

# COURSE GUIDE – short form

Academic year 2024-2025

Course name <sup>1</sup>	COMPUTER PROGRAMMING AND PROGRAMMING LANGUAGES 1					Course code	1.IMAT.04.DF		
Course type <sup>2</sup>	DF	Category <sup>3</sup>	DI	Year of study	1	Semester	1	Number of credit points	5

Faculty	Materials Science and Engineering	Number of teaching and learning hours <sup>4</sup>					
Field	Materials Engineering	Total	L	T	LB	P	IS
Specialization	Materials Science	125	28	-	42	-	55

Pre-requisites from the curriculum <sup>5</sup>	Compulsory	Not the case
	Recommended	Not the case

General objective <sup>6</sup>	Initiating students in knowing the concepts, theories and basic methods for materials designing using CAD techniques (enunciation, use, application), in the application of values and ethics in the engineer profession, promoting of logic reasoning and practical application by knowing, programming and use of computer exemplifying on a Windows platform and a high level programming language.
Specific objectives <sup>7</sup>	They are being cultivated abilities of using the information technology for programming simple task specific applications.
Course description <sup>8</sup>	Von Neumann computer architecture; memory; processor; hardware structure of PC; operating system; algorithms; programming languages; Fortran 90 language; intrinsic data; scalar data; integer data; logical data; real data; storing; lexical atoms; expressions; Fortran characters set; names; constants; variables; type declaring; arithmetic expressions; character expressions; relation expressions; logical expressions; intrinsic functions; processing instructions: files; instructions: READ; WRITE; assignment instruction; logical schemes; the structure theorem; control constructions; structured programming; Fortran programs sequences of simple instructions; source code, compilation, linking and running; execution control: executable instructions blocks; IF construction; instructions Logical IF and GO TO; DO construction; simple DO looped; DO WHILE loop; instructions GO TO, CONTINUE and STOP; iteration control DO loops; tables; Fortran procedures: subroutines; functions; subroutines libraries; program testing techniques.

Assesment		Schedule <sup>9</sup>	Percentage in the final grade (minimum grade) <sup>10</sup>
A. Final assessment form <sup>11</sup> :	Class tests along the semester	0%	50% (minimum 5)
	Home works	0%	
	Other activities	0%	
	Examination procedures and conditions: Probe 1: closed question; oral examination; 30% Probe 2: closed question; oral examination; 30% Probe 3: achieving a computer program; writing; 40%.	100% (minimum 5)	
C. Laboratory	Activity during laboratory – open and closed questions, practical demonstration for using software.		50% (minimum 5)

Course organizer	Assoc. Prof. Ph.D. Eng. Gheorghe BĂDĂRĂU
Teaching assistants	Teach.Assist.Ph.D.Eng. Elena-Ionela CHERECHEȘ Teach.Assist.Ph.D.Eng. Ana-Maria ROMAN

---

<sup>1</sup>Course name from the curriculum

<sup>2</sup> DF – fundamental, DID – in the field, DS – specialty, DC – complementary (from the curriculum)

<sup>3</sup> DI – imposed, DO –optional, DL – facultative (from the curriculum)

<sup>4</sup> Points 3.8, 3.5, 3.6a,b,c, 3.7 from the Course guide – extended form (L-lecture, T-tutorial, LB-laboratory works, P-project, IS-individual study)

<sup>5</sup> According to 4.1 – Pre-requisites - from the Course guide – extended form

<sup>6</sup> According to 7.1 from the Course guide – extended form

<sup>7</sup> According to 7.2 from the Course guide – extended form

<sup>8</sup> Short description of the course, according to point 8 from the Course guide – extended form

<sup>9</sup> For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period

<sup>10</sup> A minimum grade might be imposed for some assessment stages

<sup>11</sup> Exam or colloquium