development, and continuity. Scientific research methodologies have become a standard practice in academic institutions and research centers. Moreover, research outcomes are widely used in addressing challenges faced by both public and private institutions on an equal footing. In addition to the benefits that scientific research provides to human society, it also yields important personal advantages for researchers themselves. It emphasizes the importance of modern educational policies at all levels and highlights the benefits of research for individual researchers.

Scientific research constitutes one of the fundamental pillars upon which universities rely to fulfill their mission. The research plan of Menoufia University aims to advance scientific research across all fields, affirming its belief in the role of research in societal development and national advancement.

### 2-5. University Establishment:

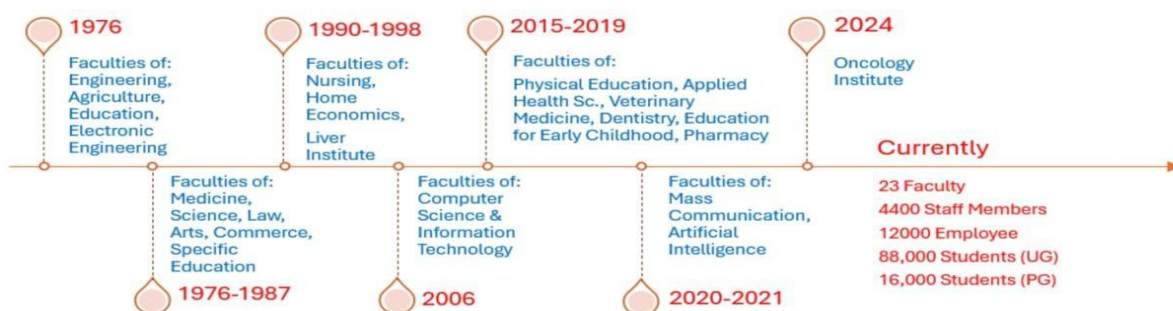


Figure (5). Temporal Development of the Establishment of Menoufia University's Faculties and Institutes

According to the temporal development of the establishment of Menoufia University's faculties and institutes, as illustrated in Figure (5), Menoufia University was established pursuant to Republican Decree No. 1142 of 1976 to meet the increasing demand for higher education and to support other Egyptian universities and higher education institutions in fulfilling their mission in developing and advancing society through providing distinguished educational, research, and community services. The university initially started with only four faculties: Agriculture, Engineering, Education, and Electronics Engineering, accommodating 9,500 students at the undergraduate level (bachelor's degree) and 214 faculty members, along with 372 teaching assistants (lecturers/assistant instructors). Until 2012, and before the transfer of its branch in Sadat City into an independent university (Sadat City University), Menoufia University included 22 faculties and institutes distributed across four cities in Menoufia Governorate (Shibin El Kom, Sadat, Menouf, Ashmoun). Subsequently, the university's facilities in Sadat City were separated to form the nucleus of Sadat City University. At the same time, expansion continued within Menoufia University through the establishment of additional faculties and institutes.

Currently, Menoufia University comprises 23 faculties and institutes, including: Medicine, Nursing, Engineering, Electronics Engineering, Agriculture, Science, Home Economics, Special Education, Arts, Education, Early Childhood Education, Commerce, Law, Computers & Information, Physical Education, Media, Applied Medical Sciences, Artificial Intelligence, National Liver Institute, Dentistry, Pharmacy, Veterinary Medicine, and the Oncology Institute, in addition to the Technical Institute of Nursing, as illustrated in Figures (6), (7), and (8).

The university offers both undergraduate programs (bachelor's/License) and postgraduate degrees (diploma, master's, doctorate) across various specializations in natural and human sciences.

