



**2nd Nonlinear
Dynamics and
Complexity**
October 4-6, 2021

ONLINE CONFERENCE




CERTIFICATE

WE CERTIFY THAT

CRISTINA MURESAN

has given an Invited Lecture entitled
FRACTIONAL ORDER CONTROL: STEP TOWARDS INDUSTRY USE
at the Second Online Conference on Nonlinear Dynamics
and Complexity, which took place at ISEP, Porto, Portugal,
October 4-6 2021.



PROFESSOR DOUTOR TENREIRO MACHADO
CHAIR OF THE CONFERENCE



PROFESSORA DOUTORA CARLA PINTO
CHAIR OF THE ORGANIZING COMMITTEE



Authors

- ⇒ Deadlines & Copyright Information
- ⇒ Initial Papers Submission
- ⇒ Invited Sessions
- ⇒ Final Submission
- ⇒ Visa Information

Invited Sessions

New trends in modelling and control of medical systems

Eva Henrietta Dulf, Cristina Ioana Muresan

Code ti1a6

Novel technologies in medical devices, rapidly expanding knowledge in science and biomedical engineering has led the speed in innovation of new medical ideas. Next generation image-guided systems; advanced non-invasive brain-computer interfaces; wearable health devices for monitoring; and, display visualization techniques are some examples to name a few. On the other side control theory is not only a fundamental notion for understanding feedback paths in physiological systems, but also a particular concept for building artificial organs and in controlling artificial devices (pacemakers, insulin injection devices, anesthesia). Control engineering also profoundly impacts the everyday lives of a large part of the human population including the disabled and the elderly who use assistive and rehabilitation robots for improving the quality of their lives and increasing their independence. The present special session intends to curate novel advances in the development and application of control engineering techniques in medicine to address ever-present challenges of healthcare. Contributions are invited in topics that include, but are not limited to:

- Machine learning methods for modeling, control and optimization
- Theoretical and implementation challenges which arise in medical systems
- Control engineering tools for solving specific system design problems in medicine

Real time process control and diagnosis

Ciprian Lupu, Dumitru Popescu

Code m5yj7

The session is opened for research presentations that bring interesting, relevant scientific work and innovative contributions in the field of modern process control and system diagnosis. The session provides opportunities for researchers and specialists to offer their recent developments and results in control and diagnosis, applied in different domains with technical and economical interest: Energy, Chemistry, Petro-chemistry, Aerospace, Transport, Automotive, Bio-technology. Communications etc. We evaluate and discuss during this session about performance and security issues that arise in process exploitation and management and optimization in real-time applications, by means of automatic control resources and information support. Appreciated papers should offer modern solutions related to control and diagnosis of systems structures, supported by an adequate theoretical background, implemented and validated in simulation and on industrial applications.

Complex data processing for monitoring, diagnosis, and control

Loretta Ichim, Dan Popescu

Code 9d967

The session aims to underline the intrinsic connection between complex data processing, on one hand, and two important actions in different fields: monitoring and control, on the other hand. The applications of complex images (like texture and fractals), time series, and neural networks in many domains (industry, medicine, agriculture, environment, transportation, and so on) needs interdisciplinary knowledge and effectively solve many encountered problems. This special session at the 25th International Conference on System Theory, Control and Computing (ICSTCC 2021) provides a forum for researchers and practitioners to present and discuss advances in the research and development of intelligent systems for complex data processing and interpretation based on efficient feature selection and neural networks in the field of monitoring, control and diagnosis. All session papers need to have a high scientific level and will be selected based on their relevance to the session topics. The included topics are the following (but not limited): Criteria for feature selection, Image processing for real time control, Traffic control based on images, Medical diagnostic systems based on complex data processing, Assistive technologies based on data processing, UAV and robot guidance based on image interpretation, Quality control based on image processing, Texture analysis, Parallel processing of data, Neural networks for data classification and prediction.

Organized by:



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"Gheorghe Asachi" Technical University of Iasi



Faculty of Automatic Control, Computers, Electrical and
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Department of Automation and Applied Informatics,
Department of Computers and Information Technology,
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Institute of Electrical and Electronics Engineers
Control Systems Society

Laboratory no.5.

**Practical application on the Modular Servo System:
controlling the speed of a DC motor**

Description of the experimental unit

The Modular Servo System is represented in Fig. 1. The entire unit is equipped with sensors for measuring the rotational speed of the DC motor (leftmost component). To control the DC motor a voltage signal is applied ranging from $[-12, +12]$ V and scaled in a $[-1, +1]$ range. The experimental unit has several components attached to create friction, inertia, etc.

