

## **The National Engineering University**

#### **Mabini Campus**

Sitio Mailayin, Barangay P. Niogan, Mabini, Batangas Tel Nos.: (+63 43) 425-01143 local 9103

E-mail Address: mabini@g.batstate-u.edu.ph | Website Address: http://www.batstate-u.edu.ph

### **College of Informatics and Computing Sciences**

#### **CURRICULUM**

# **Bachelor of Science in Information Technology (BSIT)**

Academic Year 2021-2022 Reference CMOs: CMO No. 25, s. 2015, CMO 4 s. 2018, CMO No 20, s. 2013, CMO No. 39, s. 2021, CMO No. 40, s. 2021

### **Curriculum Description**

The curriculum for BSIT includes the required GE courses, six (6) core courses common to all ITE programs, professional courses required for the BSIT program, and electives. The students are also required to undertake practicum work and complete a capstone project. Moreover, it is composed of three (3) tracks such as network technology, business analytics and service management.

The Information Technology curriculum combines technical, professional, and general education components to prepare students for a career, further study, and lifelong professional development in the computing discipline associated with the program. Also, the program includes basic and advanced courses on planning, development, integration and management of information technology.

#### **Program Objectives**

The alumni of BS Information Technology program, about three to five years after graduation shall:

- 1. Help create innovations to ensure the competitive edge of the Philippine computing industry.
- 2. Adhere to ethical standards in the practice of the computing profession.

#### **Institutional Graduate Attributes**

- 1. Demonstrate a mastery of the fundamental knowledge and skills required for functioning effectively as a professional in the discipline, and an ability to integrate and apply them effectively to practice in the workplace.
- 2. Experiment with new approaches, challenge existing knowledge boundaries and design novel solutions to solve problems.
- 3. Identify, define, and deal with complex problems pertinent to the future professional practice or daily life through logical, analytical and critical thinking.
- 4. Communicate effectively (both orally and in writing) with a wide range of audiences, across a range of professional and personal contexts, in English and Pilipino.
- 5. Identify own learning needs for professional or personal development; demonstrate an eagerness to take up opportunities for learning new things as well as the ability to learn effectively on their own.
- 6. Function effectively both as a leader and as a member of a team; motivate and lead a team to work towards goal; work collaboratively with other team members; as well as connect and interact socially and effectively with diverse culture.
- 7. Demonstrate an awareness and understanding of global issues and willingness to work, interact effectively and show sensitivity to cultural diversity.
- 8. Demonstrate an awareness of their social and national responsibility; engage in activities that contribute to the betterment of the society; and behave ethically and responsibly in social, professional and work environments.

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### **Program Outcomes**

- 1. Ability to analyze complex computing problems and to apply principles of computing and other relevant disciplines to identify solutions.
- 2. Ability to design, implement, and evaluate computing-based solutions to meet a given set of computing requirements in the context of the program's discipline.
- 3. Ability to communicate effectively in a variety of professional contexts.
- 4. Ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- 5. Ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- 6. Ability to use systemic approaches to select, develop, apply, integrate, and administer secure computing technologies to accomplish user goals.

## **Curriculum Components**

| Courses   | Units | Total    |  |
|---|-------|----------|--|
| A. General Education Courses (CMO No. 20, s 2013 & CMO No. 20, s 2013 & |       |          |  |
| Mathematics in the Modern World   | 3     |          |  |
| Art Appreciation  | 3     |          |  |
| Kontekstwalisadong Komunikasyon sa Filipino   | 3     |          |  |
| The Life and Works of Rizal   | 3     |          |  |
| The Contemporary World  | 3     |          |  |
| Filipino sa Iba't Ibang Disiplina   | 3     | 36 units |  |
| Readings in Philippine History  | 3     |          |  |
| Science, Technology and Society   | 3     |          |  |
| ASEAN Literature  | 3     |          |  |
| Purposive Communication   | 3     |          |  |
| Understanding the Self  | 3     |          |  |
| Ethics  | 3     |          |  |
| B. Common Courses   |       |          |  |
| Introduction to Computing   | 3     |          |  |
| Computer Programming  | 3     |          |  |
| Advance Computer Programming  | 3     | 18 units |  |
| Data Structures and Algorithms  | 3     |          |  |
| Information Management  | 3     |          |  |
| Application Development and Emerging Technologies   | 3     |          |  |
| C. Professional Courses   |       |          |  |
| Human-computer interaction  | 3     | 60       |  |
| Information Assurance and Security  | 3     | 69 units |  |
| Advanced Information Assurance and Security   | 3     |          |  |

