

Pedology (IIInd Year of study, IIIrd SEMESTER)

Credit value (ECTS): 4

Course category:

Domain (Imposed)

Course holder:

Assoc. Prof. PhD. Feodor FILIPOV

Discipline objectives (course and practical works)

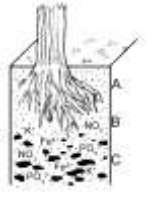
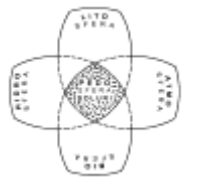
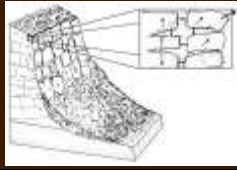
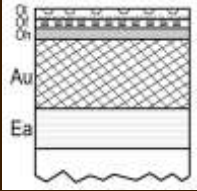
The aim of the course is to have students acquire knowledge on soil constituents, soil properties, soil horizon and soil. Students will also study the soil formation factors and soil formation processes..

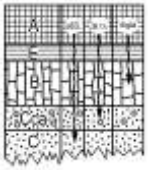
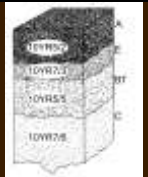
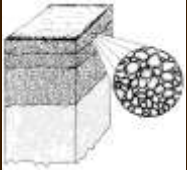
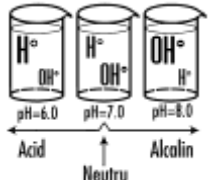
Practical works seek to familiarize students with minerals rocks classes and deposits resulted after weathering.

Morphological description of soil horizon and recognition processes which were formed are the another main objectives.

In the laboratory there are representative collections of rocks, minerals and soil macromonoliths taken to a depth of 2m.

Contents (syllabus)

Course (chapters/subchapters)	
	1. Pedology – Soil Science: This chapter includes research methods in soil conditions, soil significance, brief history of Pedology in world, in Romania and Pedology school of Iasi. The chapter concludes with soil survey applications in economy, especially in agricultural field.
	2. Factors of soil formation: Parent material; Climate, Topography; Biota, Time, People as soil Formers; Soil-forming factors.
	3. Mineral soil constituents: Rocks - source of mineral soil constituents; Physical weathering; Chemical weathering (oxydation-reduction, hydratation, hydrolisis); Alluvium, proluvium, deluvium, colluvium,
	4. Organic soil constituents: Soil organism (edaphon); The chemical composition of the organic matter and biochemical constituents; Humification; humic fractions; The indicators used in assessing the quality of humus; The importance of soil humus

	<p>5. Soil formation and composition: Soil profile; Soil forming processes; Soil horizons.</p>
	<p>6. Soil morphology: Soil structure; Soil colour; Special soil formation.</p>
	<p>7. Physical properties of the soil; Soil texture; Density and Bulk density; Soil porosity; Soil stickness, plasticity and consistency</p>
	<p>8. Chemical properties of the soil; Clay and humus colloids; soil solution; Cation exchange capacity; Anion-exchange capacity; Soil acidity and alcalinty; Soil reaction; soil buffering capacity</p>

Practical works
Presentation Laboratory of Soil Science; labor protection rules; Laboratory equipment a; fair practices in Pedology laboratory.
Recognition and description of minerals
Recognition and characterization of igneous metamorphic and sedimentary rocks
Recognition deposits resulting after physical and chemical weathering
Recognition of pedogenetical horizons and processes which have been formed

Bibliography

1. Blaga Gh. **Filipov F.**, Rusu I., Udrescu S., Vasile D. - *Pedologie*. Ed. ACADEMIC PRESS, Cluj – Napoca, 2005.
2. **Filipov F.**, Lupascu Ghe. - *Pedologie*. Alcătuirea geneza și clasificarea solurilor. Editura. Terra nostra, Iasi, 2003
3. **Filipov F.**, - *Pedologie*. Ed. “Ion Ionescu de la Brad” Iași. 2005.
4. Merlescu Er., - *Solurile României*. Curs litografiat, IAI Iași.
5. Teșu C. - *Pedologie*, Atelierul de Multiplicare, Universitatea Agronomică Iași 1994.
6. Teșu C., Avarvarei I., - *Lucrări practice Pedologie*. Atelierul de Multiplicare, Universitatea Agronomică Iași, 1990.
7. Teodorescu Soare Eugen, 2012- *Pedologie*. Minerale și roci. Îndrumător practic

Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Oral examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Contact

Assoc. Prof. PhD. Feodor FILIPOV and Assist. PhD. Daniel GALEȘ

Agriculture Faculty - USAMV Iași

Aleea Mihail Sadoveanu nr. 3, Iași, 700490, România

Phone: 0040 232 407450; 0040232407521

E-mail: ffilipov@uaiasi.ro;