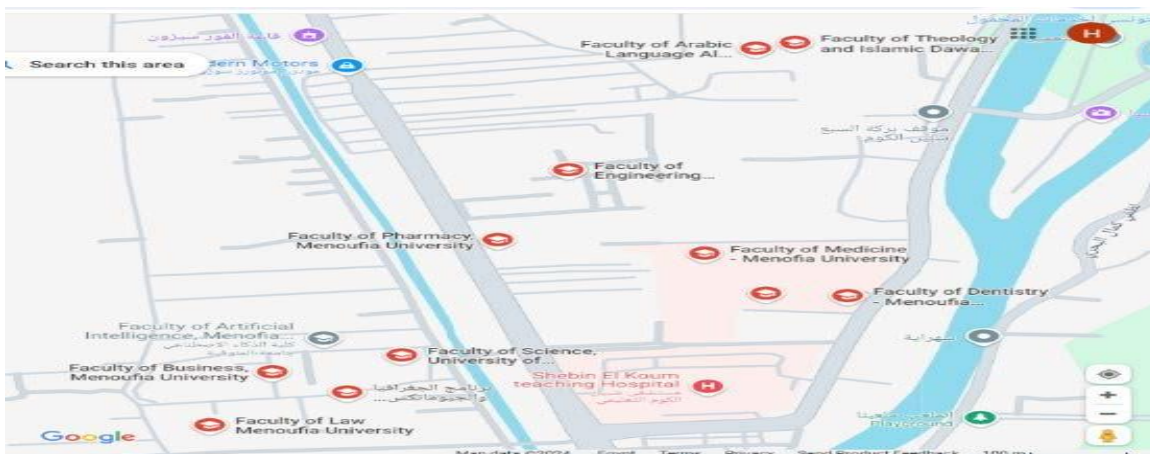


Figure (6). Locations of Menoufia University Faculties within the Medical and Theoretical Complexes in the Center of Shibin El Kom City