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| Database Management System                       | 3 |          |
|--|---|----------|
| Advanced Database Management System              | 3 |          |
| Integrative Programming and Technologies         | 3 |          |
| Computer Networking 1                            | 3 |          |
| Computer Networking 2                            | 3 |          |
| System Administration and Maintenance            | 3 |          |
| System Integration and Architecture              | 3 |          |
| Social Issues and Professional Practice          | 3 |          |
| Capstone Project 1                               | 3 |          |
| Capstone Project 2                               | 3 |          |
| Internship Training                              | 6 |          |
| Technopreneurship                                | 3 |          |
| IT Project Management                            | 3 |          |
| System Quality Assurance                         | 3 |          |
| System Analysis and Design                       | 3 |          |
| Web systems and Technologies                     | 3 |          |
| Advanced System Integration and Architecture     | 3 |          |
| Platform Technologies                            | 3 |          |
| Object-Oriented Programming                      | 3 |          |
| D. Professional Electives (Choice of 1 Track)    |   |          |
| Network Technology Track                         |   |          |
| Computer Networking 3                            | 3 |          |
| Internet of Things (IoT)                         | 3 |          |
| Computer Networking 4                            | 3 |          |
| Cloud Computing                                  | 3 |          |
| Cybersecurity                                    | 3 |          |
| Business Analytics Track                         |   |          |
| Fundamentals of Business Analytics               | 3 | 15 units |
| Fundamentals of Analytics Modeling               | 3 | 15 umts  |
| Fundamentals of Enterprise Data Management       | 3 |          |
| Analytics Techniques & Tools                     | 3 |          |
| Analytics Application                            | 3 |          |
| Service Management Track                         |   |          |
| Fundamentals of Business Process Outsourcing 101 | 3 |          |
| Business Communication                           | 3 |          |
| Fundamentals of Business Process Outsourcing 102 | 3 |          |
| Service Culture                                  | 3 |          |

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| Principles of System Thinking                      | 3 |          |
|--|---|----------|
| E. Additional Math and Science Requirements        |   |          |
| Linear Algebra                                     | 3 |          |
| Discrete Mathematics                               | 3 | 15 units |
| Calculus Based Physics                             | 3 | 15 umis  |
| Data Analysis                                      | 3 |          |
| Environmental Sciences                             | 3 |          |
| F. Mandated Courses                                |   |          |
| PATHFit 1: Movement Competency Training            | 2 |          |
| PATHFit 2: Exercise-based Fitness Activities       | 2 | 14 units |
| PATHFit 3: Traditional and Recreational Games      | 2 | 14 units |
| PATHFit 4: Team Sports (Basketball and Volleyball) | 2 |          |
| NSTP 1 and 2                                       | 6 |          |

| SUMMARY                                  |                 |  |  |  |  |  |
|--|-----------------|--|--|--|--|--|
| Courses                                  | Number of Units |  |  |  |  |  |
| General Education                        | 36              |  |  |  |  |  |
| Common Courses                           | 18              |  |  |  |  |  |
| Professional Courses                     | 69              |  |  |  |  |  |
| Professional Electives                   | 15              |  |  |  |  |  |
| Additional Math and Science Requirements | 15              |  |  |  |  |  |
| Mandated Courses                         | 14              |  |  |  |  |  |
| TOTAL                                    | 167             |  |  |  |  |  |



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# **College of Informatics and Computing Sciences**

# **PROGRAM OF STUDY (Network Technology Track)**

|           | FIRST YEAR                                  |       |     |     |              |
|-----------|---|-------|-----|-----|--------------|
|           | FIRST SEMESTER                              |       |     |     |              |
| Code      | Course Title                                | Units | Lec | Lab | Prerequisite |
| IT 111    | Introduction to Computing                   | 3     | 2   | 3   | -            |
| GEd 102   | Mathematics in the Modern World             | 3     | 3   | -   | -            |
| GEd 108   | Art Appreciation                            | 3     | 3   | -   | -            |
| FILI 101  | Kontekstwalisadong Komunikasyon sa Filipino | 3     | 3   | -   | -            |
| PATHFit 1 | Movement Competency Training                | 2     | 2   | -   | -            |
| NSTP 111  | National Service Training Program 1         | 3     | 3   | -   | -            |
| GEd 103   | The Life and Works of Rizal                 | 3     | 3   | -   | -            |
| GEd 104   | The Contemporary World                      | 3     | 3   | -   | -            |
|           | TOTAL                                       | 23    | 22  | 3   |              |