Pedology (IInd Year of study, IVrd SEMESTER)

Credit value (ECTS) 3

Course category

Domain (Imposed)

Course holder:

Assoc. Prof. PhD. Feodor FILIPOV

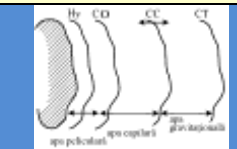

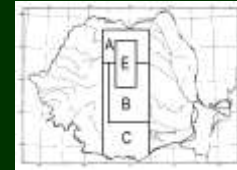
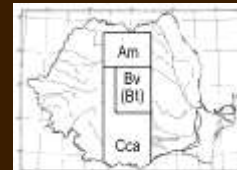

Discipline objectives (course and practical works)

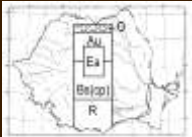
The aim of the course is to have students acquire knowledge on taxonomic descriptions, morphological characters and physical chemical of the main soil horizons that have practical implications. Students will also study the mai taxonomic units of Soil Taxonomy.

The main objective of the course is that graduates know pedologie can make a short description of major taxonomic units: summary description of parent material: environment; profile development; regional distribution; management and use.

Practical works seek to familiarize students with technical work in pedology laboratories and knowledge of some methods of chemical and phisycal analyses. Collection of soil (84 monoliths) will allow students to recognize and diagnose the representative soil units.

Contents (syllabus)

Curs (Capitole/subcapitole)	
	I. Soil air and water: Characteristics of water: Soil water amount; Soil water constant; Suction; Water flow into and through soil; Flow in stratified soil; Vapor flow; Moisture regime; Soil air composition; Air movement.
	II. Soil climate: Sunshine-irradiation and heating; Movement of heat through soil; Controlling ground-level climates.
	III. Soil Taxonomy: Characteristics of soil classifications; Genetic and morphological soil classifications; Taxonomia solurilor din România; Cadrul natural de formare a solurilor din România
	IV. Cernisols class (CER): K astanozems (KZ) ; C hernozeams (CZ); F haozeams (FZ) ; Rendzic Soil (Rendzina RZ).
	V. Luvisols class: Preluvosols or Haplic Luvisols; Luvosoluri or Luvisols; Planosols; Alosols.

	<p>VI. Spodosols class: Prepodzols or Entic Podzols; Podzols;</p>									
<table border="1"> <tr><td>Au</td><td>A,Jan</td><td>Ay(z)</td></tr> <tr><td>AR,AC</td><td>A,Ran</td><td>ACy(z)</td></tr> <tr><td>Rsa,C</td><td>R</td><td>C</td></tr> </table>	Au	A,Jan	Ay(z)	AR,AC	A,Ran	ACy(z)	Rsa,C	R	C	<p>VII. Classes: Hidrisoluri (Stagnosol and Gleiosols); Andisols (Andosols) Histisoluri (Histosol).</p>
Au	A,Jan	Ay(z)								
AR,AC	A,Ran	ACy(z)								
Rsa,C	R	C								
<table border="1"> <tr><td>Ao sa</td><td>A</td><td>T1</td></tr> <tr><td>Bsa(Bta)</td><td>AG(W)</td><td>T2</td></tr> <tr><td>C</td><td>Gr(BW)</td><td>T3</td></tr> </table>	Ao sa	A	T1	Bsa(Bta)	AG(W)	T2	C	Gr(BW)	T3	<p>VIII. Classes: Hidrisols (Stagnosoluri și Gleiosoluri); Salsodisoluri (Solonceacuri și Solonețuri); Histisols (Histosol).</p>
Ao sa	A	T1								
Bsa(Bta)	AG(W)	T2								
C	Gr(BW)	T3								
<table border="1"> <tr><td>A</td><td>A</td><td>U, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ </td> <td data-bbox="500 680 1474 856"> <p>IX. 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Practical works
Establishment of representative location for soil profile
Soil sampling
Approximate setting of soil texture in the field
Approximate setting of soil moisture
Determination of new soil formation and artefacts
The establishment of soil structure
Determination of soil pH, Ca CO ₃ content, soluble salts content
Morphological characterization and soil diagnosis

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Evaluation

Evaluation form	Evaluation Methods	Percentage of the final grade
Exam	Oral examination	60%
Appreciation of the activity during the semester	Oral assessment during the semester, verification tests and final laboratory colloquium.	40%

Contact

Assoc. Prof. PhD. Feodor FILIPOV and Assist. PhD. Daniel GALEȘ

Facultatea de Agricultură - USAMV Iași

Aleea Mihail Sadoveanu nr. 3, Iași, 700490, România

Phone: 0040 232 407450; 0040232407521

E-mail: ffilipov@uaiasi.ro; galesdan@yahoo.com