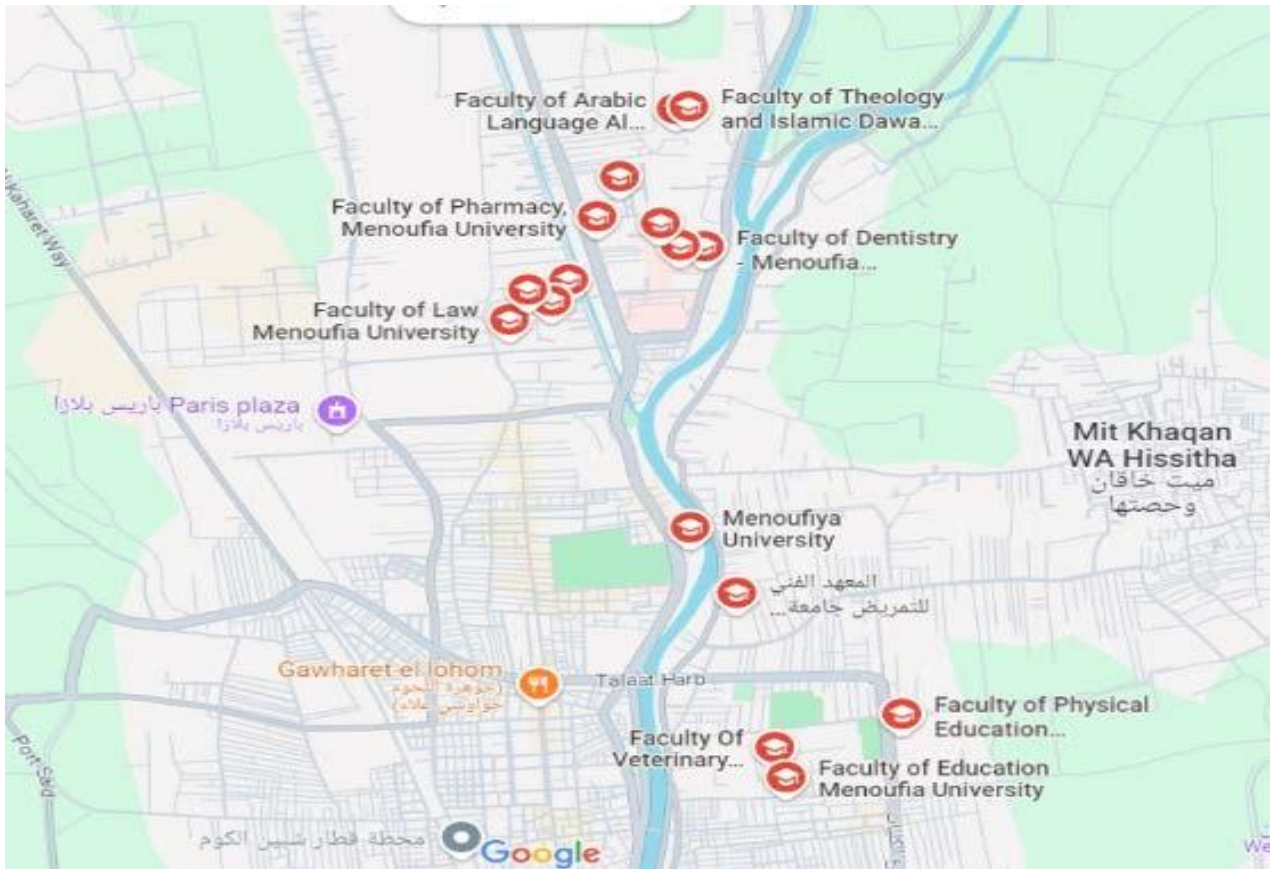


Figure (7): Distribution of Menoufia University Campuses in Shibin El-Kom City



Figure (8): Educational and Research Institutions of Menoufia University within the Boundaries of Menoufia Governorate

### 3-5. University Vision:

"Menoufia University aspires to be among the leading universities at the local and international levels in providing educational, research, and community services aligned with the objectives of sustainable development."

### 4-5. University Mission:

"Menoufia University is one of the higher education institutions that contributes to preparing the human resources needed for the labor market and qualifying them by providing distinguished educational, research, and community services according to reference standards, in order to achieve the goals of sustainable development and gain the trust of society."

### 5-5. University Research Sectors:

#### Life Sciences and Medicine:

- Medical Studies Sector: Faculty of Medicine, National Liver Institute, Oncology Institute, Faculty of Applied Health Sciences
- Nursing Sector: Faculty of Nursing
- Veterinary Medicine Sector: Faculty of Veterinary Medicine
- Pharmaceutical Studies Sector: Faculty of Pharmacy
- Dentistry Sector: Faculty of Dentistry

#### Natural Sciences, Engineering, and Technology:

- Engineering Studies Sector: Faculty of Engineering, Faculty of Electronics Engineering
- Basic Sciences Sector: Faculty of Science
- Agricultural Studies Sector: Faculty of Agriculture
- Computer and Information Sciences Sector: Faculty of Computers and Information, Faculty of Artificial Intelligence

#### Humanities and Social Sciences:

- Arts Sector: Faculty of Arts
- Education Studies Sector: Faculty of Education, Faculty of Early Childhood Education, Faculty of Home Economics, Faculty of Special Education
- Social Sciences and Administration: Faculty of Commerce, Faculty of Law, Faculty of Mass Communication
- Sports Sciences: Faculty of Physical Education

### 6-5. Scientific Research Policies at Menoufia University:

The university develops its scientific research strategy and links it to the national research strategy to contribute to advancing the educational process and solving regional community problems through:

- Expanding institutional goals to open new global horizons in light of the knowledge economy and competitiveness.
- Elevating the university's status within the higher education system and gaining societal trust.
- Preparing graduates to meet labor market requirements.
- Recruiting faculty members with distinguished academic and professional competencies locally and internationally.
- Conducting advanced research that serves economic and social development plans.
- Developing and efficiently utilizing the university's financial and material resources.
- Establishing an adequate organizational and administrative structure.
- Encouraging innovation, renewal, and creativity in all scientific research fields.
- Guiding research to address environmental and societal issues and achieve sustainable development goals.
- Supporting community partnerships with leading scientific research institutions in Egypt and abroad in accordance with regulations and governance standards.
- Protecting scientific creativity by adhering to recognized local and international research ethics.
- Building an integrated research roadmap across all Menoufia University faculties to support societal and environmental development.
- Seeking funding from multiple sources and support mechanisms for scientific research policies.