|           | FIRST YEAR                          |       |     |     |              |
|-----------|-------------------------------------|-------|-----|-----|--------------|
|           | SECOND SEMESTER                     |       |     |     |              |
| Code      | Course Title                        | Units | Lec | Lab | Prerequisite |
| CS 111    | Computer Programming                | 3     | 2   | 3   | IT 111       |
| CS 131    | Data Structures and Algorithms      | 3     | 2   | 3   | IT 111       |
| MATH 111  | Linear Algebra                      | 3     | 3   | ı   | GEd 102      |
| FILI 102  | Filipino sa Iba't Ibang Disiplina   | 3     | 3   | ı   | -            |
| GEd 105   | Readings in Philippine History      | 3     | 3   | ı   | -            |
| GEd 109   | Science, Technology and Society     | 3     | 3   | ı   | -            |
| PATHFit 2 | Exercise-Based Fitness Activities   | 2     | 2   | -   | PATHFit 1    |
| NSTP 121  | National Service Training Program 2 | 3     | 3   |     | NSTP 111     |
|           | TOTAL                               | 23    | 21  | 6   |              |

|           | SECOND YEAR                        |       |     |     |                 |
|-----------|------------------------------------|-------|-----|-----|-----------------|
|           | FIRST SEMESTER                     |       |     |     |                 |
| Code      | Course Title                       | Units | Lec | Lab | Prerequisite    |
| CS 121    | Advanced Computer Programming      | 3     | 2   | 3   | CS 111          |
| IT 211    | Database Management System         | 3     | 2   | 3   | CS 111          |
| CS 211    | Object-Oriented Programming        | 3     | 2   | 3   | CS 111, CS 131  |
| LITR 102  | ASEAN Literature                   | 3     | 3   | -   | -               |
| CpE 405   | Discrete Mathematics               | 3     | 3   | -   | MATH 111        |
| PHY 101   | Calculus Based Physics             | 3     | 2   | 3   | MATH 111        |
| IT 212    | Computer Networking 1              | 3     | 2   | 3   | IT 111          |
| PATHFit 3 | Traditional and Recreational Games | 2     | 2   | -   | PATHFit 1 and 2 |
|           | TOTAL                              | 23    | 18  | 15  |                 |



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|           | SECOND YEAR                             |       |     |     |                 |
|-----------|---|-------|-----|-----|-----------------|
|           | SECOND SEMESTER                         | 2     |     |     |                 |
| Code      | Course Title                            | Units | Lec | Lab | Prerequisite    |
| IT 221    | Information Management                  | 3     | 2   | 3   | IT 111          |
| IT 223    | Computer Networking 2                   | 3     | 2   | 3   | IT 212          |
| IT 222    | Advanced Database Management System     | 3     | 2   | 3   | IT 211          |
| MATH 408  | Data Analysis                           | 3     | 3   | -   | MATH 111        |
| ES 101    | Environmental Sciences                  | 3     | 2   | 3   | PHY 101         |
| GEd 106   | Purposive Communication                 | 3     | 3   | -   | -               |
| GEd 101   | Understanding the Self                  | 3     | 3   | -   | -               |
| PATHFit 4 | Team Sports (Basketball and Volleyball) | 2     | 2   | -   | PATHFit 1 and 2 |
|           | TOTAL                                   | 23    | 19  | 12  |                 |

|         | THIRD YEAR                             |       |     |     |               |
|---------|--|-------|-----|-----|---------------|
|         | FIRST SEMESTER                         |       |     |     |               |
| Code    | Course Title                           | Units | Lec | Lab | Prerequisite  |
| IT 311  | Systems Administration and Maintenance | 3     | 2   | 3   | IT 221,IT 222 |
| IT 312  | System Integration and Architecture    | 3     | 2   | 3   | CS 131        |
| NTT 401 | Computer Networking 3                  | 3     | 2   | 3   | IT 223        |
| NTT 402 | Internet of Things (IoT)               | 3     | 2   | 3   | IT 223        |
| IT 313  | System Analysis and Design             | 3     | 2   | 3   | IT 222        |
| IT 314  | Web Systems and Technologies           | 3     | 2   | 3   | CS 211        |
| GEd 107 | Ethics                                 | 3     | 3   | 1   | -             |
|         | TOTAL                                  | 21    | 15  | 18  |               |

