

* Soil Sciences (*Dated September 30th, 2015*)

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|---|----------------------|
| Total credits of the curriculum: | 138 credits |
| - General education knowledge: | 28 credits |
| <i>(Not including physical education, military defense education and soft skills)</i> | |
| - Basic courses: | 6 credits |
| - Fundamental courses: | 27 credits |
| - Core courses: | 15 credits |
| + <i>Required:</i> | <i>12 credits</i> |
| + <i>Elective:</i> | <i>3/9 credits</i> |
| - Advanced courses: | 62 credits |
| + <i>Required:</i> | <i>40 credits</i> |
| + <i>Elective:</i> | <i>15/60 credits</i> |
| + <i>graduation thesis/subjects replacing thesis:</i> | |
| | <i>7 credits</i> |

Available curriculum

| No. | Code | Subject | Credits | Credit hours | | | Prerequisite |
|------------|-------------|---|-----------|--------------|----------|------------|--------------|
| | | | | Lecture | Practice | Self-study | |
| I | | General education knowledge <i>(Not including subjects 10 - 12)</i> | 28 | | | | |
| 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 | | <i>Physical Education</i> | 4 | | | | |
| 11 | | <i>National Defence Education</i> | 8 | | | | |
| 12 | | <i>Soft Skills</i> | 3 | | | | |
| II | | Basic courses | 6 | | | | |
| 13 | HIS1056 | <i>Fundamentals of Vietnamese Culture</i> | 3 | 42 | 3 | | |
| 14 | GEO1050 | <i>Earth and Life Sciences</i> | 3 | 30 | 10 | 5 | |
| III | | Fundamental courses | 27 | | | | |
| 15 | MAT109 0 | <i>Linear Algebra</i> | 3 | 30 | 15 | | |
| 16 | MAT109 1 | <i>Calculus 1</i> | 3 | 30 | 15 | | |
| 17 | MAT109 | <i>Calculus 2</i> | 3 | 30 | 15 | | MAT1091 |

| No. | Code | Subject | Credits | Credit hours | | | Prerequisite |
|-------------|-------------|--|------------|--------------|----------|------------|-------------------------------|
| | | | | Lecture | Practice | Self-study | |
| | 2 | | | | | | |
| 18 | MAT110 1 | <i>Probability and Statistics</i> | 3 | 27 | 18 | | MAT1091 |
| 19 | PHY1100 | <i>Mechanics - Thermodynamics</i> | 3 | 30 | 15 | | MAT1091 |
| 20 | PHY1103 | <i>Electromagnetism - Optics</i> | 3 | 30 | 15 | | MAT1091 |
| 21 | CHE1080 | <i>General chemistry</i> | 3 | 42 | | 3 | |
| 22 | CHE1081 | <i>Organic Chemistry</i> | 3 | 42 | | 3 | CHE1080 |
| 23 | CHE1057 | <i>Analytical chemistry</i> | 3 | 42 | | 3 | CHE1080 |
| IV | | Core courses | 15 | | | | |
| IV.1 | | Required | 12 | | | | |
| 24 | BIO1061 | <i>Basic Biology</i> | 3 | 42 | | 3 | |
| 25 | EVS2301 | <i>Natural Resources</i> | 3 | 36 | 9 | | EVS2304 |
| 26 | EVS2302 | <i>Fundamentals of Environmental Sciences</i> | 3 | 38 | 7 | | GEO1050 |
| 27 | EVS2304 | <i>Principles of soil, water, and air environments</i> | 3 | 36 | 9 | | CHE1080 BIO1061 EVS2302 |
| IV.2 | | Elective | 3/9 | | | | |
| 28 | EVS2305 | <i>Climate Change</i> | 3 | 35 | 10 | | EVS2304 |
| 29 | EVS2306 | <i>Environmental Geology</i> | 3 | 35 | 10 | | EVS2304 |
| 30 | EVS2307 | <i>Environmental Ecology</i> | 3 | 42 | | 3 | EVS2301 |
| V | | Advanced courses | 62 | | | | |
| V.1 | | Required | 40 | | | | |
| 31 | EVS3311 | <i>General Soil Science</i> | 3 | 40 | | 5 | |
| 32 | EVS3312 | <i>Method for Soil analysis</i> | 3 | 30 | 15 | | CHE1057 |
| 33 | EVS3313 | <i>Soil Chemistry</i> | 3 | 30 | 15 | | EVS3311 EVS3312 |
| 34 | EVS3314 | <i>Agricultural chemistry</i> | 3 | 30 | 15 | | |