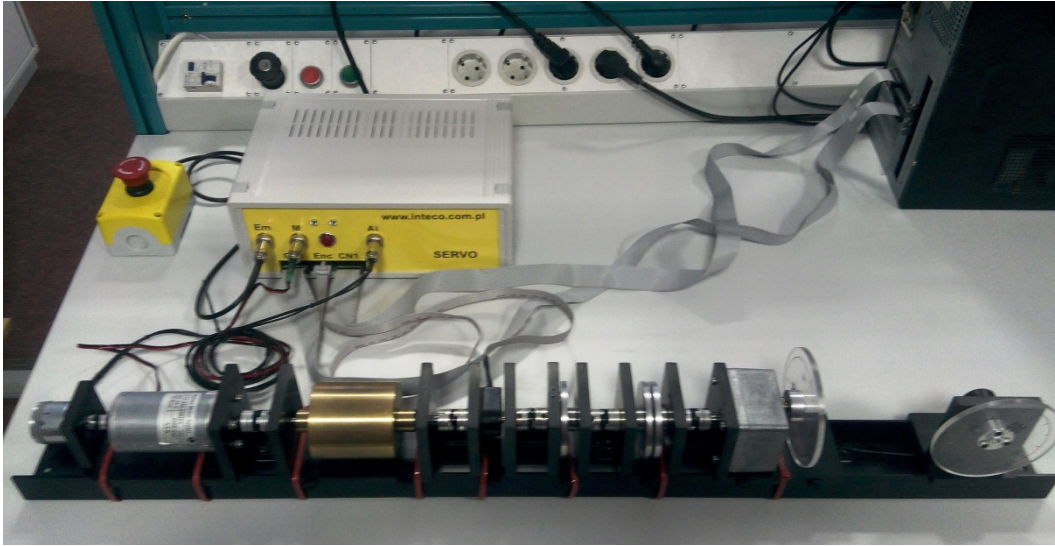


Fig. 1. Modular servo system

The nonlinear model of the modular servo system unit in Fig. 1 is indicated in Fig. 2 and is available as `servo_model_n.mdl`. To run the Simulink file save it in the same folder as the Matlab file `servo_chstat.mat`, which contains necessary Simulink parameters. Load the mat file into the Matlab workspace and then run the Simulink file `servo_model_n.mdl`. Check how the velocity of the servo system changes according to the prespecified voltage signal. Check also the type of voltage signal used at the input. The velocity of the servo system will be the output signal (y) that needs to be controlled by manipulating the voltage (input signal u) applied to the DC motor. The input signal has been scaled in the $[-1, +1]$ range. In order to control the velocity of the servo system, a process model needs to be determined.

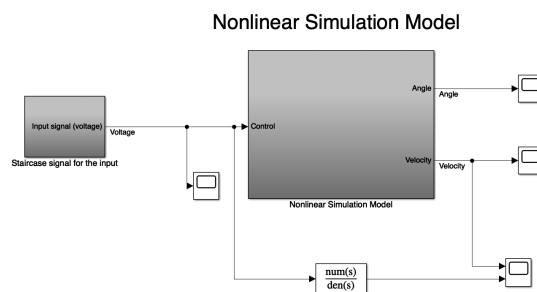


Fig. 2. Nonlinear Simulink model of the modular servo system

In the servo_model_n.mdl Simulink file such a mathematical model of the process has been pre-determined. Compare the output of the mathematical model with the actual output of the servo system. These two signals are similar only in a small operating range. The comparative figure clearly shows that the pre-determined mathematical model of the servo system is only valid in this small operating range.

Conclusion: *The real servo system is nonlinear. We cannot model it with a (linear) transfer function (in all operating points). We normally choose a proper operating point for a nonlinear system and model it with a transfer function in that operating point. This way, the transfer function is able to capture the essential dynamics of the nonlinear model (in the chosen operating point).*

Assume a different operating range is considered for the servo system: the velocity should be around 60 rpm. Run the Servo_model_ident.slx file a check the velocity and voltage signals. The following code is useful to generate the signals and render them proper for system identification.

```
% identification servo motor
close all
load servo_chstat

sim('Servo_model_ident') % it runs with a fixed step size of 0.002s
figure(1), plot(y(:,1),y(:,2)), hold on
figure(1), plot(y(10/0.002:end,1),y(10/0.002:end,2), 'r--')

%normalize data to make it simpler for identification and shift the signal
%to start from 0
t=0:0.002:10+0.002;
y_exp=y(10/0.002:end,2)-y(10/0.002,2);
figure(2), plot(t,y_exp), hold on
```

A mathematical model of the following form has to be determined:

$$H_f(s) = \frac{y(s)}{u(s)} = \frac{k}{Ts+1} \quad (1)$$

where k and T are the process gain and time constant, respectively. To identify the process transfer function in (1), use the signal y_exp as generated with the code above. Determine the process transfer function in (1) based on well-known graphical identification methods.

*Hint: $k=y_{ss}/u_{ss}$ – steady state values for the output/input signals; to determine T you can estimate the settling time for $H_f(s)$ based on the generated step response and then compute T since $t_s=4*T$ (t_s - settling time). Do not forget the input signal is not 1!*

Plot the experimental data (using $plot(t,y_exp)$), as well as the step response of your $H_f(s)$ on the same figure to evaluate how well your model approximates the dynamics in the experimental data. To plot the step response of $H_f(s)$ do not forget that the input signal has to be the same as in the experimental data. Additionally, the time scale has to be the same. If approximation is inaccurate, readjust k and T accordingly, until a better fit is obtained.

Validate your transfer function on a different set of experimental data. Run the Servo_model_validate.mdl file. The following code can be used to generate validation data.

```

% model validation
input_change=0.07 % run the file with 0.07, validate the transfer function,
then check for -0.05
sim('Servo_model_validate') % it runs with a fixed step size of 0.002s
figure(3), plot(y(:,1),y(:,2)), hold on
figure(3), plot(y(10/0.002:end,1),y(10/0.002:end,2), 'r--')

t=0:0.002:10+0.002;
y_exp=y(10/0.002:end,2)-y(10/0.002,2);
figure(4), plot(t,y_exp), hold on

H=tf(k,[T 1]);
ysim=input_change*step(t,H)
figure(4), plot(t,ysim,'k--')

```

How well is your transfer function able to model the servo system? *Hint: use the sum of squared error to check the results for both an input change of 0.07, as well as -0.05.*

Controller design, tests and validation.

Design a controller such that the following performance specifications are met: overshoot $\sigma = 5\%$ and settling time $t_s = 1.5$ s, along with a zero steady state error. (Hint: you can use Guillemin-Truxal). Once the transfer function of the controller $H_c(s)$ has been obtained, choose a proper sampling period (Don't forget about Shannon!) and a discretization method and determine $H_c(z^{-1})$.

Design the closed loop system in Simulink with the analog controller $H_c(s)$. Don't forget that your step reference signal should be the same as in the identification ($w=60$ rpm). Redesign the controller if the performance specifications are not met.

Design the closed loop system in Simulink with the digital controller $H_c(z^{-1})$. Don't forget that your step reference signal should be the same as in the identification ($w=60$ rpm). Redesign the controller if the performance specifications are not met.

