



### CREDIT BASED CURRICULUM

(Pursuant to the decision: 3000/QĐ-DHNL-DT, November -24-2014 of President)

Credit based Training System: Formal Undergraduate (Full - time)  
Faculty : Faculty of Environment and Natural Resources  
Discipline : Cartography Major:Geographic Information System  
Minimum credits : 134 Credits  
Minimum GPA: 2.0

| No  | Module | English subjects                            | Credits     | Total Number | Theory       | Practice     | Internship | Project    | Thesis     | Year | SM | Prior study      | Prerequisite | Concurrent |
|---|--------|---|-------------|--------------|--------------|--------------|------------|------------|------------|------|----|------------------|--------------|------------|
| <b>I. Fundamental knowledge :</b>   |        |   |             |              |              |              |            |            |            |      |    |                  |              |            |
| <i>I.1 Required subjects</i>  |        |   |             |              |              |              |            |            |            |      |    |                  |              |            |
| 1   | 200106 | Phylosophy of Marxism and Leninism          | 5.0         | 75.0         | 75.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 2   | 202108 | Advanced Mathematics A1                     | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 3   | 202109 | Advanced Mathematics A2                     | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 4   | 202201 | General Physics 1                           | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 5   | 202501 | Physical Education 1                        | 1.0         | 45.0         | 0.0          | 45.0         | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 6   | 213603 | English 1                                   | 4.0         | 60.0         | 60.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 7   | 214103 | General Informatics                         | 3.0         | 60.0         | 30.0         | 30.0         | 0          | 0.0        | 0.0        | 1    | 1  |                  |              |            |
| 8   | 200104 | History of the Communist's Party of Vietnam | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 2  |                  |              |            |
| 9   | 200201 | Military training (theory)                  | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 2  |                  |              |            |
| 10  | 200202 | Military training (practice)                | 3.0         | 90.0         | 0.0          | 90.0         | 0          | 0.0        | 0.0        | 1    | 2  |                  |              |            |
| 11  | 202110 | Advanced Mathematics A3                     | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 2  | 202108<br>202109 |              |            |
| 12  | 202202 | Physics Experiments 1                       | 1.0         | 30.0         | 0.0          | 30.0         | 0          | 0.0        | 0.0        | 1    | 2  |                  |              |            |
| 13  | 202502 | Physical Education 2                        | 1.0         | 45.0         | 0.0          | 45.0         | 0          | 0.0        | 0.0        | 1    | 2  |                  |              |            |
| 14  | 213604 | English 2                                   | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 1    | 2  | 213603           |              |            |
| 15  | 200107 | Ho Chi Minh Ideology                        | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 1  |                  |              |            |
| 16  | 202121 | Probability and Statistics                  | 3.0         | 45.0         | 45.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 1  | 202110           |              |            |
| 17  | 202622 | General Law                                 | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 1  |                  |              |            |
| <b>Total</b>  |        |   | <b>45.0</b> | <b>810.0</b> | <b>570.0</b> | <b>240.0</b> | <b>0</b>   | <b>0.0</b> | <b>0.0</b> |      |    |                  |              |            |
| <i>I.2 Elective subject - completed 0101/accumulated at least 2 credits : 4 credits</i> |        |   |             |              |              |              |            |            |            |      |    |                  |              |            |
| 1   | 202609 | Logics                                      | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 1  |                  |              |            |
| 2   | 202621 | Introduction to sociology                   | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 1  |                  |              |            |
| 3   | 202605 | Basic Economic                              | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 2  |                  |              |            |
| 4   | 202616 | Introduction to Psychology                  | 2.0         | 30.0         | 30.0         | 0.0          | 0          | 0.0        | 0.0        | 2    | 2  |                  |              |            |