| No. | Code | Subject | Credits | Credit hours | | | Prerequisite |
|------------|---------|---|-------------------|--------------|----------|------------|--------------------|
| | | | | Lecture | Practice | Self-study | |
| 35 | EVS3234 | <i>Soil Biology</i> | 4 | 45 | 15 | | BIO1061 EVS3311 |
| 36 | EVS3316 | <i>Soil physic</i> | 3 | 25 | 15 | 5 | EVS3311 |
| 37 | EVS3317 | <i>Soil classification and evaluation</i> | 3 | 30 | 15 | | EVS3311 |
| 38 | EVS3318 | <i>Statistical methods for agriculture science</i> | 3 | 30 | 10 | 5 | |
| 39 | EVS3319 | <i>Soil geography</i> | 3 | 25 | 15 | 5 | EVS2301 EVS3311 |
| 40 | EVS3320 | <i>Plant physiology</i> | 3 | 25 | 15 | 5 | |
| 41 | EVS3250 | <i>Geographic Infomation Systems</i> | 3 | 25 | 15 | 5 | |
| 42 | EVS3332 | <i>Field Study 1</i> | 2 | | 30 | | EVS3311 EVS2306 |
| 43 | EVS3333 | <i>Field Study 2</i> | 2 | | 30 | | EVS3250 EVS3311 |
| 44 | EVS4071 | <i>Practical Chemistry</i> | 2 | | 30 | | CHE1057 CHE1081 |
| V.2 | | <i>Elective</i> | 15/ 60 | | | | |
| V.2.1 | | <i>The elective courses specializing in planning and sustainable land use</i> | 15 | | | | |
| 45 | EVS3321 | <i>Soil Ecology</i> | 3 | 30 | 12 | 3 | EVS3234 |
| 46 | EVS3322 | <i>Soil Mapping</i> | 3 | 25 | 15 | 5 | EVS3317 EVS3250 |
| 47 | EVS3323 | <i>Land use and planning</i> | 3 | 30 | 10 | 5 | EVS3311 |

| No. | Code | Subject | Credits | Credit hours | | | Prerequisite |
|-------|---------|--|---------|--------------|----------|------------|--------------------|
| | | | | Lecture | Practice | Self-study | |
| 48 | EVS3324 | <i>Soil management and conservation</i> | 3 | 40 | | 5 | EVS3311 |
| 49 | EVS3325 | <i>Law and polices of land management</i> | 3 | 40 | | 5 | |
| V.2.2 | | <i>The elective courses specializing in soil and plant nutrition</i> | 15 | | | | |
| 50 | EVS3326 | <i>Mineral nutrition and crop yields</i> | 3 | 30 | 10 | 5 | EVS3311 EVS3314 |
| 51 | EVS3327 | <i>Agriculture ecology</i> | 3 | 40 | | 5 | EVS3311 EVS3320 |
| 52 | EVS3328 | <i>Agrochemical research methods</i> | 3 | 30 | 15 | | EVS3314 EVS3312 |
| 53 | EVS3329 | <i>Soil organic matter</i> | 3 | 30 | 10 | 5 | EVS3311 |
| 54 | EVS3330 | <i>Clay minerals in soils</i> | 3 | 25 | 15 | 5 | EVS3311 |
| V.2.3 | | <i>The intensive courses in degradation, pollution and soil protection</i> | 15 | | | | |
| 55 | EVS3336 | <i>Assessment of soil degradation and pollution</i> | 3 | 40 | | 5 | |
| 56 | EVS3337 | <i>Mitigation techniques for soil degradation</i> | 3 | 30 | 15 | | |
| 57 | EVS3338 | <i>Molecular microbiological techniques for degraded soil assessment</i> | 3 | 30 | 15 | | EVS2302 EVS3234 |
| 58 | EVS3339 | <i>Techniques for contaminated soil treatment</i> | 3 | 30 | 15 | | |
| 59 | EVS3340 | <i>New materials for reduction of soil degradation and pollution</i> | 3 | 30 | 15 | | EVS3311 EVS3312 |
| V.2.4 | | <i>The elective courses</i> | 15 | | | | |

| No. | Code | Subject | Credits | Credit hours | | | Prerequisite |
|-------|---------|--|------------|--------------|----------|------------|-------------------------------|
| | | | | Lecture | Practice | Self-study | |
| | | <i>specializing in land use and environmental issues</i> | | | | | |
| 60 | EVS3341 | <i>Agrochemicals and food safety</i> | 3 | 40 | | 5 | EVS3314 |
| 61 | EVS3342 | <i>Soil degradation monitoring</i> | 3 | 30 | 15 | | EVS3311 |
| 62 | EVS3343 | <i>Agriculture and Sustainable development</i> | 3 | 40 | | 5 | |
| 63 | EVS3344 | <i>Forest soil environment</i> | 3 | 30 | 15 | | EVS3311 |
| 64 | EVS3345 | <i>Application of soil microorganisms</i> | 3 | 30 | 15 | | EVS3234 |
| V.3 | | <i>Graduation thesis/ Subjects replacing thesis</i> | 7 | | | | |
| V.3.1 | | <i>Graduation thesis</i> | 7 | | | | |
| 65 | EVS4090 | <i>Graduation Thesis</i> | 7 | | | | |
| V.3.2 | | <i>Subjects replace thesis</i> | 7 | | | | |
| 66 | EVS4082 | <i>Basic of soil sciences</i> | 3 | 30 | 10 | 5 | |
| 67 | EVS4083 | <i>Practice for soil analysis and agrochemistry</i> | 2 | | 30 | | EVS3311 EVS3312 EVS3314 |
| 68 | EVS4084 | <i>Water in soil</i> | 2 | 25 | | 5 | EVS3311 |
| | | Total | 138 | | | | |