|         | THIRD YEAR                                   |       |     |     |                               |
|---------|--|-------|-----|-----|-------------------------------|
|         | SECOND SEMESTER                              |       |     |     |                               |
| Code    | Course Title                                 | Units | Lec | Lab | Prerequisite                  |
| IT 321  | Human-computer interaction                   | 3     | 3   | -   | IT 314                        |
| NTT 403 | Computer Networking 4                        | 3     | 2   | 3   | NTT 401                       |
| NTT 404 | Cloud Computing                              | 3     | 2   | 3   | NTT 402                       |
| IT 322  | Advanced System Integration and Architecture | 3     | 2   | 3   | IT 312                        |
| IT 323  | Information Assurance and Security           | 3     | 2   | 3   | IT 223                        |
| IT 324  | Capstone Project 1                           | 3     | 3   | -   | 3 <sup>rd</sup> Year Standing |
| IT 325  | IT Project Management                        | 3     | 3   | -   | IT 313                        |
|         | TOTAL  | 21    | 17  | 12  |                               |



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|        | THIRD YEAR  |       |     |     |              |
|--------|---|-------|-----|-----|--------------|
|        | MIDTERM   |       |     |     |              |
| Code   | Course Title                                      | Units | Lec | Lab | Prerequisite |
| IT 331 | Application Development and Emerging Technologies | 3     | 2   | 3   | IT 321       |
| IT 332 | Integrative Programming and Technologies          | 3     | 2   | 3   | IT 314       |
|        | TOTAL   | 6     | 4   | 6   |              |

|          | FOURTH YEAR                                 |       |     |     |              |
|----------|---|-------|-----|-----|--------------|
|          | FIRST SEMESTER                              |       |     |     |              |
| Code     | Course Title                                | Units | Lec | Lab | Prerequisite |
| CS 423   | Social Issues and Professional Practice     | 3     | 3   | -   | -            |
| IT 411   | Capstone Project 2                          | 3     | 3   | -   | IT 324       |
| NTT 405  | Cybersecurity                               | 3     | 2   | 3   | NTT 403      |
| ENGG 405 | Technopreneurship                           | 3     | 3   | -   | -            |
| IT 413   | Advanced Information Assurance and Security | 3     | 2   | 3   | IT 323       |
| IT 414   | System Quality Assurance                    | 3     | 2   | 3   | IT 325       |
| IT 412   | Platform Technologies                       | 3     | 3   | -   | IT 332       |
|          | TOTAL                                       | 21    | 18  | 9   |              |

|                 | FOURTH YEAR         |       |     |     |                               |  |  |  |
|-----------------|---------------------|-------|-----|-----|-------------------------------|--|--|--|
| SECOND SEMESTER |                     |       |     |     |                               |  |  |  |
| Code            | Course Title        | Units | Lec | Lab | Prerequisite                  |  |  |  |
| IT 421          | Internship Training | 6     | -   | 500 | 4 <sup>th</sup> Year Standing |  |  |  |
|                 | TOTAL               | 6     | -   | 500 |                               |  |  |  |



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# **College of Informatics and Computing Sciences**

# **PROGRAM OF STUDY (Business Analytics Track)**

| FIRST YEAR |   |       |     |     |              |  |  |  |  |
|------------|---|-------|-----|-----|--------------|--|--|--|--|
|            | FIRST SEMESTER                              |       |     |     |              |  |  |  |  |
| Code       | Course Title                                | Units | Lec | Lab | Prerequisite |  |  |  |  |
| IT 111     | Introduction to Computing                   | 3     | 2   | 3   | -            |  |  |  |  |
| GEd 102    | Mathematics in the Modern World             | 3     | 3   | -   | -            |  |  |  |  |
| GEd 108    | Art Appreciation                            | 3     | 3   | -   | -            |  |  |  |  |
| FILI 101   | Kontekstwalisadong Komunikasyon sa Filipino | 3     | 3   | -   | -            |  |  |  |  |
| PATHFit 1  | Movement Competency Training                | 2     | 2   | -   | •            |  |  |  |  |
| NSTP 111   | National Service Training Program 1         | 3     | 3   | -   | -            |  |  |  |  |
| GEd 103    | The Life and Works of Rizal                 | 3     | 3   | -   | -            |  |  |  |  |
| GEd 104    | The Contemporary World                      | 3     | 3   | -   | -            |  |  |  |  |
|            | TOTAL                                       | 23    | 22  | 3   |              |  |  |  |  |

