

Field name	Description
University	„Constantin Brâncuși” University of Târgu-Jiu
Faculty	Faculty of Engineering
Department	Industrial and Automatic Engineering
Position in the list	12
Rank	Associate professor
Disciplines	Cold Pressing Technology Machine Tools I Machine Tools II Heat Treatments
Scientific field	Industrial Engineering
The description of the academic position	Associate Professor position 12 – Department of Industrial and Automation Engineering/Faculty of Engineering - associate professor position, including teaching activities in the subjects from the position put out to competition that are found in the curricula of the bachelor's and master's degree programs within the faculty. Also, the position includes, in addition to teaching activities, evaluation, consultation and tutoring activities in the subjects from the curriculum included in the position put out to competition and tutoring activities. The position is put out to competition for an indefinite period.
Academic duties	Weekly teaching activity consisting of: 3 hours of lectures and 2 hours of project work in the discipline Cold Pressing Technology; 2 hours of lectures in the discipline Machine Tools I; 2 hours of lectures in the discipline Machine Tools II; 2 hours of lectures in the discipline Heat Treatments; 2 hours of consultation activities; 2 hours of evaluation activities; 2 hours of tutoring activities. The position also includes scientific research activities in the field, according to the National Education Law no.199/2023, with subsequent amendments and completions, and the job description, which will be drawn up as an annex to the employment contract.
Employment salary	11390 lei
Publication date on site UCB	28.11.2024
Starting and final dates of the registration	November 28th 2024 – January 8th 2025
Date, day of the week and hour for the promotion exam	January 30th, 2025, Thursday, hour 13.00
Venue where the promotion exam	Faculty of Engineering, room 113, Calea Eroilor, no. 30, 210135 Târgu-Jiu, Gorj.
The dates for the competition tests, including lectures, courses, etc.	January 30th, 2025
Date of exam results communication	January 30th, 2025
Starting and final dates for contesting the results	January 31th – February 04th, 2025
Topics for preparing the promotion exam	For candidates from higher education, the fulfillment of the minimum national standards for occupying the position of associate professor is verified in accordance with Law no. 199/2023, the Higher Education Law, with subsequent amendments and completions, with Order MENCȘ no. 6129/20.12.2016, with the Competition Methodology for occupying vacant teaching and research positions at the "Constantin Brâncuși" University of Târgu-Jiu

Candidates from outside the higher education system additionally give a public lecture of a didactic or scientific research nature, with the following topic:

I. Discipline: Cold Pressing Technology

Topic:

1. General considerations regarding Cold Pressing

Technology. Knowledge of the equipment required for cold pressing processing. Mechanical knee presses. Mechanical double-action presses.

2. Forces required for cutting. Actual cutting force.

Actual force for open contour with parallel blades.

Mechanical work. Determination of the real angle when cutting on a die with inclined edges. Example. Cases.

Determination of the cutting moment. Force of pushing the blanks through the hole of the active plate. Case of pushing the part through the hole of the active plate when cutting with parallel edges. Case of pushing the part when cutting with inclined edges. Contour complexity. Cases. Force of detachment of the punch from the hole left in the blank.

Force of spacing of active elements.

3. Calibration. Flow of the process. Process forces.

4. Fine cutting. Cutting straight bars.

5. Cutting devices. Classification. Parallel blade shears.

Inclined blade shears. Roller shears. Vibration shears.

Simple dies.

6. Bending. Sizing of blanks for bent parts. Bending tools.

U-shaped bending of parts. V-shaped bending of parts. Z-

shaped bending of parts. Bending dies for bushing-type parts, rolling dies, edging dies, combined bending dies.

Bending rolls and rollers.

7. Deep drawing. The deep drawing process. Tensioning and deformation of the material. Quality of the deep drawn parts. Force, mechanical work and power during deep drawing. Deep drawing coefficient. Deep drawing of cylindrical parts without flange

Drawn drawing of cylindrical parts with flange. Successive strip drawing. Drawing of parallelepipedal parts

Drawing of large parts of complex shape. Annealing of the material during drawing. Dimensioning of semi-finished

products for parts of revolution. Dimensioning of semi-finished products for parallelepipedal parts. Special

drawing and plastic deformation processes. Deformations with temperature differentiation of the semi-finished

product. Deformations with tools having a non-rigid active element. Deformations with high powers and speeds.

