

**\* Honors Program in Environmental Science** (*Dated September 30<sup>th</sup>, 2015*)

**Total credits of the curriculum :** **156 credits**

- **General education knowledge:** **33 credits**

*(Not including physical education, military defense education and soft skills)*

- **Basic courses:** **6 credits**

- **Fundamental courses:** **29 credits**

- **Core courses:** **16 credits**

+ *required:* *13 credits*

+ *Elective:* *3/9 credits*

- **Advanced courses:** **72 credits**

+ *Required:* *47 credits*

+ *Elective:* *15 credits*

+ *Graduation thesis:* *10 credits*

## Available curriculum

| No.        | Code    | Subject   | Credits   | Credit hours |          |            | Prerequisite |
|------------|---------|---|-----------|--------------|----------|------------|--------------|
|            |         |   |           | Lecture      | Practice | Self-study |              |
| <b>I</b>   |         | <b>General education knowledge</b><br><i>(Not including subjects 11 - 13)</i> | <b>33</b> |              |          |            |              |
| 1          | PHI1004 | <i>Fundamental Principles of Marxism - Leninism 1</i>                         | 2         | 24           | 6        |            |              |
| 2          | PHI1005 | <i>Fundamental Principles of Marxism - Leninism 2</i>                         | 3         | 36           | 9        |            | PHI1004      |
| 3          | POL1001 | <i>Ho Chi Minh Ideology</i>   | 2         | 20           | 10       |            | PHI1005      |
| 4          | HIS1002 | <i>The Revolutionary Line of the Communist Party of Vietnam</i>               | 3         | 42           | 3        |            | POL1001      |
| 5          | INT1003 | <i>Introduction to Informatics 1</i>  | 2         | 10           | 20       |            |              |
| 6          | INT1005 | <i>Introduction to Informatics 3</i>  | 2         | 12           | 18       |            | INT1003      |
| 7          | FLF2101 | <i>General English 1</i>  | 4         | 16           | 40       | 4          |              |
| 8          | FLF2102 | <i>General English 2</i>  | 5         | 20           | 50       | 5          | FLF2101      |
| 9          | FLF2103 | <i>General English 3</i>  | 5         | 20           | 50       | 5          | FLF2102      |
| 10         | FLF2104 | <i>General English 4</i>  | 5         | 20           | 50       | 5          | FLF2103      |
| 11         |         | <i>Physical Education</i>   | 4         |              |          |            |              |
| 12         |         | <i>National Defence Education</i>   | 8         |              |          |            |              |
| 13         |         | Kỹ năng bổ trợ<br><i>Soft Skills</i>  | 3         |              |          |            |              |
| <b>II</b>  |         | <b>Basic courses</b>  | <b>6</b>  |              |          |            |              |
| 14         | HIS1056 | <i>Fundamentals of Vietnamese Culture</i>                                     | 3         | 42           | 3        |            |              |
| 15         | GEO1050 | <i>Earth and Life Sciences</i>  | 3         | 30           | 10       | 5          |              |
| <b>III</b> |         | <b>Fundamental courses</b>  | <b>29</b> |              |          |            |              |
| 16         | MAT1090 | <i>Linear Algebra</i>   | 3         | 30           | 15       |            |              |
| 17         | MAT1091 | <i>Calculus 1</i>   | 3         | 30           | 15       |            |              |
| 18         | MAT1092 | <i>Calculus 2</i>   | 3         | 30           | 15       |            | MAT1091      |
| 19         | MAT1101 | <i>Probability and Statistics</i>   | 3         | 27           | 18       |            | MAT1091      |
| 20         | PHY1100 | <i>Mechanics - Thermodynamics</i>   | 3         | 30           | 15       |            | MAT1091      |
| 21         | PHY1103 | <i>Electromagnetism - Optics</i>  | 3         | 30           | 15       |            | MAT1091      |