|           | FIRST YEAR                          |       |     |     |              |  |  |  |  |
|-----------|-------------------------------------|-------|-----|-----|--------------|--|--|--|--|
|           | SECOND SEMESTER                     |       |     |     |              |  |  |  |  |
| Code      | Course Title                        | Units | Lec | Lab | Prerequisite |  |  |  |  |
| CS 111    | Computer Programming                | 3     | 2   | 3   | IT 111       |  |  |  |  |
| CS 131    | Data Structures and Algorithms      | 3     | 2   | 3   | IT 111       |  |  |  |  |
| MATH 111  | Linear Algebra                      | 3     | 3   | -   | GEd 102      |  |  |  |  |
| FILI 102  | Filipino sa Iba't Ibang Disiplina   | 3     | 3   | -   | -            |  |  |  |  |
| GEd 105   | Readings in Philippine History      | 3     | 3   | -   | -            |  |  |  |  |
| GEd 109   | Science, Technology and Society     | 3     | 3   | -   | -            |  |  |  |  |
| PATHFit 2 | Exercise-Based Fitness Activities   | 2     | 2   | -   | PATHFit 1    |  |  |  |  |
| NSTP 121  | National Service Training Program 2 | 3     | 3   | -   | NSTP 111     |  |  |  |  |
|           | TOTAL                               | 23    | 21  | 6   |              |  |  |  |  |

| SECOND YEAR |                                    |       |     |     |                 |  |  |  |  |
|-------------|------------------------------------|-------|-----|-----|-----------------|--|--|--|--|
|             | FIRST SEMESTER                     |       |     |     |                 |  |  |  |  |
| Code        | Course Title                       | Units | Lec | Lab | Prerequisite    |  |  |  |  |
| CS 121      | Advanced Computer Programming      | 3     | 2   | 3   | CS 111          |  |  |  |  |
| IT 211      | Database Management System         | 3     | 2   | 3   | CS 111          |  |  |  |  |
| CS 211      | Object-Oriented Programming        | 3     | 2   | 3   | CS 111, CS 131  |  |  |  |  |
| LITR 102    | ASEAN Literature                   | 3     | 3   | -   | -               |  |  |  |  |
| CpE 405     | Discrete Mathematics               | 3     | 3   | -   | MATH 111        |  |  |  |  |
| PHY 101     | Calculus Based Physics             | 3     | 2   | 3   | MATH 111        |  |  |  |  |
| IT 212      | Computer Networking 1              | 3     | 2   | 3   | IT 111          |  |  |  |  |
| PATHFit 3   | Traditional and Recreational Games | 2     | 2   | -   | PATHFit 1 and 2 |  |  |  |  |
|             | TOTAL                              | 23    | 18  | 15  |                 |  |  |  |  |



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|          | SECOND YEAR                             |       |     |     |                 |  |  |  |  |
|----------|---|-------|-----|-----|-----------------|--|--|--|--|
|          | SECOND SEMESTER                         |       |     |     |                 |  |  |  |  |
| Code     | Course Title                            | Units | Lec | Lab | Prerequisite    |  |  |  |  |
| IT 221   | Information Management                  | 3     | 2   | 3   | IT 111          |  |  |  |  |
| IT 223   | Computer Networking 2                   | 3     | 2   | 3   | IT 212          |  |  |  |  |
| IT 222   | Advanced Database Management System     | 3     | 2   | 3   | IT 211          |  |  |  |  |
| MATH 408 | Data Analysis                           | 3     | 3   | ı   | MATH 111        |  |  |  |  |
| ES 101   | Environmental Sciences                  | 3     | 2   | 3   | PHY 101         |  |  |  |  |
| GEd 106  | Purposive Communication                 | 3     | 3   | -   | -               |  |  |  |  |
| GEd 101  | Understanding the Self                  | 3     | 3   | -   | -               |  |  |  |  |
| PATHFit  |   |       |     |     |                 |  |  |  |  |
| 4        | Team Sports (Basketball and Volleyball) | 2     | 2   | ı   | PATHFit 1 and 2 |  |  |  |  |
|          | TOTAL                                   | 23    | 19  | 12  |                 |  |  |  |  |

|         | THIRD YEAR                             |       |     |     |               |  |  |  |  |
|---------|--|-------|-----|-----|---------------|--|--|--|--|
|         | FIRST SEMESTER                         |       |     |     |               |  |  |  |  |
| Code    | Course Title                           | Units | Lec | Lab | Prerequisite  |  |  |  |  |
| IT 311  | Systems Administration and Maintenance | 3     | 2   | 3   | IT 221,IT 222 |  |  |  |  |
| IT 312  | System Integration and Architecture    | 3     | 2   | 3   | CS 131        |  |  |  |  |
| BAT 401 | Fundamentals of Business Analytics     | 3     | 2   | 3   | IT 221,IT 222 |  |  |  |  |
| BAT 402 | Fundamentals of Analytics Modeling     | 3     | 2   | 3   | IT 221,IT 222 |  |  |  |  |
| IT 313  | System Analysis and Design             | 3     | 2   | 3   | IT 222        |  |  |  |  |
| IT 314  | Web Systems and Technologies           | 3     | 2   | 3   | CS 211        |  |  |  |  |
| GEd 107 | Ethics                                 | 3     | 3   | -   | -             |  |  |  |  |
|         | TOTAL                                  | 21    | 15  | 18  |               |  |  |  |  |