Compare the results you obtain in terms of overshoot and settling time, when using the analog vs the digital controller.

Add a scope on your digital controller output and check the control signal as well. Save the figure showing the control signal. *Is it in the required range?*

Implementation of the controller on the nonlinear servo system.

Implement your discrete time controller in the Servo_model_ctrl.slx Simulink file and run the Simulink file to check the performance of the overall closed loop system. Determine the overshoot and settling time for each operating point (50, 55, 60, 65, 60, 55, 50, 45). Conclude upon the ability of the controller to meet the performance specifications in all operating points (robust controller or not).

Hint: The overshoot is estimated from the experimental data as: $\sigma = \frac{y_{max} - y_{ss}}{y_{ss} - y_0} 100 [\%]$, where y_{max} is the maximum output amplitude for the operating point, y_{ss} is the steady state value and y_0 is the initial starting value for the output signal. The settling time is the time required for the output to reach $\pm 2\%$ of its steady state value with respect to the initial value: $(y_{ss} - y_0)$. An example is provided below, in Fig. 3.

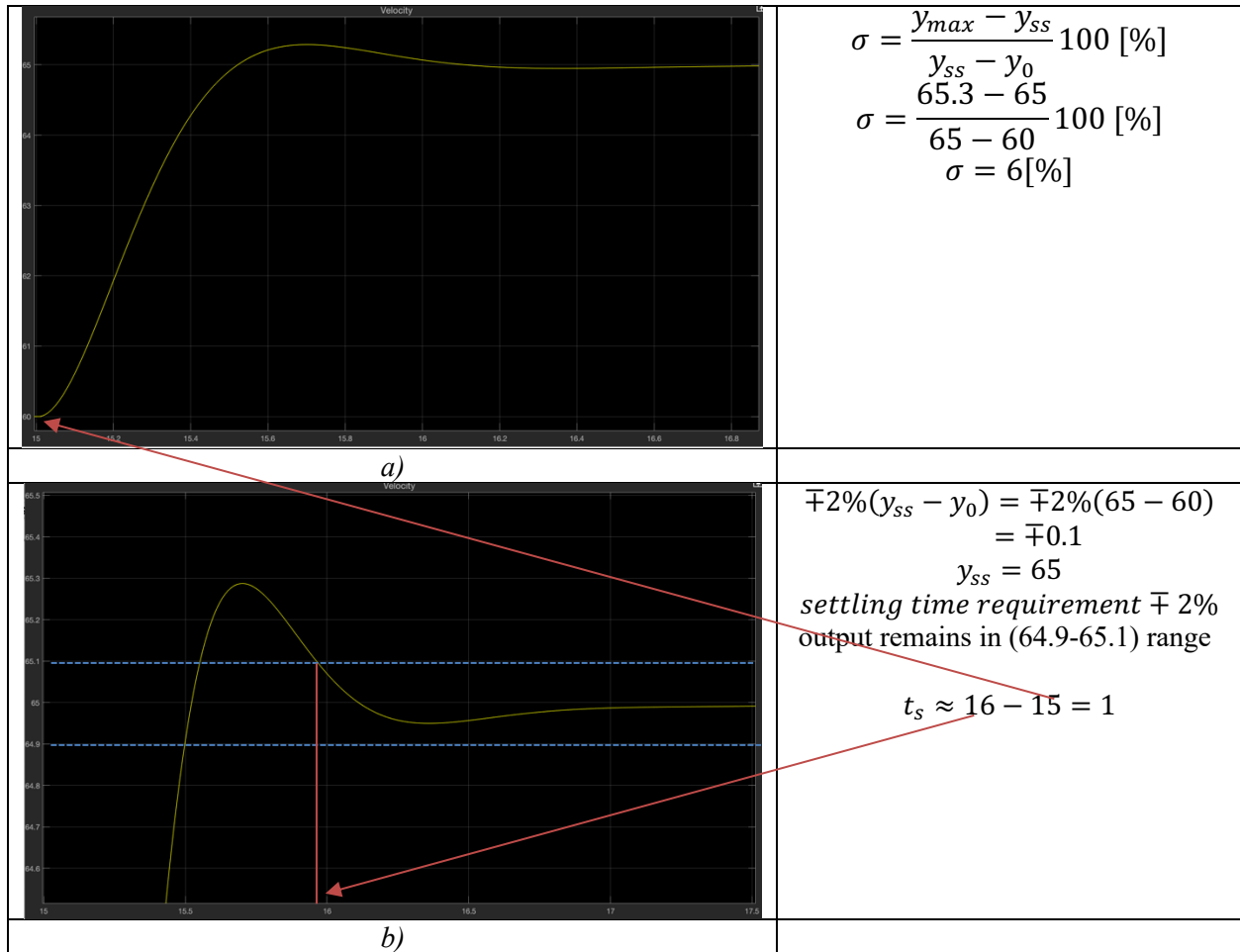


Fig. 3. a) output signal b) zoomed in output signal

ACSC 2021 – Student Conference Program

Session 1

Saturday, June 26 th , 2021. 8.30 – 10.15 Chair session Rusu- Both Roxana Place Teams Platform (code: ntw6hwx)		
Paper ID	Papers	
2	Authors	<i>Stoleru Cristian-Andrei, Dulf Eva Henrietta, Lidia Munteanu</i>
	Title	Automated Detection of Celiac Disease using Machine Learning Algorithms
3	Authors	<i>Motorga Roxana - Maria</i>
	Title	Monitoring the environmental parameters in residential areas
5	Authors	<i>Fildan Claudiu, Mureşan Cristina</i>
	Title	Decoupling and Decentralized PID Control of the General Anesthesia System
6	Authors	<i>Oancă Denisa-Maria</i>
	Title	Monitoring And Control Systems for Buildings: Ambilight Lighting System
8	Authors	<i>Pică Anca – Elena, Achim Daniel</i>
	Title	KNX in Building Automation
9	Authors	<i>Uşiu Graţiana-Daniela</i>
	Title	Model Predictive Control in general anesthesia with emphasis at influence of Propofol on BIS output
20	Authors	<i>Tudor Sântejudean, Buşoniu Lucian</i>
	Title	Path-aware optimistic optimization for a mobile robot