Deformation by explosion. Electro-hydraulic deformation.

Magneto-dynamic deformation. Pneumo-mechanical deformation.

8. Shaping. Embossing. Edge reflection. Swelling.

Necking. Hoisting and final forming. Shaping on special machines

9. Plastic deformation of massive semi-finished

products. General considerations regarding cold plastic deformation of massive semi-finished products. Flattening

and extrusion. Volume forming. Calibration. Stamping. Marking. Drawing. Cold extrusion. Rolling processing of solid parts. Reduction.

Bibliography:

1. Banu, C. Tehnologia deformării plastice la rece, Editura Tehnică, București. (1985).
2. Dobre, P. Bazele deformării plastice a metalelor, Editura Academiei Române, București. (1995).
3. Iliescu, C. Tehnologia ștanțării și matrițării la rece, Editura Didactică și Pedagogică, București. (1977).
4. Mihăilă, I. Presarea tablelor și optimizarea proceselor tehnologice, Editura Tehnică, București. (1983).
5. Rosinger, St., & Iclănzan, T. Tehnologia presării la rece. Lito IPTV, Timișoara. (1990).
6. Teodorescu, E. Deformarea plastică a tablelor: Principii și aplicații. Editura Universitară, București. (2006).

II. Discipline: Machine Tools I

Topics:

1. General Issues

Definition, Classification, Symbolization, Typification and Modularization of Machine Tools

2. Kinematic Movements and Axes Used in Machine Tools

Machine Tool Movements. Definition and Classification of Kinematic Axes. The Concept of Kinematic Axis

3. Kinematic Chains of Machine Tools

Structure, Characteristics, Association of Kinematic Chains, Closed Kinematic Chain

4. Components of Kinematic Chains of Machine Tools

Components of Kinematic Chains: Optical, Hydrostatic, Mechanical, Electrical.

5. Theory and design of kinematic chains

Main kinematic chains, feed, microfeed, threading, rolling, beading, copying and auxiliary.

6. Machine tool specific components and subassemblies

Machine tool frames, guide systems, guide adjustment, main spindles and their complete set (apc)

7. Drive systems, machine tool control

Mechanisms for machine tool control, copying systems

Bibliography:

1. Tauru Gh., Mașini-unelte și agregate vol. I-VI, Reprografia Universității din Craiova 1992-1996
2. Tauru Gh, Mașini-unelte și agregate, organologie, cinematică și proiectare, Editura Universitaria Craiova 2000
3. Tauru Gh, Mașini-unelte, sisteme de acționare și lanțuri cinematice, Editura Universitaria Craiova 2001
4. Tauru Gh, Lanțuri cinematice ale mașinilor-unelte, EDP București 2004
5. Ispas C, ș.a., Mașini-unelte, mecanisme de reglare, Editura Tehnică, 1997

III. Discipline: Machine tools II

Topics:

1. Lathes. Normal, universal lathes, vertical carousel lathes, turret lathes, semi-automatic and automatic lathes, bead-cutting lathes

2. Milling machines. Console milling machines, universal milling machines, universal milling machines for tooling, console-less milling machines, FP longitudinal milling machine

3. Drilling machines. Table drilling machines, column and upright drilling machines, radial drilling machines, coordinate drilling machines

4. Horizontal boring and milling machines AF. Generalities, principle diagrams. Planing and mortising machines. Transverse and longitudinal planing machines, transverse planing machines (slotting machines), longitudinal planing machines (planers)

5. Broaching machines. Generalities, classification, composition, construction and technology of machining on broaching machines.

6. Grinding machines. External cylindrical grinding machines, centerless cylindrical grinding machines, internal grinding machines, surface grinding machines.