|         | THIRD YEAR                                   |       |     |     |                               |  |  |  |
|---------|--|-------|-----|-----|-------------------------------|--|--|--|
|         | SECOND SEMESTER                              |       |     |     |                               |  |  |  |
| Code    | Course Title                                 | Units | Lec | Lab | Prerequisite                  |  |  |  |
| IT 321  | Human-computer interaction                   | 3     | 3   | -   | IT 314                        |  |  |  |
| BAT 403 | Fundamentals of Enterprise Data Management   | 3     | 2   | 3   | BAT 401                       |  |  |  |
| BAT 404 | Analytics Techniques & Tools                 | 3     | 2   | 3   | BAT 402                       |  |  |  |
| IT 322  | Advanced System Integration and Architecture | 3     | 2   | 3   | IT 312                        |  |  |  |
| IT 323  | Information Assurance and Security           | 3     | 2   | 3   | IT 223                        |  |  |  |
| IT 324  | Capstone Project 1                           | 3     | 3   | -   | 3 <sup>rd</sup> Year Standing |  |  |  |
| IT 325  | IT Project Management                        | 3     | 3   | -   | IT 313                        |  |  |  |
|         | TOTAL  | 21    | 17  | 12  |                               |  |  |  |



# **The National Engineering University**

## **Mabini Campus**

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| THIRD YEAR |   |       |     |     |              |  |  |
|------------|---|-------|-----|-----|--------------|--|--|
| MIDTERM    |   |       |     |     |              |  |  |
| Code       | Course Title                                      | Units | Lec | Lab | Prerequisite |  |  |
| IT 331     | Application Development and Emerging Technologies | 3     | 2   | 3   | IT 321       |  |  |
| IT 332     | Integrative Programming and Technologies          | 3     | 2   | 3   | IT 314       |  |  |
|            | TOTAL   | 6     | 4   | 6   |              |  |  |

|          | FOURTH YEAR                                 |       |     |     |              |  |  |  |
|----------|---|-------|-----|-----|--------------|--|--|--|
|          | FIRST SEMESTER                              |       |     |     |              |  |  |  |
| Code     | Course Title                                | Units | Lec | Lab | Prerequisite |  |  |  |
| CS 423   | Social Issues and Professional Practice     | 3     | 3   | ı   | -            |  |  |  |
| IT 411   | Capstone Project 2                          | 3     | 3   | ı   | IT 324       |  |  |  |
| BAT 405  | Analytics Application                       | 3     | 2   | 3   | BAT 404      |  |  |  |
| ENGG 405 | Technopreneurship                           | 3     | 3   | ı   | -            |  |  |  |
| IT 413   | Advanced Information Assurance and Security | 3     | 2   | 3   | IT 323       |  |  |  |
| IT 414   | System Quality Assurance                    | 3     | 2   | 3   | IT 325       |  |  |  |
| IT 412   | Platform Technologies                       | 3     | 3   | -   | IT 332       |  |  |  |
|          | TOTAL                                       | 21    | 18  | 9   |              |  |  |  |

|        | FOURTH YEAR         |       |     |     |                               |  |  |  |
|--------|---------------------|-------|-----|-----|-------------------------------|--|--|--|
|        | SECOND SEMESTER     |       |     |     |                               |  |  |  |
| Code   | Course Title        | Units | Lec | Lab | Prerequisite                  |  |  |  |
| IT 421 | Internship Training | 6     | -   | 500 | 4 <sup>th</sup> Year Standing |  |  |  |
|        | TOTAL               | 6     | -   | 500 |                               |  |  |  |



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# **College of Informatics and Computing Sciences**