### 7-5. Research Plan Standards:

The university's research plan focuses on the following criteria:

1. Linking scientific research to the university's vision and mission.
2. Achieving sustainable community development while ensuring local and global competitiveness.
3. Coordinating between researchers from various faculties and supporting research centers.
4. Maintaining a balance between environmental, applied, and technological research.
5. Implementing practical applications of theses, research, and projects.
6. Enhancing community partnerships with production, industry, and supporting institutions locally and internationally.
7. Committing to innovation and creativity as a means to advance scientific research and serve society.

### 8-5 Research Plan Objectives of Menoufia University

In light of the vision of the Sector of Postgraduate Studies and Research at Menoufia University, which states: "To advance scientific research at Menoufia University in alignment with the national objectives of scientific research and Egypt Vision 2030, thereby contributing to sustainable development and keeping pace with global perspectives in this regard across all fields, enhancing the educational process at the university, and addressing local and regional community issues."

The research plan is based on monitoring and analyzing trends in scientific research with the aim of achieving a balance between basic and applied research and addressing local community problems. Therefore, the objective of establishing this plan is to improve the level of research performance and create a sound research environment for the university's faculties through the advancement of research activities, in order to achieve the following: (For example, but not limited to, the research topics of each faculty and institute at the university are referred to in the appendices of this report.)

1. Work towards achieving integration and coordination in the efforts carried out by the faculties and by the university as a whole.
2. Develop research plans that ensure alignment with development plans and the needs of the local community.
3. Encourage applied scientific research that addresses national challenges and local community issues.
4. Promote scientific publication in internationally peer-reviewed journals with high impact factors.
5. Develop and enhance the capabilities of university teaching staff.
6. Document all research activities, establish comprehensive data records, and publish them.
7. Encourage partnership in scientific research across different disciplines and fields.
8. Expand the scope of scientific research.
9. Achieve alignment with faculty policies in the fields of education, community service, and environmental development.
10. Increase the proportion of research projects funded both internally and externally.
11. Benefit from technological advancement and innovation in all research fields.
12. Utilize digital transformation in all research domains.
13. Produce data and make it accessible in all research areas.
14. Prepare a supportive legislative and institutional environment.
15. Achieve continuous development in the health sector to serve human well-being.
16. Ensure continuous development in pharmaceutical industries and other factors supporting comprehensive health insurance.
17. Address climate change and its impact on the local and regional environment.

18. Promote self-sufficiency in food commodities within the Arab Republic of Egypt.
19. Apply artificial intelligence across all research fields within the Arab Republic of Egypt.
- 20.. Develop educational efficiency in the educational institutions of the Arab Republic of Egypt and the Arab region.
21. Ensure continuous development in the fields of new and renewable energy.
22. Maintain public health and build intellectual and physical capacities of individuals within Egyptian society.
23. Increase wealth and animal health while combating epidemic and communicable diseases.
24. Employ leadership in human sciences, education, and law to develop the work environment and improve Egyptian society.
25. Enhance organized sports across all fields.
26. Expand structural research with significant impact on accelerating innovation, patenting, and other research outputs directly benefiting communities.
27. Promote educational and media roles in raising awareness of societal priority issues, such as population growth, resource preservation, and ways to create positive behavioral change.
28. Address endemic and intestinal disease challenges (e.g., hepatitis viruses, bilharzia).
29. Tackle transportation, roads, and traffic issues.
30. Address challenges in education and private tutoring.
31. Confront problems related to violence, drug crimes, and addiction.
32. Produce and develop new types of renewable energy, such as wind and solar power.
33. Apply energy utilization in various fields.
34. Develop means and methods of energy transmission.
35. Conduct research on energy development.
36. Develop and manage water resources.
37. Address water pollution and treatment.
38. Employ new strategies to rationalize water use.
39. Apply innovative strategies to address water scarcity risks.
40. Treat and manage wastewater.
41. Manage agricultural activity byproducts.
42. Increase livestock and dairy production.
43. Enhance the economic return of crops.
44. Optimize investment in agricultural areas.
45. Derive high-yield and pest-resistant crop varieties.
46. Introduce modern technological techniques to improve and develop agricultural activities.
47. Apply modern technological innovations in industry.

