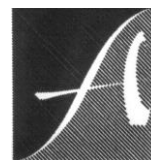


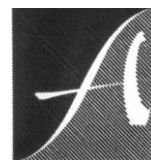


**UNIVERSITATEA DIN ORADEA**  
**FACULTATEA DE CONSTRUCȚII ȘI ARHITECTURĂ**  
C.P.nr. 114, Oficiul Poștal 1, Str. Barbu Șt. Delavrancea nr. 4  
410058, ORADEA, ROMÂNIA  
Tel./Fax: 004-0259-408447, 0359.819329  
<http://arhiconoradea.ro>; e-mail: [arhicon@uoradea.ro](mailto:arhicon@uoradea.ro)



***LECTURE TOPICS AND BIBLIOGRAPHY***  
***for the position of professor, position no. 1, from the state of the***  
***functions of the Department of Cadastre***

| Name                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| University                                  | University of Oradea                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Faculty                                     | Faculty of Construction, Cadastre and Architecture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Department                                  | Department of Cadastre                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| The position in the Positions Establishment | Position no. 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Position                                    | Professor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Disciplines in the curriculum               | Adjustment computation of geodetic data and statistics I - course<br>Ellipsoidal geodesy - course<br>Geodesy - course<br>Ellipsoidal geodesy - project                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Scientific field                            | Geodetic engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Lecture Topics                              | <ol style="list-style-type: none"><li>1. Fundamental problems of the theory of errors</li><li>2. Classification of determinations, measurements and observations</li><li>3. Concepts of probability theory and mathematical statistics</li><li>4. The least squares method</li><li>5. Compensation for direct measurements</li><li>6. Compensation of indirect measurements</li><li>7. Matrix treatment of indirect measurements</li><li>8. Compensation of conditional measurements</li><li>9. Compensation of free networks</li><li>10. Transformations of coordinates in space with two dimensions (2D) by the method of least squares</li><li>11. Compensation of geodetic networks made by satellite technologies</li><li>12. Notions of field theory. The force of attraction of the Earth, the centrifugal force, the gravitational force</li><li>13. Notions of potential theory. The potential of gravity</li><li>14. Equipotential reference surfaces:</li><li>15. The potential of level surfaces</li><li>16. The curvature of the level surfaces</li><li>17. The consequences of non-parallelism of level</li></ol> |

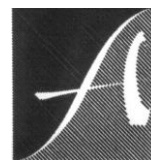


|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     | <p>surfaces</p> <p>18. Lines of force. Vertical of the place</p> <p>19. Vertical curvature</p> <p>20. Vertical deviations</p> <p>21. The geoid. Level spheroid. Level ellipsoid</p> <p>22. Reference surfaces and altimetric coordinate systems:</p> <p>23. Dynamic altitude</p> <p>24. Orthometric altitude</p> <p>25. Normal altitude</p> <p>26. Reference mathematical surfaces:</p> <p>27. The rotating ellipsoid</p> <p>28. The sphere of rotation</p> <p>29. Coordinate systems</p> <p>30. Coordinate systems of the rotating ellipsoid</p> <p>31. Sphere coordinate systems</p> <p>32. Expression of the radius of curvature of a normal section as a function of the geodesic azimuth</p> <p>33. Mean radius of curvature (mean Gaussian radius)</p> <p>34. Normal direct section and inverse section. Their mutual position</p> <p>35. Geodetic line: definition, finite term equation for Clairaut's geodetic line</p> <p>36. Parametric equations of the geodetic line (Puisseaux - Weingarten - Gauss equations)</p> <p>37. Solving small ellipsoidal triangles</p> <p>38. Calculation of geodetic coordinates on the reference ellipsoid</p> |
| <b>Bibliography</b> | <ol style="list-style-type: none"><li>1. <b>Manualul inginerului geodez</b>, vol. I, — Editura Tehnică, București, 1973;</li><li>2. <b>Teoria prelucrării măsurătorilor geodezice</b>, N. Fotescu — Litografia Institutului de Construcții București, 1981</li><li>3. <b>Geodezie: noțiuni de geodezie fizică și elipsoidală, poziționare</b>, C. Moldoveanu — Editura MATRIX ROM, București, 2002;</li><li>4. <b>Curs de Teoria erorilor și metoda celor mai mici pătrate</b>, M. Botez — Editura Didactică și Pedagogică, București, 1961;</li><li>5. <b>Geodezie. Triangulație</b>, D. Ghițău — Editura Didactică și Pedagogică, București, 1972</li><li>6. <b>Compensarea și comasarea riguroasă a rețelelor geodezice deja compensate</b>, D. Ghițău — Litografia Institutului de Construcții București, 1970</li><li>7. <b>Adjustment Computation-Spatial Data Analysis – Fifth Edition</b> – Charles D. Ghialani, Editura Wiley 2010</li></ol>                                                                                                                                                                                                     |



**UNIVERSITATEA DIN ORADEA**  
**FACULTATEA DE CONSTRUCȚII ȘI ARHITECTURĂ**  
C.P.nr. 114, Oficiul Poștal 1, Str. Barbu Șt. Delavrancea nr. 4  
410058, ORADEA, ROMÂNIA  
Tel./Fax: 004-0259-408447, 0359.819329  
<http://arhiconoradea.ro>; e-mail: [arhicon@uoradea.ro](mailto:arhicon@uoradea.ro)

---



|  |                                                                                                                                                                                                                                                                                                                                                        |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>8. Parameter Estimation and Hypothesis Testing in Linear Models</b> - Karl-Rudolf Koch, Editura Springer-Verlag 1999</p> <p><b>9. Algebraic Geodesy and Geoinformatics</b> - Joseph L. Awange, Erik W. Grafarend, Bela Palancz, Pirooska Zaletnyik, 2010</p> <p><b>10. Physical Geodesy</b> - Bernhard Hofmann-Wellenhof Helmut Moritz, 2006</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Department Head,**  
ș.l. univ. dr. ing. Modog Traian