National Academic Reference Standards (NARS) for Engineering (Post Garduate Studies)

POSTGARDUATE DIPLOMA PROGRAMS

1. ATTRIBUTES

The graduate of the postgraduate diploma programs must be able to:

1. Apply knowledge of specialized engineering concepts that gained through the professional practice.
2. Identify and solve engineering problems.
3. Master some professional skills and use of appropriate technological means to serve the professional practice.
4. Communicate and lead team works effectively through professional system.
5. Make decisions in light of available information.
6. Employ available resources efficiently.
7. Consider the detrimental impact of the engineer role on society and environment.
8. Display professional responsibilities and ethical, societal and cultural concerns.
9. Recognize the need to develop and engage in continuous learning.

2. ILOS

2.1 Knowledge and Understanding

With the completion of the postgraduate diploma program, the graduate will be able to understand:

1. Theories, concepts and specialized knowledge of the learning area and also sciences appropriate to the professional practice.
2. Moral and legal ethics of the professional practice in the area of specialization.
3. Concepts and principles of quality of the professional practice in the area of specialization.
4. The impact of the professional practice in the environment and its preservation.

2.2 Intellectual Skills

With the completion of the postgraduate diploma program, the graduate will be able to:

1. Specify and analyze problems in the area of specialization with arrangement according to their priority.
2. Solve specific problems in the area of specialization.
3. Demonstrate a high level of competence in the analysis of researches and subjects related to the specialization.
4. Risk assessment in the professional practices.
5. Take technical decisions based upon available information.

2.3 Professional Skills

With the completion of the post graduate diploma program, the graduate will be able to:

1. Apply professional skills in the area of specialization.
2. Write technical reports.

2.4 General and Transferable Skills

With the completion of the post graduate diploma program, the graduate will be able to:

1. Communicate effectively in different aspects.
2. Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
3. Adopt self-assessment and specify his personal learning needs.
4. Use different resources for information and knowledge.
5. Collaborate effectively within multidisciplinary team with good time management.
6. Lead a team in familiar professional contexts.
7. Continuous self-learning.

MASTER PROGRAMS

1. ATTRIBUTES

The graduate of the master program must be able to:

1. Master the basics and methodologies of scientific research with versatile use of its variable tools.
2. Apply the analytical approach and its use in the field of specialization.
3. Apply the specialized knowledge integrated with specialized engineering concepts related to the professional practice.
4. Show awareness of the ongoing problems and modern visions in the area of specialization.
5. Identify and solve engineering problems.
6. Master some professional skills and use of appropriate technological means to serve the professional practice.
7. Communicate and lead team works effectively.
8. Take good decisions in different professional aspects.
9. Employ available resources efficiently.
10. Adopt awareness of the detrimental impact of the engineer role on society and environment under the global and regional variables.
11. Display professional responsibilities and ethical, societal and cultural concerns.
12. Recognize the need to develop and engage in continuous learning.

2. ILOS

2.1 Knowledge and Understanding

With the completion of the master program, the graduate will have knowledge and understanding in:

1. Theories, concepts and specialized knowledge of the learning area and also sciences appropriate to the professional practice.
2. Mutual influence between professional practice and its impacts on the environment.
3. Scientific developments in the field of specialization.
4. Moral and legal ethics of the professional practice in the area of specialization.
5. The concepts and principles of quality of the professional practice in the area of specialization.
6. The basics and ethics of scientific research.

2.2 Intellectual Skills

With the completion of the master program, the graduate will be able to:

1. Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems.

2. Solve specific problems on the basis of limited and contradictory information.
3. Demonstrate a high level of competence in the coordination of different sources of knowledge to solve professional problems.
4. Carry out a research study and/or writing a scientific methodology study on research problem.
5. Analyze and assess the risks of professional practices in the field of specialization.
6. Plan to improve performance in the field of specialization
7. Make career decisions in different professional aspects.

2.3 Professional Skills

With the completion of the master program, the graduate will be able to:

1. Apply modern and principle professional skills in the area of specialization.
2. Write and evaluate technical reports.
3. Adopt assessment methods and tools existing in the area of specialization.

2.4 General and Transferable Skills

With the completion of the post graduate diploma program, the graduate will be able to:

1. Communicate effectively in different aspects.
2. Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
3. Adopt self-assessment and specify his needs of personal learning.
4. Use different resources for information and knowledge.
5. Establish rules and indicators for assessing the performance of others.
6. Collaborate effectively within multidisciplinary team and lead teams in different professional contexts.
7. Demonstrate a high level of competence in the time management.
8. Continuous self-education.

PhD PROGRAMS

1. ATTRIBUTES

The graduate of the PhD program of any specialization must be able to:

1. Master the basics and methodologies of scientific research.
2. Work continuously to add more knowledge in the field of specialization.
3. Apply the analytical approach with critical survey in the field of specialization and other related fields.
4. Integrate the specialized knowledge with relevant knowledge with ability to deduce and develop the mutual relationships.
5. Show deep awareness of the ongoing problems and modern theories in the area of specialization.
6. Identify, formulate and solve engineering problems with innovative solutions.
7. Master a wide range of the professional skills in the field of specialization.
8. Develop new methods, tools and techniques professional practice
9. Use of the appropriate technological means to serve the professional practice.
10. Communicate and lead team works effectively in different professional aspects.
11. Make technical decisions based upon available information.
12. Employ of the available resources with high motivation to develop and create new resources.

13. Consider the detrimental impact of the engineer role on society and environment
14. Display professional responsibilities and ethical, societal and cultural concerns.
15. Commit itself to continuing self-development and transfer of knowledge and expertise to others.

2. ILOS

2.1 Knowledge and Understanding

With the completion of the master program, the graduate will have knowledge and understanding in:

1. The theories, concepts and modern knowledge in the field of specialization and other related fields.
2. The basics, methodologies, ethics of scientific research and its versatile tools.
3. The moral and legal ethics of the professional practice in the area of specialization.
4. The concepts and principles of quality of the professional practice in the area of specialization.
5. The knowledge on the effects of professional practice on the environment and ways of development and maintenance of the environment.

2.2 Intellectual Skills

With the completion of the master program, the graduate will be able to:

1. Analyze and evaluate of information in the field of specialization and make full use of such information to solve problems.
2. Solve specific problems on the basis of limited and contradictory information.
3. Carry out a research studies to add new information to the knowledge.
4. Write scientific papers.
5. Assess and analyze risks in the field of specialization.
6. Plan to improve performance in the field of specialization.
7. Make good decisions in different professional aspects.
8. Have innovation/creativity.
9. Discuss and negotiate in high level of confidence based upon proofs and evidences

2.3 Professional Skills

With the completion of the master program, the graduate will be able to:

1. Apply modern and principle professional skills in the area of specialization.
2. Write and evaluate technical reports.
3. Adopt assessment methods and tools existing in the area of specialization.
4. Use of the appropriate technological means to serve the professional practice.
5. Plan to improve the performance of the professional practice and development of the performance of others.

2.4 General and Transferable Skills

With the completion of the post graduate diploma program, the graduate will be able to:

1. Communicate effectively in different aspects.
2. Demonstrate efficient IT capabilities in such a way that serves in the development of the professional practice.
3. Manage the scientific meetings and manage time.
4. Adopt self-assessment and Adopt life-long learning.

5. Use different resources for information and knowledge.
6. Collaborate effectively within multidisciplinary team and lead team works.
7. Demonstrate a high level of competence in the management of time and scientific meetings.