| No.         | Code    | Subject  | Credits    | Credit hours |          |            | Prerequisite                             |
|-------------|---------|--|------------|--------------|----------|------------|--|
|             |         |  |            | Lecture      | Practice | Self-study |  |
| 22          | CHE1080 | <i>General chemistry</i>                               | 3          | 30           | 15       |            |  |
| 23          | CHE1081 | <i>Organic Chemistry</i>                               | 3          | 30           | 15       |            | CHE1080                                  |
| 24          | CHE1057 | <i>Analytical chemistry</i>                            | 3          | 30           | 15       |            | CHE1080                                  |
| 25          | PHY1104 | <i>General Physics Practice</i>                        | 2          |              | 30       |            |  |
| <b>IV</b>   |         | <b>Core courses</b>                                    | <b>16</b>  |              |          |            |  |
| <b>IV.1</b> |         | <b>Required</b>  | <b>13</b>  |              |          |            |  |
| 26          | BIO1061 | <i>Basic Biology</i>                                   | 3          | 42           |          | 3          |  |
| 27          | EVS2301 | <i>Natural Resources</i>                               | 3          | 36           | 9        |            | EVS2303                                  |
| 28          | EVS2302 | <i>Fundamentals of Environmental Sciences</i>          | 3          | 36           | 9        |            | GEO1050                                  |
| 29          | EVS2303 | <i>Principles of soil, water, and air environments</i> | 4          | 45           | 15       |            | CHE1080<br>BIO1061<br>EVS2302            |
| <b>IV.2</b> |         | <b>Elective</b>  | <b>3/9</b> |              |          |            |  |
| 30          | EVS2305 | <i>Climate Change</i>                                  | 3          | 36           | 9        |            | EVS2303                                  |
| 31          | EVS2306 | <i>Environmental Geology</i>                           | 3          | 36           | 9        |            | EVS2303                                  |
| 32          | EVS2307 | <i>Environmental Ecology</i>                           | 3          | 42           |          | 3          | EVS2301                                  |
| <b>V</b>    |         | <b>Advanced courses</b>                                | <b>72</b>  |              |          |            |  |
| <b>V.1</b>  |         | <b>Required</b>  | <b>47</b>  |              |          |            |  |
| 33          | EVS3240 | <i>Environmental Microbiology</i>                      | 3          | 30           | 15       |            | BIO1061<br>EVS2302                       |
| 34          | EVS3241 | <i>Environmental Chemistry</i>                         | 3          | 40           |          | 5          | EVS2303                                  |
| 35          | EVS3242 | <i>Environmental Analysis Methods</i>                  | 3          | 25           | 15       | 5          | CHE1057<br>EVS2303                       |
| 36          | EVS3243 | <i>Fundamentals of Environmental Technology</i>        | 3          | 45           |          |            | CHE1081<br>CHE1057<br>BIO1061<br>EVS2302 |