Session 2

Saturday, June 26 th , 2021. 8.30 – 10.45 Chair session Șușcă Mircea Place Teams Platform (code: ntw6hwx)		
Paper ID	Papers	
4	Authors	<i>Iacob Casian George, Sântejudean Tudor, Bușoniu Lucian</i>
	Title	Optimizing a 2D scalar function with a drone
10	Authors	<i>Stan Raluca – Elena</i>
	Title	Modeling of PV panel with MPPT techniques
11	Authors	<i>Mureșan Daiana Emanuela</i>
	Title	Face recognition using Viola-Jones and Convolutional Neural Network
12	Authors	<i>Sütő Boglárka</i>
	Title	Swing-up control for a rotary inverted pendulum
14	Authors	<i>Seicean Maria, Șușcă Mircea</i>
	Title	Optimal Control Techniques for A Nonlinear Half-Car Active Suspension System
17	Authors	<i>Ciorcaș Cristian, Goia Emanuel, Zsófia Lendek</i>
	Title	State Estimation and Control of an Inverted Pendulum on a Cart
19	Authors	<i>Isărescu Mihai, Șușcă Mircea</i>
	Title	A Comparison Between Popular State Estimators for Position Tracking of an Autonomous Vehicle
22	Authors	<i>Bunta Renata-Orsolya, Șușcă Mircea</i>
	Title	Design, Implementation, and Monitoring of an Automatic Irrigation System
23	Authors	<i>Fodor Arpad, Mihaly Vlad</i>
	Title	Control methods used in thermal power plants

Session 3

Saturday, June 26 th , 2021. 8.30 – 10.45 Chair session Cuibus Octavian Place Teams Platform (code: ntw6hwx)		
Paper ID	Papers	
7	Authors	<i>Ciobotaru Alexandru, Goța Dan Ioan</i>
	Title	Facial Landmark Detection Using Deep Neural Networks and Computer Vision
		8:30 – 8:45
13	Authors	<i>Corcheș Paul Cristian</i>
	Title	Small-Scale Autonomous Vehicle Prototype
		8:45 – 9:00
15	Authors	<i>Berindea Mihaela, Bodi Vasile, Ebîncă Andra, Nica Horațiu</i>
	Title	Cyber-Physical Attacks on Cyber- Physical Systems
		9:00 – 9:15
16	Authors	<i>Cucuian Vlad, Iliescu Denis, Man Cătălin</i>
	Title	Stack-Based Buffer Overflow
		9:15 – 9:30
18	Authors	<i>Ebîncă Andra-Maria</i>
	Title	Web Application for Donation Site
		9:30 – 9:45
21	Authors	<i>Picioruș Ovidiu-Mihai</i>
	Title	Shop Management Application
		9:45 – 10:00
24	Authors	<i>Nemes-Caramaliu Alice, Stan Ovidiu Petru</i>
	Title	The Need for an API as a Product for Sentiment Analysis of Audio Data - Smart Feelings Use Case
		10:00 – 10:15
25	Authors	<i>Pașcalău Marius-Dorinel, Misaroș Marius</i>
	Title	Exam and laboratory applications management system
		10.15 – 10.30
26	Authors	<i>Băluț Cătălin</i>
	Title	Platform for e-Voting
		10.30 – 10.45

UNIVERSITÉ DU LUXEMBOURG
Prof. Dr Inès CHIH

UNIVERSITÉ DE CARTHAGE
Prof. Dr Lilia SIDHOM

TECHNICAL UNIVERSITY OF CLUJ-
NAPOCA
Prof. Cristina I. MURESAN

Esch-sur-Alzette, 19 September 2023

Thesis supervision committee

In agreement with article 37 of the modified University Law of June 27, 2018, and the Study Regulations in force, on the delivery of the doctoral degree by the University of Luxembourg, the thesis supervision committee for Mr BELGACEM Heni is composed as follows:

- Prof. Dr Inès CHIH, UNIVERSITÉ DU LUXEMBOURG, Supervisor
- Prof. Dr Lilia SIDHOM, UNIVERSITÉ DE CARTHAGE
- Prof. Cristina I. MURESAN, TECHNICAL UNIVERSITY OF CLUJ-NAPOCA

Title of the thesis: « **Self-healing and Fault Tolerant Control for Smart Manufacturing** ».

The mission of the thesis supervision committee is to monitor the work of the doctoral candidate. The committee meets at least once a year with the doctoral candidate, in order to evaluate the candidate's progress, including scientific achievements, publications and ECTS acquisition. After each meeting a report is written by the committee members, shared with the candidate and signed by all parties. This report mentions all deviations from the initial thesis work plan and the measures jointly taken to address them.



Simone P. Niclou
Vice-rector for research

CONSULTANCY CONTRACT

The University of the South Pacific ("USP") offers **Prof Cristina Muresan** a consultancy to undertake duties of **External Examiner of PhD's Thesis** in the School of Information Technology, Engineering, Mathematics and Physics (STEMP).

The University of the South Pacific
Private Mail Bag, Laucala Campus
Suva, Fiji

Ph: (679) 323 1000
Fax: (679) 323 1518
www.usp.ac.fj

3 May 2023

Prof Cristina Muresan

1. RELATIONSHIP OF CONTRACTOR

The relationship between the Consultant and USP is that of independent contractor. The terms of this contract establishes that the Consultant is **not** an employee, partner or agent of USP.