48. Implement innovative strategies in urban planning and sustainable development at the governorate level.
49. Apply innovative strategies to develop the industrial system.
50. . Develop new strategies to reduce encroachment on agricultural lands.
51. Utilize modern techniques for the diagnosis and treatment of tumors.
52. Develop methods to combat endemic and epidemic diseases, particularly (hepatitis viruses and kidney failure).
53. Conduct modern studies on the side effects of drugs and methods to avoid them.
54. Improve the biological effectiveness of medications.
55. Introduce new methods for chemical and biological analysis.
56. Discover new compounds.
57. Address environmental pollution: its causes, risks, and treatment methods.
58. Recycle environmental, agricultural, and industrial waste.
59. Study the economic aspects of environmental protection and relevant legislation.
60. Other objectives may be added in line with the development of work under the current five-year plan.

As previously noted, these objectives represent a general framework for what is to be achieved at the level of each individual research unit within faculties and institutes at the university.

### 9-5 Standards of Scientific Research Ethics

Menoufia University attaches great importance to adherence to the ethical standards of scientific research, following the recommendations issued by the Supreme Council of Universities in this regard. The main practices for respecting scientific research ethics at the university can be summarized as follows:

1. Mandatory respect and commitment to the principles and the Honor Code of scientific research ethics as defined in the university's executive regulations.
2. Belief that scientific research is the cornerstone for the advancement of society and the resolution of its problems, enhancing the university's educational standards to compete with international universities in terms of quality of education and research.
3. Avoiding repetition of ideas in scientific research, with a focus on innovation and the discovery of new scientific facts that have a positive impact on society across all sectors including medicine, engineering, and agriculture.
4. Commitment to academic honesty in conveying information, with proper citation of sources.
5. Avoid using criticism in a harmful way; the researcher should present results objectively and compare them with previous studies.
6. Ensuring the research topic is precise, relevant, and addresses societal problems from multiple innovative angles.
7. Avoid using scientific research for personal purposes such as propaganda or flattery.

8. Commitment to intellectual property rights.
9. Publishing research in scientifically reputable and high-ranking journals.
10. Assessing the benefits and positive outcomes of conducting research and identifying potential risks.
11. Defining a clear timeframe for completing research.
12. Commitment to agreements and contracts with researchers, ensuring full ethical implementation.
13. Clinical research on patients must strictly follow scientific research ethics, including:
  - Adherence to good clinical practice and transparency of research procedures.
  - Obtaining written informed consent from the patient after explaining research details and its expected impact.
  - Monitoring the researcher's procedures, treatment plan, and follow-up of confirmed cases, without compromising care at any stage.
  - Patients' rights to withdraw from participation at any time.
  - Ensuring patients benefit from positive research outcomes.
  - Avoiding providing unrealistic or non-evidence-based promises to patients.
  - Maintaining complete confidentiality of patient data during and after research.
  - Ensuring research topics match the researcher's expertise and capabilities.
14. Scientific research involving animals must adhere to ethical standards, including:
  - Selecting appropriate animals for research, avoiding random selection without studying their biological nature.
  - Minimizing animal suffering during surgical procedures and using anesthesia post-surgery.
  - Avoiding euthanasia unless absolutely necessary and refraining from any violent practices at the end of experiments.
  - Providing suitable housing, nutrition, and water.
  - Ensuring full veterinary care for experimental animals.
  - Providing adequate references clarifying the biological nature of the animals and proper handling methods.

### 10-5 Sources for Collecting Data for the Research Plan

Data for the scientific research plan at Menoufia University is collected through the following sources:

1. The university's strategic plan and its corresponding executive plan.
2. Review of research plans at other universities.
4. Study of research plans across all university faculties to identify available research capabilities. Data related to granted academic degrees (Master's and Doctorate) and published research from all university faculties and institutes.
5. Identification of joint research fields between the university's faculties and institutes.

6. Organization of workshops, meetings, and gatherings with all university faculties and institutes.
7. Data on the number of enrolled students and graduates, including those holding Diploma, Master's, and Doctorate degrees.