| No.        | Code    | Subject  | Credits            | Credit hours |          |            | Prerequisite                  |
|------------|---------|--|--------------------|--------------|----------|------------|-------------------------------|
|            |         |  |                    | Lecture      | Practice | Self-study |                               |
| 37         | EVS3244 | <i>Environmental Management</i>                                      | 3                  | 39           | 3        | 3          | EVS2302                       |
| 38         | EVS3245 | <i>Introduction to Mathematics for Environmental Science</i>         | 3                  | 30           | 10       | 5          | MAT1092                       |
| 39         | EVS2009 | <i>Environmental Physics</i>   | 2                  | 30           |          |            | CHE1057<br>EVS2302            |
| 40         | EVS3247 | <i>Environmental Assessment</i>                                      | 3                  | 30           | 10       | 5          | EVS2301<br>EVS2303            |
| 41         | EVS3248 | <i>Environmental Economics</i>                                       | 3                  | 30           | 10       | 5          | EVS3244                       |
| 42         | EVS2017 | <i>Environment Laws and Policies</i>                                 | 2                  | 30           |          |            |                               |
| 43         | EVS3250 | <i>Geographic Information Systems</i>                                | 3                  | 40           |          | 5          |                               |
| 44         | EVS3307 | <i>Informatics for Environmental Science</i>                         | 3                  | 15           | 30       |            |                               |
| 45         | EVS3266 | <i>Environmental Toxicology and Health</i>                           | 3                  | 42           |          | 3          |                               |
| 46         | EVS3231 | <i>Analytical Environmental System</i>                               | 2                  | 30           |          |            |                               |
| 47         | EVS3332 | <i>Field Study 1</i>   | 2                  | 5            | 25       |            | EVS2303                       |
| 48         | EVS3333 | <i>Field Study 2</i>   | 2                  | 5            | 25       |            | EVS3243<br>EVS3247            |
| 49         | EVS4071 | <i>Practical Chemistry</i>   | 2                  | 5            | 25       |            | CHE1057<br>CHE1081            |
| 50         | EVS4072 | <i>Annual Essay</i>  | 2                  | 10           | 20       |            |                               |
| <b>V.2</b> |         | <b><i>Elective</i></b>   | <b>15/<br/>105</b> |              |          |            |                               |
| V.2.1      |         | <i>The elective courses specializing in environmental management</i> | 15                 |              |          |            |                               |
| 51         | EVS3251 | <i>Environmental Auditing</i>  | 3                  | 30           | 10       | 5          | EVS3247<br>EVS3244            |
| 52         | EVS3252 | <i>Environmental Planning</i>  | 3                  | 30           | 12       | 3          | EVS3247                       |
| 53         | EVS3253 | <i>Environmental Management System</i>                               | 3                  | 36           | 9        |            | EVS3244<br>EVS3247<br>EVS3243 |

| No.   | Code    | Subject  | Credits | Credit hours |          |            | Prerequisite                  |
|-------|---------|--|---------|--------------|----------|------------|-------------------------------|
|       |         |  |         | Lecture      | Practice | Self-study |                               |
| 54    | EVS3254 | <i>Environmental Monitoring</i>  | 3       | 30           | 10       | 5          | EVS3244                       |
| 55    | EVS3255 | <i>Application of GIS in Environmental Management</i>                          | 3       | 25           | 15       | 5          | INT1005<br>EVS3244            |
| V.2.2 |         | <i>The elective courses specializing in soil environment</i>                   | 15      |              |          |            |                               |
| 56    | EVS3256 | <i>Soil Pollution and Remediation</i>  | 3       | 40           |          | 5          | EVS2303                       |
| 57    | EVS3257 | <i>Chemical Fertilizers and Soil Environment</i>                               | 3       | 30           | 10       | 5          | CHE1057<br>EVS2302<br>EVS3241 |
| 58    | EVS3258 | <i>Environmental Soil Chemistry</i>  | 3       | 30           | 15       |            |                               |
| 59    | EVS3259 | <i>Environmental Soil Ecology</i>  | 3       | 30           | 12       | 3          | BIO1061                       |
| 60    | EVS3260 | <i>Environmental Indicators</i>  | 3       | 40           |          | 5          | BIO1061<br>EVS2302            |
| V.2.3 |         | <i>The intensive modules ecological environment</i>                            | 15      |              |          |            |                               |
| 61    | EVS3261 | <i>Application of Conservation Biology</i>                                     | 3       | 36           | 9        |            | BIO1061                       |
| 62    | EVS3262 | <i>Human Ecology</i>   | 3       | 30           | 15       |            |                               |
| 63    | EVS3263 | <i>Biodiversity</i>  | 3       | 40           |          | 5          | BIO1061                       |
| 64    | EVS3264 | <i>Environmental Ecology for Regions</i>                                       | 3       | 45           |          |            | EVS2303<br>EVS2301            |
| 65    | EVS3265 | <i>Ecotourism</i>  | 3       | 25           | 15       | 5          | BIO1061<br>EVS2301<br>EVS2302 |
| V.2.4 |         | <i>The intensive subjects in environmental toxicology and poison treatment</i> | 15      |              |          |            |                               |
| 66    | EVS3334 | <i>Hygiene and food safety</i>   | 3       | 40           |          | 5          | EVS3266                       |