2. SERVICES TO BE PROVIDED BY THE CONSULTANT

The Consultant shall within a period of **eight (8) weeks** provide the service of External Examiner for the following Master's Thesis:

Student Name: Anjana Ranjan

Student ID: S11189567

Title of Thesis: "Fractional controller techniques for unstable and integrating plants with time"

3. CONFLICT OF INTEREST

Acceptance of this contract warrants that the Consultant has no conflict of interest in the performance of the services outlined at the date of this Agreement; and, immediately becoming aware of the existence, or possibility, of a conflict of interest affecting the Consultant during the term of this Agreement, the Consultant will advise USP in writing of the said conflict of interest.

4. DUE CARE

The Consultant will pay due care and attention to the *Information for Examiners of Supervised Research Project, Masters' Thesis and PhD Dissertation* and the University Rules and Regulations relating to Examination of Master's Thesis as outlined in the University Calendar.

5. REPORTING

The Consultant will complete the standard USP PhD *Examiners Report Form* adhering to the *Examiner's Report Guidelines*. This form will be accompanied with a detailed narrative report that clearly states one of the following recommendations:

- i. That the degree be awarded to the candidate; or
- ii. That additional work on the thesis be undertaken by the candidate and the thesis be re-examined by the examiner; or,
- iii. That *substantive* additional work on the thesis be undertaken by the candidate and the thesis be re-examined by all three examiners concerned.

6. THESIS COPIES

A hardcopy of the thesis will be couriered to the postal or residential address provided. The Consultant may request an e-copy if that is the preferred reading and assessment mode. The hardcopy of the thesis must be returned to the School of Information Technology, Engineering, Mathematics and Physics(STEMP) upon completion of examination.

7. CONFIDENTIALITY

By accepting this appointment, the Consultant agrees **not** to use or disclose any confidential information relating to USP or to any of its staff and students to any third party, either during this appointment or after its termination. Confidential information shall include:

- a) Information about the University's exams, marking systems, investigations, and individual students; and,
- b) The contents of any theses, dissertations and/or any other papers/publications prepared by students and submitted to the Consultant.

This obligation shall not apply to any such information that has been legally released into the public by the student or the University.

8. COMMUNICATION WITH CANDIDATE

Under no circumstance will the report or parts thereof be communicated to the candidate or any third party other than the designated School Administrative Representative.

9. USP OBLIGATIONS

- 9.1 USP will to the best of its ability and as soon as practicable make available to the Consultant all relevant instructions, information, documentation, data or any other material as required for the performance of the services outlined.
- 9.2 USP will provide logistical, administrative and managerial support where necessary to assist the Consultant to perform the services outlined.
- 9.3 USP will pay the Professional fees indicated in the 'Fees and Allowances Payable' Section of this Contract upon receipt of *Examiners Report Form* and a detailed narrative Examiner's Report.

10. TERMINATION

- 10.1 If in the reasonable opinion of USP, the performance of the Consultant is unsatisfactory, USP may give the Consultant notice of its dissatisfaction and grounds for its dissatisfaction. If the Consultant fails to address the grounds for dissatisfaction as notified to the Consultant by USP, to the reasonable satisfaction of USP, USP may terminate this Agreement by giving written notice to the consultant.
- 10.2 If in the reasonable opinion of USP, the Consultant is guilty of any dishonesty, serious misconduct or serious neglect of duty, or conflict of interest in or in connection with any of the consultant's obligations under this Agreement, USP may terminate this Agreement by giving written notice to the consultant.
- 10.3 If USP fails to meet any of its obligations under this Agreement the Consultant after reasonable notice to USP to remedy the failure, and if USP continues to fail to meet its obligations, the Consultant may terminate this Agreement by giving written notice to the University.

11. ENTIRE AGREEMENT AND VARIATION

- 11.1 This contract constitutes the entire Agreement of the parties relating to the services to be provided by the Consultant and any previous agreements, understandings and negotiations cease to have any effect.

11.2 This Agreement may not be varied or extended except by writing in the form of a Variation of Agreement which has be signed by both parties.


12. FEES AND ALLOWANCES PAYABLE BY USP TO THE CONSULTANT

Full payment of Professional Fees is conditional upon the completion of Examiner duties and will be processed through a direct bank deposit upon receipt of written reports. Payment will be subject to Fiji taxation laws.

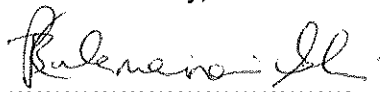
Item	Description	Amount Payable
Professional Fees	Examination of PhD's Thesis within eight (8) weeks and completion of the <i>Examiner's Report Form</i> and detailed narrative Report.	\$750 FJD

Budget Confirmation

Head of School – Signature


.....

Yours sincerely;


.....

Mr. Pita Bulamainavalu

Acting Executive Director, People and Workforce Strategy

Receipt of a signed copy of this Agreement within fourteen (5) days of receipt, shall be taken to mean acceptance of the specified terms and conditions outlined in this Agreement.

I, _____ hereby accept this consultancy under the terms and conditions outlined above.