7. Microfinishing machines. General considerations of machining, honing machines.

8. Threading machines. Threading machines with taps, threading machines with taps

9. Machines for machining gear teeth. Generalities, calculation relationships of parameters, worm-milling machine, adjustment of gearing machine with knife-wheel, machines for machining bevel gears with arc teeth

10 Machines for finishing gear teeth. Niles grinding machines

Bibliography:

1.Tauru Gh., Mașini-unelte și agregate vol. I-VI, Reprografia Universității din Craiova 1992-1996

2.Tauru Gh, Mașini-unelte și agregate, organologie, cinematică și proiectare, Editura Universitaria Craiova 2000

3.Tauru Gh, Mașini-unelte, sisteme de acționare și lanțuri cinematice, Editura Universitaria Craiova 2001

4.Tauru Gh, Lanțuri cinematice ale mașinilor-unelte, EDP București 2004

5.Ispas C, ș.a., Mașini-unelte, mecanisme de reglare, Editura Tehnică, 1997

6.Vaida A. ș.a., Proiectarea mașinilor-unelte, EDP București 1980

7.Botez E. ș.a., Mașini-unelte, organologie vol II, ET București 1978

8.Gheghea I. ș.a., Mașini unelte și agregate, EDP București 1983

9.Tauru Gh., Mașini-unelte, îndrumar de laborator, EU Craiova 2002

IV. Discipline: Heat treatments

	1. Heat treatments. Definition. Classification. Parameters. Thermodynamic conditions of phase transformations. Conditions of phase transformations of metallic materials. Heating media of parts subjected to heat treatments. 2. Heating equipment. Classification. Advantages and disadvantages between flame and electric furnaces. Constructional forms of furnaces. Cooling equipment 3. Preliminary heat treatments. Normalizing annealing. Regeneration annealing. Spheroidizing annealing. Homogenizing annealing. Decrystallization annealing. Stress relief annealing. 4. Final heat treatments. Quenching. Transformation of austenite into bainite. Transformation of austenite into martensite. Peculiarities of cooling austenite with variable or constant speed. Heating conditions for quenching. Cooling conditions for quenching. Internal stresses and their effects. Hardening processes. 5. Superficial hardening. Flame heating. Superficial hardening by electromagnetic induction. Hardening defects. Tempering. Peculiarities of heat treatments applied to alloy steels. Synthetic cooling media. 6. Thermochemical treatments. Chromization. Aluminization. Borization. Phosphating. 7. Heat treatments of cast irons and non-ferrous alloys. Heat treatment of cast irons. Heat treatment of non-ferrous alloys. 8. Heat treatments applied to machine parts. 9. Heat treatment of tools. Heat treatments applied to tool steels. Heat treatments applied to alloy tool steels. 10. Heat treatment of welded parts. Previous, simultaneous and subsequent heat treatments. Bibliography: 1. . Trușculescu, M. Studiul metalelor. Editura Didactică și Pedagogică, București. (1977). 2. Tudoran, P. Studiul metalelor, metalurgia fizică și tratamente termice. Vol. I și II, Universitatea din Brașov. (1980 și 1981). 3. Dulamita, T. Tehnologia tratamentelor termice, Editura Didactică și Pedagogică, București. (1982). 4. Dulamita, T. Tratamente termice și termochimice, Editura Didactică și Pedagogică, București. (1982). 5. Nicolaescu, M. Bazele metalurgiei fizice, Editura Academiei Române, București. (1995). 6. Popescu, G. Tratamente termice aplicate aliajelor, Editura Tehnică, București. (1987). 7. Marinescu, A. Metalurgia fizică aplicată, Editura Universitară, Craiova. (2001). 8. Stănescu, I. Tratamente termice ale oțelurilor speciale, Editura AGIR, București. (2010). 9. Sava, M. Influența tratamentelor termice asupra structurilor metalice. Editura Tehnică, București. (1984).
Description of the competition procedure	The competition is conducted in accordance with the Framework Methodology for the competition for filling