### 11-5. Funding Sources for the Research Plan at Menoufia University

One of the most critical components for the success of any research plan is funding. Given the limited budget allocated by the government, the university seeks to expand opportunities for funding that support scientific research. These include, for example:

Internal funding sources:

- The university's share of the state budget allocated for scientific research.
- The University Research Support Fund.
- Higher education development projects.

External funding sources:

- The Academy of Scientific Research in Egypt.
- The Research and Technology Development Fund in Egypt.
- Grants announced as competitions by the European Union, partnership agreements, Fulbright, and others.
- Grants announced by UNESCO-UNICEF-Arab Organization for Education, Culture, and Science in the form of open competitions.

### 12-5. Participating Parties in the Implementation of the Research Plan at Menoufia University

To ensure the success and credibility of research plans, participation is sought from various stakeholders, either directly or indirectly, through the outputs of scientific research. This complements the benefits that society derives from the university's graduates in the initial stage of university education. Examples of external partners as key contributors to the success of the research plan include:

- End beneficiaries in the industrial sector, aiming to achieve scientific innovations or solutions to problems in their specialized fields.
- End beneficiaries in other sectors, such as healthcare, pharmaceutical manufacturing, and other institutions seeking scientific solutions to their challenges through university-based research.
- Relevant scientific departments in other Egyptian universities, whose research activities provide additional effective and valuable contributions to joint research projects at Menoufia University.
- Academic departments and faculty members from different specialties, who participate in multidisciplinary research within Menoufia University, offering opportunities to create a qualitative shift in the nature of these studies.
- Academic funding agencies, both domestic and international, which recognize Menoufia University's proven ability to secure targeted funding for addressing specific scientific problems. External and Internal Partners in the Implementation of Menoufia University's Research Plan



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- International partnerships with universities and research institutions outside Egypt, whose expertise adds qualitative value to joint research projects and facilitates researcher exchange.
- Enrollment of international students in postgraduate programs, whose engagement in practical research at the university and attainment of academic degrees strengthens the university's competitive position at the regional level.
- Attracting a proportion of Egyptian and foreign graduates from other universities within the Delta region to enroll in postgraduate programs at Menoufia University across various specialties, with numerous available programs to accommodate them.

There is also active internal partnership within the university, represented in the integration of roles to achieve the objectives of the university research plan through the following entities:

- Prof. / University President
- Prof. / Vice President for Postgraduate Studies and Research
- Deans of Menoufia University Faculties
- Vice Deans for Postgraduate Studies and Research
- Scientific Research Committee
- Cultural Relations Departments at the university and faculties
- General Administration for Postgraduate Studies and Research
- Heads of Scientific Departments in university faculties
- Faculty members in scientific departments, each within their field of specialization
- Postgraduate Studies and Research Departments in faculties and institutes
- Quality and Development Unit at the University
- Quality and Development Units in Faculties
- Research and Services Marketing Unit at the University

### 13-5 Follow-up Mechanisms for Implementing Menoufia University's Research Plan

- The implementation of the university's research plan is monitored across all faculties, with Prof. / Vice President for Postgraduate Studies and Research responsible for oversight.
- Deans and vice deans of faculties report annually on their faculty's research plan to the Vice President for Postgraduate Studies and Research.
- However, it is recognized that one of the main pillars of scientific research is the continuous registration of young researchers in postgraduate studies to ensure ongoing productivity. Continuous monitoring is not guaranteed due to variations in external demands, direct entry into the labor market, or the balance between postgraduate studies and other commitments. The University Postgraduate Council continuously discusses achievements in this regard, noting that the number of available research topics generally exceeds the

number of new researchers, as the university is equipped with qualified academic staff to study numerous topics.

- Proposals for development and solutions to any obstacles are discussed periodically.

### 14-5 Research Outputs

- Scientific theses (Master's and Doctorate)
- Graduation projects (Postgraduate Diplomas) and specialized reports
- Derived research from Master's and Doctoral theses, which may meet the requirements for obtaining a degree or exceed them in terms of originality, innovation, and renewal.
- Published research papers, either international or local, whether derived from theses or independently prepared by faculty members, including original and innovative work accepted in high-ranking international journals.
- Funded applied research projects, including student projects and those required by practical faculties, as well as other funded research projects.
- Joint research with other research or applied entities, whether inside or outside Egypt.
- Research projects with beneficiary entities, such as industry, for example.