Signature: _____

Date: _____

Fisa individuala a cadrului didactic

Anul universitar 2021 - 2022; Semestrul 1

Cadru didactic Muresan Cristina Ioana

Disciplina Ingineria reglarii automate I - curs, laborator

Facultatea Facultatea de Automatica si Calculatoare

Programul de studiu Automatica si Informatica Aplicata (in limba engleza)-lic

Anul 3 Semestrul 1

Departament Automatica

Facultate departament Facultatea de Automatica si Calculatoare

Nr	Aspecte evaluate	T1	T2	Calificativ		N1	Ind1 (%)	N2	Ind2 (%)
1	Cum apreciati modul de predare a cadrului didactic ?	19	19	1	Foarte bun	17	89.47	17	89.47
				2	Bun	2	10.53	2	10.53
				3	Satisfacator	0	-	0	-
				4	Nesatisfacator	0	-	0	-
2	Cum apreciati relatia cadru didactic - student ?	19	19	1	Foarte buna	17	89.47	17	89.47
				2	Buna	2	10.53	2	10.53
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
3	Cum apreciati calitatea informatiilor transmise, a suportului de curs/aplicatii si/sau a materialelor bibliografice (daca este cazul) ?	19	19	1	Foarte buna	17	89.47	17	89.47
				2	Buna	2	10.53	2	10.53
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
4	Modalitatea de evaluare a activitatii si cunostintelor a fost corecta si obiectiva ?	18	18	1	Da	17	94.44		
				2	Partial	1	5.56		
				3	Nu	0	-		
				4	Nu am fost evaluat	0	-		
5	Care a fost gradul d-voastra de prezenta la activitatea sustinuta de cadru didactic ?	19	19	1	0 - 20 %	0	-		
				2	20 - 40 %	1	5.26		
				3	40 - 60 %	0	-		
				4	60 - 80 %	5	26.32		
				5	80 - 100 %	13	68.42		
6	In ce masura activitatile didactice au fost desfasurate in limba specializarii urmate ?	19	19	1	0 - 20 %	0	-	0	-
				2	20 - 40 %	0	-	0	-
				3	40 - 60 %	0	-	0	-
				4	60 - 80 %	0	-	0	-
				5	80 - 100 %	19	100.00	19	100.00
				6	Nu este cazul	0	-	0	-

Explicatii :	T1 - numarul total de raspunsuri la o anumita intrebare
	N1 - numarul total de calitative de un anumit tip din cadrul T1
	T2 - valoarea T1 din care se scad raspunsurile studentilor care au avut prezenta la activitatea respectiva intre 0-20% (rsapnsurile la 13a)
	N2 - numarul total de calitative de un anumit tip din cadrul T2
	$\text{Indx}(\%) = (N_x/T_x) \cdot 100$ - procentul calificativului fata de numarul total de raspunsuri

Observatii / Comentarii
<p>Am apreciat, inca de la primele cursuri, faptul ca dna profesor a fost foarte deschisa la opiniile noastre si ca a cerut constant feedback, astfel incat sa se poata adapta si cerintelor studentilor. Materialele de curs au fost foarte bine alese si structurate, fiind foarte usor de urmarit in timpul cursului, dar mai ales in perioada sesiunii, fiind pline de exemple si explicatii pentru diverse probleme.</p> <p>Cursul a fost pus destul de nepotrivit un orar, cu un laborator exact dupa, astfel ca, eu personal, dar si alti colegi nu am putut asista activ pe toata durata cursului. Cred ca ce ar ajuta putin interactiunea ar fi ceva intrebari pe parcursul cursului, un mic quiz sau alte mici cerinte care sa dea oportunitatea studentilor activi sa intre in discutii. (In general, simplul: aveti intrebari? desi foarte de apreciat, este o intrebare destul de dificila pentru un student care, e posibil, sa nu fie atat de familiar cu subiectul, sau care inca incearca sa inteleaga conceptele. Totodata, e mult mai simplu de raspuns superficial, cu un "da, totul este clar", iar in general studentii nu sunt obisnuiti sa puna intrebarile care sa suprinda aspecte importante.)</p> <p>In concluzie, in opinia mea, cel mai eficient mecanism este sa puneti d-voastra intrebarile care ne-ar face sa intelegem cel mai bine subiectul, sau care ne-ar face sa gandim pe subiect. As vrea sa adaug ca subiectele de examen si modul de desfasurare au fost excelente si consider ca este un mod de evaluare foarte bun, care testeaza cunostinte si intelegere, nu memorie.</p> <p>Felicitari si multa bafta in continuare! Multumim pentru tot!</p>

Doamna profesoara a fost si inca este prietena noastra. Ne intelege si ne vorbeste pe intelesul nostru, incurajandu-ne. M-a marcat faptul ca dupa examen, doamna profesoara ne-a reexplicat ceea ce nu a fost clar, si ne-a incurajat ca in urmatorul semestru sa-i dam mai mult feedback ca sa ne poata ajuta mai mult

Mulumim mult pentru dedicarea pe care o aveti. A fost o placere sa particip la curs/laborator (sorry pentru linistea de pe Teamns, cel putin pt mine e foarte greu sa interactionez acolo). Cred ca sunteti printre putinii profesori pe care nu iti e frica sa ii intreb ceva. Mereu interesata si implicata pot doar sa va multumesc pentru ceea ce faceti. :)

O profesoară extraordinară care m-a făcut să apreciez materia de Control Engineering cu toate că detestam ideea de sisteme. Multă stimă și respect pentru dânsa. Mai rar dai de profesori atât de înțelegători, implicați în ceea ce fac și cu dorință de a te face să înțelegi. Un profesor de nota 10.

Un cadru didactic plin de energie și dedicatie, cu materiale bine structurate. Apreciez faptul ca s-a pus accentul pe intelegerea notiunilor si pe modul de a gandi si a rezolva problemele, si nu pe a memora informatii.