|   |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
|---|--------|---------------------------------------|------|-------|-------|-------|---|-----|-----|---|---|--------|--------|--|--|
| Total   |        |                                       | 8.0  | 120.0 | 120.0 | 0.0   | 0 | 0.0 | 0.0 |   |   |        |        |  |  |
| II. Fundamental specialized knowledge :   |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
| <i>II.1 Required subjects</i>   |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
| 1   | 212110 | Environmental Science                 | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 2 | 1 |        |        |  |  |
| 2   | 214321 | Basic Programming                     | 4.0  | 75.0  | 45.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 1 |        | 214103 |  |  |
| 3   | 218101 | Introduction to GIS                   | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 1 |        |        |  |  |
| 4   | 218103 | Fundamentals of Remote Sensing        | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 2 | 2 |        |        |  |  |
| 5   | 218105 | Spatial Database                      | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 2 | 218101 |        |  |  |
| 6   | 218202 | Spatial Statistics                    | 2.0  | 45.0  | 15.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 2 | 202121 |        |  |  |
| 7   | 218310 | Hydrography                           | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 2 |        |        |  |  |
| Total   |        |                                       | 19.0 | 360.0 | 210.0 | 150.0 | 0 | 0.0 | 0.0 |   |   |        |        |  |  |
| <i>II.2 Elective subject - completed 0201/accumulated at least 2 credits : 10 credits</i> |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
| 1   | 216202 | Meteorology                           | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 2 | 1 |        |        |  |  |
| 2   | 202625 | Physical Geography                    | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 2 | 2 |        |        |  |  |
| 3   | 208102 | Economic Geography                    | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 2 | 2 |        |        |  |  |
| 4   | 212340 | Soil pollution and Reclamation        | 2.0  | 45.0  | 15.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 5   | 212503 | Environment and Public Health         | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 6   | 212504 | Law and Environmental Policy          | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 7   | 212507 | Environmental Impact Assessment       | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 8   | 218201 | Applied Mathematics                   | 2.0  | 45.0  | 15.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 9   | 209302 | Land Evaluation                       | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 3 | 2 |        |        |  |  |
| 10  | 205111 | Forest Ecology                        | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 4 | 1 |        |        |  |  |
| 11  | 205221 | Environmental and Natural             | 3.0  | 45.0  | 45.0  | 0.0   | 0 | 0.0 | 0.0 | 4 | 1 |        |        |  |  |
| Total   |        |                                       | 24.0 | 405.0 | 315.0 | 90.0  | 0 | 0.0 | 0.0 |   |   |        |        |  |  |
| III. Specialized knowledge :  |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
| <i>III.1 Required subjects</i>  |        |                                       |      |       |       |       |   |     |     |   |   |        |        |  |  |
| 1   | 218102 | Basic GIS Programming                 | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 2 | 2 | 214321 |        |  |  |
| 2   | 218106 | Satellite Image Interpretation        | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 1 | 218103 |        |  |  |
| 3   | 218109 | Basic Spatial Analysis 1              | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 1 |        | 218101 |  |  |
| 4   | 218308 | Applied GIS                           | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 5   | 218309 | Natural Resources Conflict Management | 2.0  | 30.0  | 30.0  | 0.0   | 0 | 0.0 | 0.0 | 3 | 1 |        |        |  |  |
| 6   | 218107 | Practice of Remote Sensing            | 1.0  | 30.0  | 0.0   | 30.0  | 0 | 0.0 | 0.0 | 3 | 2 | 218106 |        |  |  |
| 7   | 218108 | Internet - Web GIS                    | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 2 | 218101 | 214103 |  |  |
| 8   | 218111 | Advanced Spatial Analysis             | 2.0  | 45.0  | 15.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 2 | 218109 |        |  |  |
| 9   | 218117 | GIS Analysis and Design               | 3.0  | 60.0  | 30.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 2 |        | 218101 |  |  |
| 10  | 218119 | Scientific Research Methodology       | 2.0  | 45.0  | 15.0  | 30.0  | 0 | 0.0 | 0.0 | 3 | 2 |        |        |  |  |