



UNIVERZITET U NOVOM SADU  
FAKULTET TEHNIČKIH NAUKA  
KATEDRA ZA PRIMENJENE RAČUNARSKE NAUKE

# Arhitektura računara

prof. dr Dušan Gajić

Zimski semestar 2025/2026.

Studijski program: SIIT

# O predmetu

# Predavači

## **Nastavnik:**

**prof. dr Dušan Gajić**

E-mail: [dusan.gajic@uns.ac.rs](mailto:dusan.gajic@uns.ac.rs)

Kancelarija: NTP-330

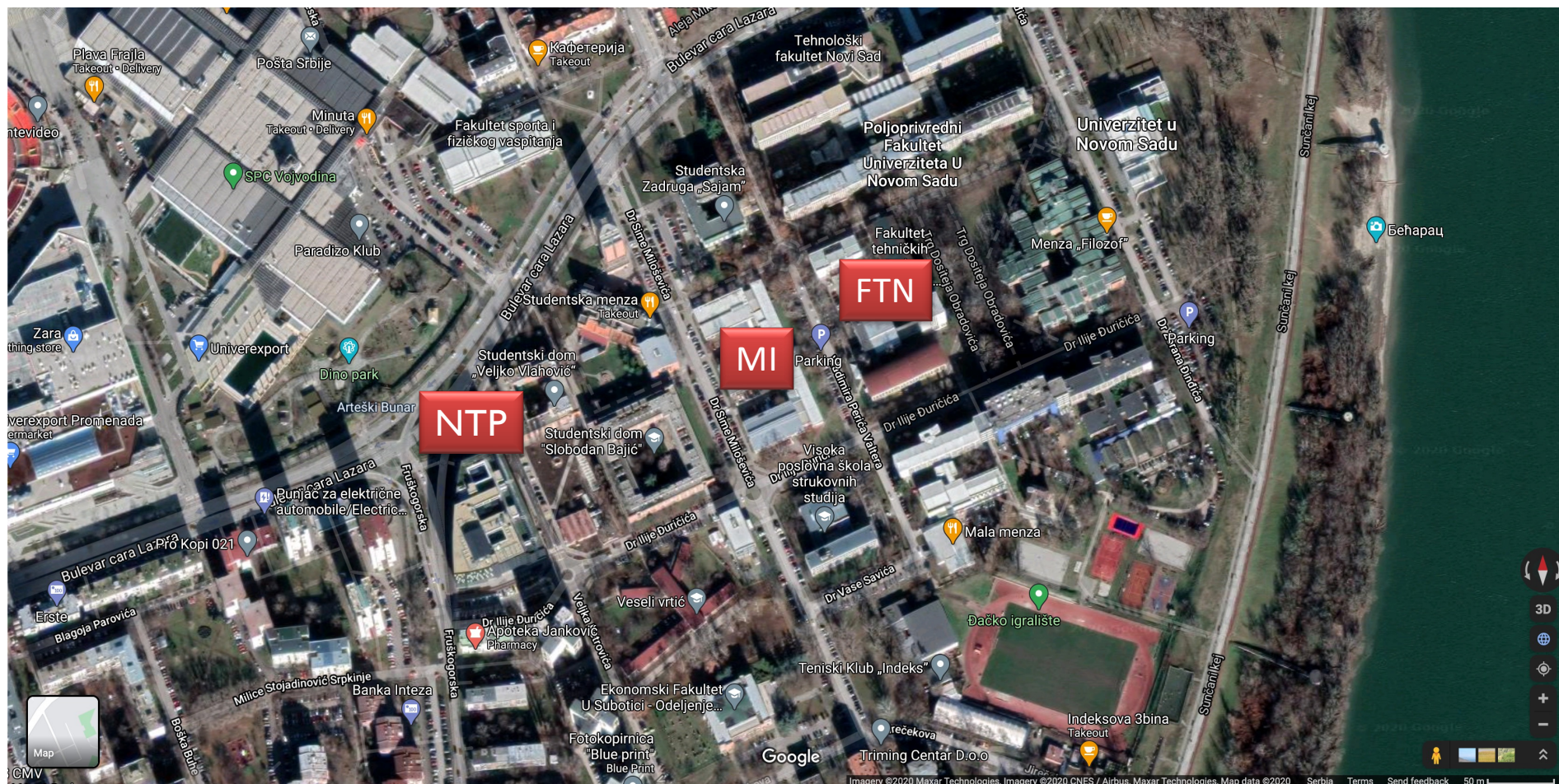
Konsultacije: dogovor putem mejla

## **Asistenti:**

**Nebojša Horvat**, [horva.n@uns.ac.rs](mailto:horva.n@uns.ac.rs)

**Sara Poparić**, [poparic.sara@uns.ac.rs](mailto:poparic.sara@uns.ac.rs)

# Zgrade FTN, MI i NTP



*Za uništavanje jedne nacije nisu neophodne atomske bombe i projektili dugog dometa.*

*Dovoljni su snižavanje kvaliteta obrazovanja i dozvoljeno varanje na ispitima.*

*Pacijenti umiru u rukama doktora koji su položili ispite varajući.*

*Zgrade se urušavaju u rukama inženjera koji su položili ispite varajući.*

***Kolaps obrazovanja je kolaps nacije.***

– Natpis na ulazu Univerziteta Južna Afrika

# Cilj predmeta



Stvaranje **funkcionalno zaokružene slike o radu računara**, pre svega sa stanovišta njegovog korišćenja (**iz ugla programera**)