Fisa individuala a cadrului didactic

Anul universitar 2021 - 2022; Semestrul 2

Cadru didactic Muresan Cristina Ioana

Disciplina Ingineria reglarii automate II - curs, laborator

Facultatea Facultatea de Automatica si Calculatoare

Programul de studiu Automatica si Informatica Aplicata (in limba engleza)-lic

Anul 3 Semestrul 2

Departament Automatica

Facultate departament Facultatea de Automatica si Calculatoare

Nr	Aspecte evaluate	T1	T2	Calificativ		N1	Ind1 (%)	N2	Ind2 (%)
1	Cum apreciati modul de predare a cadrului didactic ?	12	12	1	Foarte bun	11	91.67	11	91.67
				2	Bun	1	8.33	1	8.33
				3	Satisfacator	0	-	0	-
				4	Nesatisfacator	0	-	0	-
2	Cum apreciati relatia cadru didactic - student ?	12	12	1	Foarte buna	11	91.67	11	91.67
				2	Buna	1	8.33	1	8.33
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
3	Cum apreciati calitatea informatiilor transmise, a suportului de curs/aplicatii si/sau a materialelor bibliografice (daca este cazul) ?	12	12	1	Foarte buna	12	100.00	12	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
4	Modalitatea de evaluare a activitatii si cunostintelor a fost corecta si obiectiva ?	12	12	1	Da	12	100.00		
				2	Partial	0	-		
				3	Nu	0	-		
				4	Nu am fost evaluat	0	-		
5	Care a fost gradul d-voastra de prezenta la activitatea sustinuta de cadrul didactic ?	12	12	1	0 - 20 %	0	-		
				2	20 - 40 %	0	-		
				3	40 - 60 %	1	8.33		
				4	60 - 80 %	1	8.33		
				5	80 - 100 %	10	83.33		
6	In ce masura activitatile didactice au fost desfasurate in limba specializarii urmate ?	12	12	1	0 - 20 %	0	-	0	-
				2	20 - 40 %	0	-	0	-
				3	40 - 60 %	0	-	0	-
				4	60 - 80 %	1	8.33	1	8.33
				5	80 - 100 %	11	91.67	11	91.67
				6	Nu este cazul	0	-	0	-

Explicatii :	T1 - numarul total de raspunsuri la o anumita intrebare
	N1 - numarul total de calitative de un anumit tip din cadrul T1
	T2 - valoarea T1 din care se scad raspunsurile studentilor care au avut prezenta la activitatea respectiva intre 0-20% (rsapunsurile la 13a)
	N2 - numarul total de calitative de un anumit tip din cadrul T2
	Indx(%) = (Nx/Tx)*100 - procentul calificativului fata de numarul total de raspunsuri

Observatii / Comentarii
<p>Îmi plăcea modul de lucru în ambele semestre :)</p> <p>Partea de suport era de tip scurt și la obiect, cu multe multe exemple</p> <p>Modul de predare era excepțională, am primit răspuns la fiecare întrebare, am fost încurajați să punem întrebări și să participăm în discuții</p> <p>A fost admirabil pasiunea Dumneavoastră față de predare și de materie, și modul în care orice efort depus a fost apreciat, ne-ați arătat punctele noastre forte în locul punctelor slabe</p> <p>Mulțumesc mult de experiență</p>

Un cadru didactic cu adevarat dedicat si pasionat de ceea ce face.

Fisa individuala a cadrului didactic

Anul universitar 2022 - 2023; Semestrul 2

Cadru didactic Muresan Cristina Ioana

Disciplina Ingineria reglarii automate II - curs

Facultatea Facultatea de Automatica si Calculatoare

Programul de studiu Automatica si Informatica Aplicata (in limba engleza)-lic

Anul 3 Semestrul 2

Departament Automatica

Facultate departament Facultatea de Automatica si Calculatoare

Nr	Aspecte evaluate	T1	T2	Calificativ		N1	Ind1 (%)	N2	Ind2 (%)
1	Cum apreciati modul de predare a cadrului didactic ?	15	11	1	Foarte bun	15	100.00	11	100.00
				2	Bun	0	-	0	-
				3	Satisfacator	0	-	0	-
				4	Nesatisfacator	0	-	0	-
2	Cum apreciati relatia cadru didactic - student ?	15	11	1	Foarte buna	15	100.00	11	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
3	Cum apreciati calitatea informatiilor transmise, a suportului de curs/aplicatii si/sau a materialelor bibliografice (daca este cazul) ?	15	11	1	Foarte buna	15	100.00	11	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
4	Modalitatea de evaluare a activitatii si cunostintelor a fost corecta si obiectiva ?	15	11	1	Da	14	93.33		
				2	Partial	1	6.67		
				3	Nu	0	-		
				4	Nu am fost evaluat	0	-		
5	Care a fost gradul d-voastra de prezenta la activitatea sustinuta de cadrul didactic ?	15	11	1	0 - 20 %	4	26.67		
				2	20 - 40 %	2	13.33		
				3	40 - 60 %	3	20.00		
				4	60 - 80 %	1	6.67		
				5	80 - 100 %	5	33.33		
6	Cum apreciati acuratetea informatiilor transmise in limba programului de studiu urmat ?	15	11	1	Foarte buna	15	100.00	11	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-

Explicatii :	T1 - numarul total de raspunsuri la o anumita intrebare
	N1 - numarul total de calificative de un anumit tip din cadrul T1
	T2 - valoarea T1 din care se scad raspunsurile studentilor care au avut prezenta la activitatea respectiva intre 0-20% (rsapunsurile la 13a)
	N2 - numarul total de calificative de un anumit tip din cadrul T2
	$\text{Indx}(\%) = (\text{Nx}/\text{Tx}) * 100$ - procentul calificativului fata de numarul total de raspunsuri

Observatii / Comentarii
<p>Mesajul pentru conducere: Cursul este foarte frumos, dar este singura activitate din orar in ultima zi a saptamanii. Astfel, multi studenti merg acasa si nu vin la curs, sala fiind aproape goala, la un curs de calitate deosebita. Stiu ca asta nu este vina nimanui in afara lor, dar, o sugestie personala ar fi, daca se poate, cursul sa fie mutat intr-o alta zi.</p> <p>Doamna profesoara, multumim pentru tot!</p>