### 15-5 Obstacles to Implementing the Research Plan

No field is free from certain obstacles that may prevent achieving the objectives of the research plan. Specialized entities (faculties and the university administration) work on addressing these obstacles and studying alternative solutions. Examples of such obstacles include:

- Weak scientific publication in peer-reviewed international journals.
- Insufficient state funding for scientific research (e.g., inadequate laboratory facilities).
- Widening gaps between research, postgraduate studies, and labor market requirements.
- Migration of some distinguished faculty members to work at universities abroad.
- Failure of some researchers to return after obtaining their doctorates abroad for various reasons.
- Insufficiently well-equipped laboratories.

Institutions, productive entities, and the community face additional challenges, including:

- Lack of sufficient information about different sectors.
- Delays and slow execution in implementing research initiatives.

To address these challenges, the university administration works hand-in-hand with faculties and various institutes to achieve the objectives of the university's research plan, enhance the visibility and impact of its outputs, support international publication, encourage innovation, and implement patent procedures consistent with state policies, contributing to sustainable local and global development.

## appendices

The appendices include research plans for the various sectors at Menoufia University, as classified by the Supreme Council of Universities, covering nearly all specializations in each sector. In addition, there is encouragement for interdisciplinary research between faculties—whether within the University or with external institutions, both inside and outside Egypt—to achieve better progress in studying research topics that require multiple specializations. This approach aligns with current trends in conducting multidisciplinary research.

Accordingly, the following appendices present the research plans for the various sectors, illustrating the main

### Fields of Higher Education

 <b>Arts &amp; Humanities</b>	 <b>Social Sciences &amp; Management</b>	 <b>Life Sciences &amp; Medicine</b>	 <b>Natural Science, Engineering &amp; Technology</b>
<ul style="list-style-type: none"> <li>1 Arts Sector</li> <li>2 Educational Studies Sector</li> <li>3 Archaeology and Heritage Sector</li> <li>4 Arts and Music Education Sector</li> <li>5 Linguistic Studies Sector</li> </ul>	<ul style="list-style-type: none"> <li>6 Social Services Sector</li> <li>7 Sports Sciences Sector</li> <li>8 Media Studies Sector</li> <li>9 Legal Studies Sector</li> <li>10 Economics and Political Science Sector</li> <li>11 Tourism and Hotels Sector</li> <li>12 Commercial Studies Sector</li> </ul>	<ul style="list-style-type: none"> <li>13 Medical Studies Sector</li> <li>14 Dentistry Sector</li> <li>15 Nursing Sector</li> <li>16 Pharmaceutical Studies Sector</li> <li>17 Physical Therapy Studies Sector</li> <li>18 Veterinary Medicine Sector</li> </ul>	<ul style="list-style-type: none"> <li>19 Engineering Studies Sector</li> <li>20 Computer Science and Informatics Sector</li> <li>21 Agricultural Studies Sector</li> <li>22 Basic Sciences Sector</li> </ul>

and specialized research fields, as well as the institutions expected to participate in these research activities, their funding, and the expected outcomes of such research, thereby supporting and consolidating the principles of achieving the international Sustainable Development Goals.

As Menoufia University presents this significant collective work—based on the efforts and expertise of all those involved in the field of postgraduate studies and research, including faculty members, teaching assistants, local and international postgraduate students, and an efficient administrative apparatus professionally managing the system—the University aspires, through these contributions, to promote advancement and prosperity for humanity, grounded in its belief in the pivotal role of science in achieving better lives for communities.

Menoufia University also welcomes the engagement of all those interested in contributing to postgraduate studies and notes that clear steps and guidelines for this purpose are available on the University's official website:

<https://www.menofia.edu.eg/Home/ar>

Furthermore, detailed guidance is available at the offices responsible for postgraduate studies and research, both within the relevant faculties and at the central administration of the University.