# **PROGRAM OF STUDY (Service Management Track)**

| FIRST YEAR |   |       |     |     |              |  |  |  |
|------------|---|-------|-----|-----|--------------|--|--|--|
|            | FIRST SEMESTER                              |       |     |     |              |  |  |  |
| Code       | Course Title                                | Units | Lec | Lab | Prerequisite |  |  |  |
| IT 111     | Introduction to Computing                   | 3     | 2   | 3   | -            |  |  |  |
| GEd 102    | Mathematics in the Modern World             | 3     | 3   | -   | -            |  |  |  |
| GEd 108    | Art Appreciation                            | 3     | 3   | -   | -            |  |  |  |
| FILI 101   | Kontekstwalisadong Komunikasyon sa Filipino | 3     | 3   | -   | -            |  |  |  |
| PATHFit 1  | Movement Competency Training                | 2     | 2   | -   | -            |  |  |  |
| NSTP 111   | National Service Training Program 1         | 3     | 3   | -   | -            |  |  |  |
| GEd 103    | The Life and Works of Rizal                 | 3     | 3   | -   | -            |  |  |  |
| GEd 104    | The Contemporary World                      | 3     | 3   | -   | -            |  |  |  |
|            | TOTAL                                       | 23    | 22  | 3   |              |  |  |  |

| FIRST YEAR |                                     |       |     |     |              |  |  |  |  |
|------------|-------------------------------------|-------|-----|-----|--------------|--|--|--|--|
|            | SECOND SEMESTER                     |       |     |     |              |  |  |  |  |
| Code       | Course Title                        | Units | Lec | Lab | Prerequisite |  |  |  |  |
| CS 111     | Computer Programming                | 3     | 2   | 3   | IT 111       |  |  |  |  |
| CS 131     | Data Structures and Algorithms      | 3     | 2   | 3   | IT 111       |  |  |  |  |
| MATH 111   | Linear Algebra                      | 3     | 3   | ı   | GEd 102      |  |  |  |  |
| FILI 102   | Filipino sa Iba't Ibang Disiplina   | 3     | 3   | ı   | -            |  |  |  |  |
| GEd 105    | Readings in Philippine History      | 3     | 3   | ı   | -            |  |  |  |  |
| GEd 109    | Science, Technology and Society     | 3     | 3   |     | -            |  |  |  |  |
| PATHFit 2  | Exercise-Based Fitness Activities   | 2     | 2   | - 1 | PATHFit 1    |  |  |  |  |
| NSTP 112   | National Service Training Program 2 | 3     | 3   | - 1 | NSTP 111     |  |  |  |  |
|            | TOTAL                               | 23    | 21  | 6   |              |  |  |  |  |

| SECOND YEAR |                                    |       |     |     |                 |  |  |
|-------------|------------------------------------|-------|-----|-----|-----------------|--|--|
|             | FIRST SEMESTER                     |       |     |     |                 |  |  |
| Code        | Course Title                       | Units | Lec | Lab | Prerequisite    |  |  |
| CS 121      | Advanced Computer Programming      | 3     | 2   | 3   | CS 111          |  |  |
| IT 211      | Database Management System         | 3     | 2   | 3   | CS 111          |  |  |
| CS 211      | Object-Oriented Programming        | 3     | 2   | 3   | CS 111, CS 131  |  |  |
| LITR 102    | ASEAN Literature                   | 3     | 3   | -   | -               |  |  |
| CpE 405     | Discrete Mathematics               | 3     | 3   | -   | MATH 111        |  |  |
| PHY 101     | Calculus Based Physics             | 3     | 2   | 3   | MATH 111        |  |  |
| IT 212      | Computer Networking 1              | 3     | 2   | 3   | IT 111          |  |  |
| PATHFit 3   | Traditional and Recreational Games | 2     | 2   | -   | PATHFit 1 and 2 |  |  |
|             | TOTAL                              | 23    | 18  | 15  |                 |  |  |

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# Republic of the Philippines BATANGAS STATE UNIVERSITY

# **The National Engineering University**

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|                 | SECOND YEAR                             |       |     |     |                 |  |
|-----------------|---|-------|-----|-----|-----------------|--|
| SECOND SEMESTER |   |       |     |     |                 |  |
| Code            | Course Title                            | Units | Lec | Lab | Prerequisite    |  |
| IT 221          | Information Management                  | 3     | 2   | 3   | IT 111          |  |
| IT 223          | Computer Networking 2                   | 3     | 2   | 3   | IT 212          |  |
| IT 222          | Advanced Database Management System     | 3     | 2   | 3   | IT 211          |  |
| MATH 408        | Data Analysis                           | 3     | 3   | ı   | MATH 111        |  |
| ES 101          | Environmental Sciences                  | 3     | 2   | 3   | PHY 101         |  |
| GEd 106         | Purposive Communication                 | 3     | 3   | -   | -               |  |
| GEd 101         | Understanding the Self                  | 3     | 3   | ı   | -               |  |
| PATHFit         |   |       |     |     |                 |  |
| 4               | Team Sports (Basketball and Volleyball) | 2     | 2   | -   | PATHFit 1 and 2 |  |
|                 | TOTAL                                   | 23    | 19  | 12  |                 |  |