Fisa individuala a cadrului didactic

Anul universitar 2020 - 2021; Semestrul 1

Cadru didactic Muresan Cristina Ioana

Disciplina Ingineria reglarii automate I - curs, laborator

Facultatea Facultatea de Automatica si Calculatoare

Programul de studiu Automatica si Informatica Aplicata (in limba engleza)-lic

Anul 3 Semestrul 1

Departament Automatica

Facultate departament Facultatea de Automatica si Calculatoare

Nr	Aspecte evaluate	T1	T2	Calificativ		N1	Ind1 (%)	N2	Ind2 (%)
1	Cum apreciati modul de predare a cadrului didactic ?	29	29	1	Foarte bun	28	96.55	28	96.55
				2	Bun	1	3.45	1	3.45
				3	Satisfacator	0	-	0	-
				4	Nesatisfacator	0	-	0	-
2	Cum apreciati relatia cadru didactic - student ?	29	29	1	Foarte buna	29	100.00	29	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
3	Cum apreciati calitatea informatiilor transmise, a suportului de curs/aplicatii si/sau a materialelor bibliografice (daca este cazul) ?	28	28	1	Foarte buna	28	100.00	28	100.00
				2	Buna	0	-	0	-
				3	Satisfacatoare	0	-	0	-
				4	Nesatisfacatoare	0	-	0	-
4	Modalitatea de evaluare a activitatii si cunostintelor a fost corecta si obiectiva ?	28	28	1	Da	28	100.00		
				2	Partial	0	-		
				3	Nu	0	-		
				4	Nu am fost evaluat	0	-		
5	Care a fost gradul d-voastra de prezenta la activitatea sustinuta de cadrul didactic ?	29	29	1	0 - 20 %	0	-		
				2	20 - 40 %	1	3.45		
				3	40 - 60 %	0	-		
				4	60 - 80 %	4	13.79		
				5	80 - 100 %	24	82.76		
6	In ce masura activitatile didactice au fost desfasurate in limba specializarii urmate ?	29	29	1	0 - 20 %	0	-	0	-
				2	20 - 40 %	0	-	0	-
				3	40 - 60 %	0	-	0	-
				4	60 - 80 %	1	3.45	1	3.45
				5	80 - 100 %	28	96.55	28	96.55
				6	Nu este cazul	0	-	0	-

Explicatii :	T1 - numarul total de raspunsuri la o anumita intrebare
	N1 - numarul total de calitative de un anumit tip din cadrul T1
	T2 - valoarea T1 din care se scad raspunsurile studentilor care au avut prezenta la activitatea respectiva intre 0-20% (rsapunsurile la 13a)
	N2 - numarul total de calitative de un anumit tip din cadrul T2
	Indx(%) = (Nx/Tx)*100 - procentul calificativului fata de numarul total de raspunsuri

Observatii / Comentarii
<p>Consider ca acest cadru didactic are capacitatea sa dezvolte o relatie foarte buna cu toti studentii si sa ii motiveze sa invete/inteleaga materia dansei.Respect!</p>

De departe cadrul didactic pe care îl apreciez cel mai mult. Stilul de predare este rar întâlnit și este plăcut să vezi și oameni empatici care predau.

Doamna profesoara Cristina Muresan are un mod de predare foarte placut, este foarte rabdatoare si nu lasa niciun student fara explicatiile necesare pentru a intelege cursul, sper sa continue tot asa si in anii care urmeaza deoarece face o treaba foarte buna.

Doamna profesor Muresan a fost un cadru didactic foarte competent. Desi a predat materia de Control Engineering am reusit sa invat de la dansa mai multe despre Teoria Sistemelor decat de la doamna profesor Dobra. Respect !

Foarte bine pregatita, calma, intelegatoare cu studentii. Modul de predare este foarte bun, se asigura ca toata lumea intelege ceea ce explica. O persoana foarte amabila

materie predata bine

examen concret, notare la fel

10/10 CE2 o sa fie la fel de blana

Mi-a placut extrem de mult de felul cum preda si ne explica, cu calm. Desi nu eram bun/a la teoria sistemelor, iar CE-ul se lega de TS, doamna profesoara m-a facut sa imi placa si sa imi dau interesul sa inteleg mai bine.

Este o draguta!! Mereu intram cu drag la curs/laborator.

Nota 10

Nota 11. Nu am ce comenta. :D
Keep up the good work!
Best teacher award winner

Nu prea am ce sa zic, doamna profesoare este cu siguranta printre cele mai bune profesoare cu care am lucrat pana acum. Cursurile au fost interesante, pline de explicatii atat teoretice cat si practice, laboratoarele au fost utile, modul de evaluare a fost foarte corect, chiar in avantajul nostru de multe ori. Chiar daca nu am petrecut foarte mult timp invatand la CE, simt ca am invatat multe.

O doamna profesoara empatica si un exameplu pentru celelalte cadre didactice din multe puncte de vedere, explicatiile foarte bune, ne-a oferit ajutor si detalii suplimentare ori de cate ori am avut nevoie, mereu deschisa sa discute pe langa topicile pe care le prezenta, mereu empatica si ne oferea suport daca aveam vreo problema, a apreciat implicarea noastra, si-a dat interesul si fecilitari pentru toata munca depusa! Multumim mult!

O profesoara excelenta. Keep up the good work.

Pot spune ca doamna profesoara Muresan a fost cel mai bun si cel mai implicat profesor din acest semestru. Fiecare curs il preda din plin, oferea pana si cel mai mic detaliu inteles sau neinteles la materia sa, Control Engineering. Tot respectul pentru dumneaei deoarece este o persoana buna, care iubeste studentii si chiar se implica, fata de altii care nu dau nici doi bani. La fiecare laborator, era devotata si se implica pentru noi, ne ajuta cand aveam probleme, ne arata ce este corect si ce este gresit. Am doar cuvinte de lauda asupra ei. Pana acum, pot spune ca a fost cel mai bun profesor pentru mine. Nota 11 ii acord. Sper sa continuati tot asa.

Un profesor excelent, predare ireprosabila, interes maxim din partea dansei. Atat modul de predare cat si cel de evaluare foarte "Occidental", lucru care lipseste cu desavarsire in cadrul UTCN

Un profesor exceptional, care chiar daca am facut online s-a straduit sa ne invete si pot zice ca intr-un final cam toti am retinut ceva.