vacant teaching and research positions in higher education, approved by Government Decree no. 1339/2023, with subsequent amendments and supplements, Higher Education Law no. 199/2023, with subsequent amendments and additions and the Competition Methodology for filling vacant teaching and research positions at the "Constantin Brâncuși" University of Târgu-Jiu, approved at the meeting of the Senate of the "Constantin Brâncuși" University of Târgu-Jiu on 13.03.2024. The competition file created by the candidate, together with the electronic support, which contains the scanned file, is submitted with a registration number to the address of the higher education institution specified on the competition website, directly or through postal or courier services that allow confirmation of receipt. The competition file is sent to the members of the competition committee starting from the closing date of the competition file submission process, but no later than 5 working days before the first test of the competition. The file, in the electronic format submitted by the candidates, is sent by the dean of each faculty that manages the competitions. The file in printed format, submitted by the candidate, will be sent to the chairman of the committee. The competition committee evaluates the candidate from the perspective of meeting the minimum standards specific to the position as well as verifying the following aspects: the relevance and impact of the candidate's scientific results, in relation to the field of disciplines of the position for which he/she is applying; the candidate's ability to guide students or young researchers; the candidate's teaching skills; the candidate's ability to transfer his/her knowledge and results to the economic or social environment or to popularize his/her own scientific results; the candidate's ability to work in a team and the efficiency of his/her scientific collaborations, depending on the specifics of the candidate's field; the candidate's ability to lead research and development projects; the candidate's professional experience in institutions other than the institution organizing the competition; the proposal for developing the teaching and research career. In order to occupy the position of associate professor, the following conditions must be met cumulatively: possession of a doctorate; meeting the minimum national standards for occupying teaching positions, specific to the teaching position of associate professor, approved by Order of the Minister of Education, according to art. 156 paragraph (1) of Law no. 199/2023 - Higher Education Law, as subsequently amended and supplemented; other specific criteria established by the Faculty Council, criteria that cannot fall below the level of national standards approved by Order of the Minister of Education, according to art. 156 paragraph (1) of Law no. 199/2023 - Higher Education Law, as subsequently amended and supplemented. In case of equal scores, the committee will take into account for the tie-breaking, in order, the following criteria:

	• Proposal for the development of the teaching and research career; • the candidate's contributions to increasing the prestige of UCB; • the candidate's contributions to the institutional development of UCB. The competition committee decides the ranking of the candidates and nominates the candidate who has achieved the best results. The chairman of the competition committee draws up a report on the competition, based on the evaluation reports written by each member of the competition committee and respecting the hierarchy of candidates decided by the committee. The report on the competition is signed by each member of the competition committee and by the chairman of the committee. The chairman of the competition committee submits the competition report approved by the committee's decision, the evaluation reports and the original file submitted by the candidate to the Dean of the Faculty. The report of the competition committee, after its validation by the faculty council, is submitted by the dean of the faculty to the senate of the higher education institution, for approval. The Legal Department gives its opinion on the legality of the competition. The university senate analyzes compliance with the procedures established by the higher education institution's own methodology and approves or not the report on the competition. The hierarchy of candidates established by the competition committee cannot be modified by the university senate. Appeals may be filed by a candidate for failure to comply with the standards, respectively the organization and conduct of the competition. The candidate may file an appeal within 3 working days from the communication of the result by the competition committee. The appeal is formulated in writing, registered at the UCB registry and resolved by the appeals committee within 48 hours of its registration, before the publication of the competition results. The contest can be submitted online to rectoratucb@gmail.com. The result of the contest is published on the contest website, within 2 working days from the end of the contest. The result of the contest is also uploaded on the electronic platform managed by the Ministry of Education.
List of documents	A1. Application for registration for the competition, signed by the candidate, which includes a declaration on his/her own responsibility regarding the veracity of the information presented in the file; A2. Proposal for the development of the candidate's career both from a teaching point of view and from a scientific research point of view; the proposal is written by the candidate, and comprises a maximum of 10 pages; A3. Curriculum vitae of the candidate – Europass model (in original, signed by the candidate on each page), which must include: information about the studies completed and the diplomas obtained; professional experience and relevant jobs; information about the research and development

projects and grants that he/she has led as a project director or as a member, indicating for each funding source, the amount of funding and the main publications or patents resulting; information about awards or other elements of recognition of the candidate's scientific contributions; other relevant information;