| No.   | Code    | Subject  | Credits | Credit hours |          |            | Prerequisite                  |
|-------|---------|--|---------|--------------|----------|------------|-------------------------------|
|       |         |  |         | Lecture      | Practice | Self-study |                               |
|       |         |  |         |              |          |            | EVS2302                       |
| 67    | EVS3267 | <i>Methods for Toxicant Analysis</i>                                   | 3       | 30           | 15       |            | EVS3242                       |
| 68    | EVS3268 | <i>Ecological Toxicology</i>   | 3       | 30           | 15       |            |                               |
| 69    | EVS3269 | <i>Toxicant Risk Management</i>  | 3       | 40           |          | 5          | EVS3241<br>EVS3266            |
| 70    | EVS3270 | <i>Face of toxicant in Environment</i>                                 | 3       | 36           | 9        |            |                               |
| V.2.5 |         | <i>The intensive subjects in water environment</i>                     | 15      |              |          |            |                               |
| 71    | EVS3271 | <i>Environmental Water Chemistry</i>                                   | 3       | 40           |          | 5          | CHE1081<br>EVS3241            |
| 72    | EVS3272 | <i>Sustainable Use and Management of Water Resources</i>               | 3       | 30           | 15       |            | EVS2301                       |
| 73    | EVS3273 | <i>Water Pollution</i>   | 3       | 30           | 15       |            |                               |
| 74    | EVS3274 | <i>Environmental Water Ecology</i>                                     | 3       | 30           | 15       |            | EVS2307                       |
| 75    | EVS3275 | <i>Analysis and Assessment of Water Quality</i>                        | 3       | 25           | 15       | 5          | EVS3242                       |
| V.2.6 |         | <i>The intensive modules in environmental modeling</i>                 | 15      |              |          |            |                               |
| 76    | EVS3276 | <i>Applied GIS and Environmental Modeling in Environmental Mapping</i> | 3       | 39           | 6        |            | EVS2302<br>EVS3250<br>EVS3245 |
| 77    | EVS3277 | <i>Environmental Assessing Modeling</i>                                | 3       | 34           | 6        | 5          | EVS3245                       |
| 78    | EVS3278 | <i>Environmental Pollution Forecasting Models</i>                      | 3       | 25           | 15       | 5          | EVS3245                       |
| 79    | EVS3279 | <i>Monitoring and Processing of</i>                                    | 3       | 36           | 9        |            | EVS3242                       |

| No.   | Code    | Subject  | Credits    | Credit hours |          |            | Prerequisite       |
|-------|---------|--|------------|--------------|----------|------------|--------------------|
|       |         |  |            | Lecture      | Practice | Self-study |                    |
|       |         | <i>Environmental Data</i>                              |            |              |          |            | MAT1101            |
| 80    | EVS3280 | <i>Emission Inventories</i>                            | 3          | 45           |          |            | EVS2303<br>EVS3245 |
| V.2.7 |         | <i>The intensive modules on the marine environment</i> | 15         |              |          |            |                    |
| 81    | EVS3335 | <i>Basic of marine resources and environment</i>       | 3          | 35           | 7        | 3          | EVS3244<br>EVS3241 |
| 82    | EVS3282 | <i>Marine Spatial Planning</i>                         | 3          | 45           |          |            | EVS3244            |
| 83    | EVS3283 | <i>Marine Pollution Management</i>                     | 3          | 45           |          |            | EVS2301<br>EVS3244 |
| 84    | EVS3284 | <i>Marine Environment Laws and Policies</i>            | 3          | 35           | 7        | 3          | EVS2017<br>EVS3244 |
| 85    | EVS3285 | <i>Marine Protected Areas Management</i>               | 3          | 45           |          |            | BIO1061<br>EVS3244 |
| V.3   |         | <b><i>Graduation thesis</i></b>                        | <b>10</b>  |              |          |            |                    |
| 86    | EVS4080 | <i>Graduation Thesis</i>                               | 10         |              |          |            |                    |
|       |         | <b>Total</b>   | <b>156</b> |              |          |            |                    |