| THIRD YEAR     |  |       |     |     |               |  |
|----------------|--|-------|-----|-----|---------------|--|
| FIRST SEMESTER |  |       |     |     |               |  |
| Code           | Course Title                                     | Units | Lec | Lab | Prerequisite  |  |
| IT 311         | Systems Administration and Maintenance           | 3     | 2   | 3   | IT 221,IT 222 |  |
| IT 312         | System Integration and Architecture              | 3     | 2   | 3   | CS 131        |  |
| SMT 401        | Fundamentals of Business Process Outsourcing 101 | 3     | 2   | 3   | IT 221        |  |
| SMT 402        | Business Communication                           | 3     | 2   | 3   | IT 221        |  |
| IT 313         | System Analysis and Design                       | 3     | 2   | 3   | IT 222        |  |
| IT 314         | Web Systems and Technologies                     | 3     | 2   | 3   | CS 211        |  |
| GEd 107        | Ethics   | 3     | 3   | -   | -             |  |
|                | TOTAL  | 21    | 15  | 18  |               |  |

| THIRD YEAR |  |    |    |    |                               |  |  |  |
|------------|--|----|----|----|-------------------------------|--|--|--|
|            | SECOND SEMESTER                                  |    |    |    |                               |  |  |  |
| Code       | Code Course Title Units Lec Lab Prerequisite     |    |    |    |                               |  |  |  |
| IT 321     | Human-computer interaction                       | 3  | 3  | -  | IT 314                        |  |  |  |
| SMT 403    | Fundamentals of Business Process Outsourcing 102 | 3  | 2  | 3  | SMT 401                       |  |  |  |
| SMT 404    | Service Culture                                  | 3  | 2  | 3  | SMT 401                       |  |  |  |
| IT 322     | Advanced System Integration and Architecture     | 3  | 2  | 3  | IT 312                        |  |  |  |
| IT 323     | Information Assurance and Security               | 3  | 2  | 3  | IT 223                        |  |  |  |
| IT 324     | Capstone Project 1                               | 3  | 3  | -  | 3 <sup>rd</sup> Year Standing |  |  |  |
| IT 325     | IT Project Management                            | 3  | 3  | -  | IT 313                        |  |  |  |
|            | TOTAL  | 21 | 17 | 12 |                               |  |  |  |



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| THIRD YEAR |   |       |     |     |              |  |
|------------|---|-------|-----|-----|--------------|--|
| MIDTERM    |   |       |     |     |              |  |
| Code       | Course Title                                      | Units | Lec | Lab | Prerequisite |  |
| IT 331     | Application Development and Emerging Technologies | 3     | 2   | 3   | IT 321       |  |
| IT 332     | Integrative Programming and Technologies          | 3     | 2   | 3   | IT 314       |  |
|            | TOTAL   | 6     | 4   | 6   |              |  |

| FOURTH YEAR |  |    |    |   |         |  |  |  |
|-------------|--|----|----|---|---------|--|--|--|
|             | FIRST SEMESTER                               |    |    |   |         |  |  |  |
| Code        | Code Course Title Units Lec Lab Prerequisite |    |    |   |         |  |  |  |
| CS 423      | Social Issues and Professional Practice      | 3  | 3  | - | -       |  |  |  |
| IT 411      | Capstone Project 2                           | 3  | 3  | - | IT 324  |  |  |  |
| SMT 405     | Principles of System Thinking                | 3  | 2  | 3 | SMT 403 |  |  |  |
| ENGG 405    | Technopreneurship                            | 3  | 3  | - | -       |  |  |  |
| IT 413      | Advanced Information Assurance and Security  | 3  | 2  | 3 | IT 323  |  |  |  |
| IT 414      | System Quality Assurance                     | 3  | 2  | 3 | IT 325  |  |  |  |
| IT 412      | Platform Technologies                        | 3  | 3  | - | IT 332  |  |  |  |
|             | TOTAL  | 21 | 18 | 9 |         |  |  |  |

| FOURTH YEAR     |                     |       |     |     |                               |
|-----------------|---------------------|-------|-----|-----|-------------------------------|
| SECOND SEMESTER |                     |       |     |     |                               |
| Code            | Course Title        | Units | Lec | Lab | Prerequisite                  |
| IT 421          | Internship Training | 6     | -   | 500 | 4 <sup>th</sup> Year Standing |
|                 | TOTAL               | 6     | -   | 500 |                               |