A4. The candidate's list of works in printed format (in original, signed on each page) which will be structured as follows: a list of a maximum of 10 works considered by the candidate to be the most relevant to his/her professional achievements, which are also included in electronic format in the file and which can also be found in the other categories of works provided for in this article; doctoral thesis or theses; books and chapters in books; articles/studies, published in journals from the main international scientific flow; full-text publications, appearing in proceedings of the main international specialized conferences; research-development-innovation projects based on contract / grant that he/she led as project director or in which he/she worked as a member, indicating the source of funding for each; patents and other industrial property titles; other scientific works and contributions.

A5. Verification sheet of the fulfillment of the standards specific to the position, completed and signed by the candidate in printed format (in original, signed on each page).

A6. Documents relating to the possession of the doctoral degree. A true copy of the doctoral degree and, if the original doctoral degree is not recognized in Romania, a true copy of the certificate of its recognition or equivalence.

A7. Summary of the doctoral thesis in Romanian and in an internationally spoken language (maximum one page for each language);

A8. Other diplomas attesting the candidate's studies: copies of other diplomas attesting the candidate's studies: (baccalaureate diploma, bachelor's degree, master's degree/advanced studies, Certificate attesting psychopedagogical training) or, if the original diplomas are not recognized in Romania, their certificates of recognition or equivalence; copies of other diplomas attesting the candidate's studies. The copies are signed by the candidate for certification "consistent with the original";

A9. Transcripts, diploma supplements or school reports issued for each cycle of studies;

A10. Copy of the identity card certified by the candidate "according to the original" or, as the case may be, of the passport or another identity document drawn up for a purpose equivalent to the identity card or passport;

A11. Copies certified by the candidates "according to the original" of the documents attesting to the change of name, if applicable (marriage certificate or proof of name change);

A12. Declaration on the candidate's own responsibility that he/she is not in any situation of incompatibility provided for in Law no. 199/2023 - Higher Education Law,

	with subsequent amendments and completions and the Framework Methodology issued at national level; A13. Criminal record certificate; A14. Certificate of behavioral integrity; A15. Medical certificate proving that he/she is fit to carry out teaching activities, issued on a specific form adopted by joint order of the Minister of Education and the Minister of Health; A16. Medical certificate for the exercise of the teaching profession, issued in accordance with the provisions of the joint order of the Minister of Education and the Minister of Health; A17. Letters of recommendation, in accordance with art. 13 of GD 1339/2023: for the position of university lecturer, three letters of recommendation from personalities in the respective field, from the country or abroad, external to the higher education institution whose position is being advertised, who have agreed to draw up letters of recommendation regarding the candidate's professional qualities. A18.- A19. Declaration of assumption of responsibility, in original (holograph) signed by the candidate. The declaration must affirm the correctness of the data in the file and the fact that they refer to their own activities and achievements, otherwise the candidate will bear the consequences of false declarations, in accordance with the legislation. A20. A folder containing a maximum of ten of the candidate's most significant works, in scanned form on electronic media (CD/DVD), and books and book chapters will be submitted in physical format. In addition, the electronic media will also include the candidate's list of works in Word format. A21. The document for payment of the competition registration fee. The file will include a cover page and a table of contents. A CD/DVD, or other electronic format, with its entire content scanned, including the folder with the 10 significant works, is also attached to the competition file for transmission to the competition committee. A22. Other documents according to the Competition Methodology for filling vacant teaching and research positions at the "Constantin Brâncuși" University of Târgu-Jiu.
Address where the competition file will be sent	"Constantin Brâncuși" University of Târgu-Jiu, Tineretului Street, no. 4, Târgu-Jiu, Gorj
Commission	
Methodology	Uploading doc, docx or PDF files. The maximum supported file size is 10MB.

Dean,

Prof. PhD.Chemistry, Popa Roxana-Gabriela

Department Director,

Assoc. prof. PhD. Mihaela Maria-Nicoleta