# Teme



- 1. Uvod u arhitekturu i organizaciju računara**
- 2. Brojni sistemi i predstave brojeva**
  - Aritmetika ograničenog broja cifara, predstavljanje realnih brojeva, binarni brojni sistem
- 3. Asemblersko programiranje**
  - Arhitektura naredbi, primeri asemblerskih programa, potprogrami, makro, stek
- 4. Memorija i procesor računara Koncept**
  - Organizacija procesora i memorije, mašinski format naredbi, upravljanje procesorom
- 5. Računar Koncept**
  - Ulazni i izlazni uređaji, vrste memorije, operativni sistem, promena konteksta, prekidi, višekorisnički rad
- 6. Sistemski programi**
- 7. Evolucija arhitekture računara**
- 8. Arhitektura i organizacija savremenih računara**

# Organizacija predmeta



Nastava: **3+3** (predavanja i računarske vežbe)

Polaganje: **predispitne (70%) i ispitne (30%) obaveze**

## 1. Predispitne obaveze – ukupno 70 bodova, minimalno 36 bodova

1. Zadatak 1 (**T12**) – 20 bodova
2. Zadatak 2 (**T34**) – 20 bodova
3. Zadatak 3 (Složeni oblik vežbi – **SOV**) – 30 bodova

## 2. Ispit – ukupno 30 bodova, minimalno 16 bodova

1. Uslov za izlazak na ispit je osvojenih 36 bodova sa predispitnih obaveza.
2. Parcijalni ispiti u toku semestra (do 30):
  1. Parcijalni ispit **PII** - do 14 bodova
  2. Parcijalni ispit **PI2** - do 16 bodova

# Organizacija predmeta

**Nema bodova sa predispitnih obaveza =  
nema potpisa**

**36 bodova sa predispitnih obaveza =  
uslov za izlazak na ispit**

# Kreativnost i priprema ispita



Izvor: [Bill Watterson](#) – [Calvin & Hobbes](#)

# Ocenjivanje

51 – 60 : 6

61 – 70 : 7

71 – 80 : 8

81 – 90 : 9

91 – 100 : 10

# Sajt predmeta



Sajt predmeta: <https://www.acs.uns.ac.rs/sr/arsiit>

Arhitektura računara – SIIT

Stranica sa obaveštenjima, repozitorijum

The screenshot shows the website interface for 'Arhitektura računara SIIT'. It includes a navigation menu on the left with categories like 'O katedri', 'Obaveštenja', and 'predmeti'. The main content area features a breadcrumb trail 'Početak » Predmet', the course title 'Arhitektura računara SIIT', and tabs for 'osnovni podaci' and 'nastavni plan'. Under 'Nastavnici', it lists Dušan Gajić with contact details. Under 'Asistenti', it lists Nebojša Horvat and Luka Radović with contact details. A notice section titled '[AR-SIIT] - Termin popravnog' states that a correction exam will be held on 03.09.2025. at 12:30h in rooms NTP 316 and NTP 317. Contact information for Sara Poparić is also provided.

# Literatura

1. Miroslav Hajduković, Žarko Živanov:

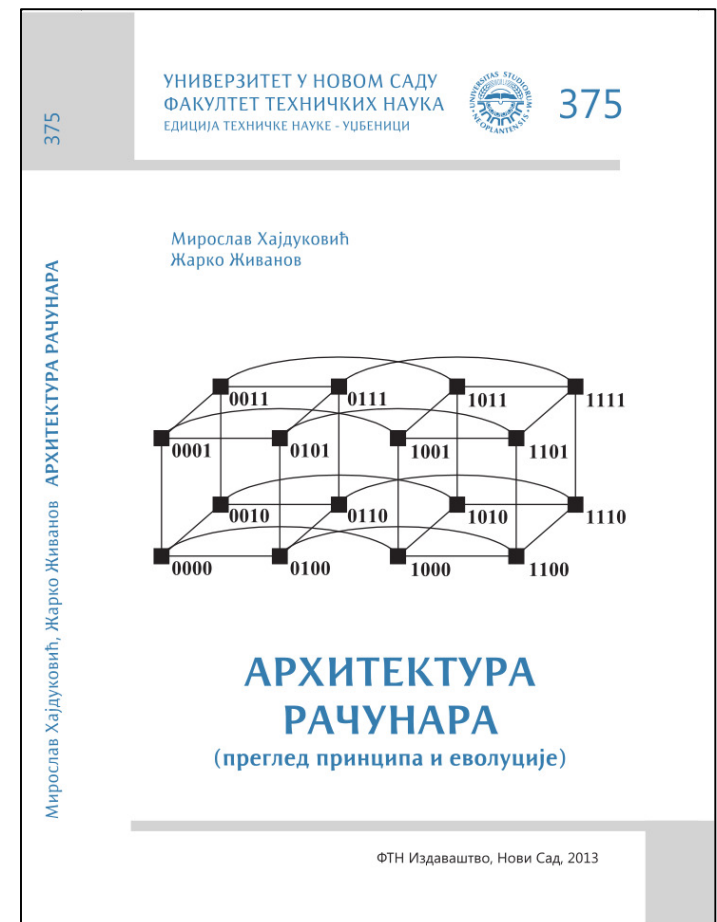
*Arhitektura računara*

*(pregled principa i evolucije)*

2. Praktikum za vežbe

3. Sajt predmeta i repozitorijum:

a. [www.acs.uns.ac.rs](http://www.acs.uns.ac.rs)



# Dodatna literatura

Andrew S. Tanenbaum  
Todd Austin

*Structured Computer  
Organization*

6<sup>th</sup> edition  
Pearson, 2012



# Dodatna literatura – srpski prevod

Srpsko izdanje:

Andrew S. Tanenbaum

*Arhitektura  
i organizacija  
računara*

Prevod 5. izdanja  
Mikroknjiga, 2007.



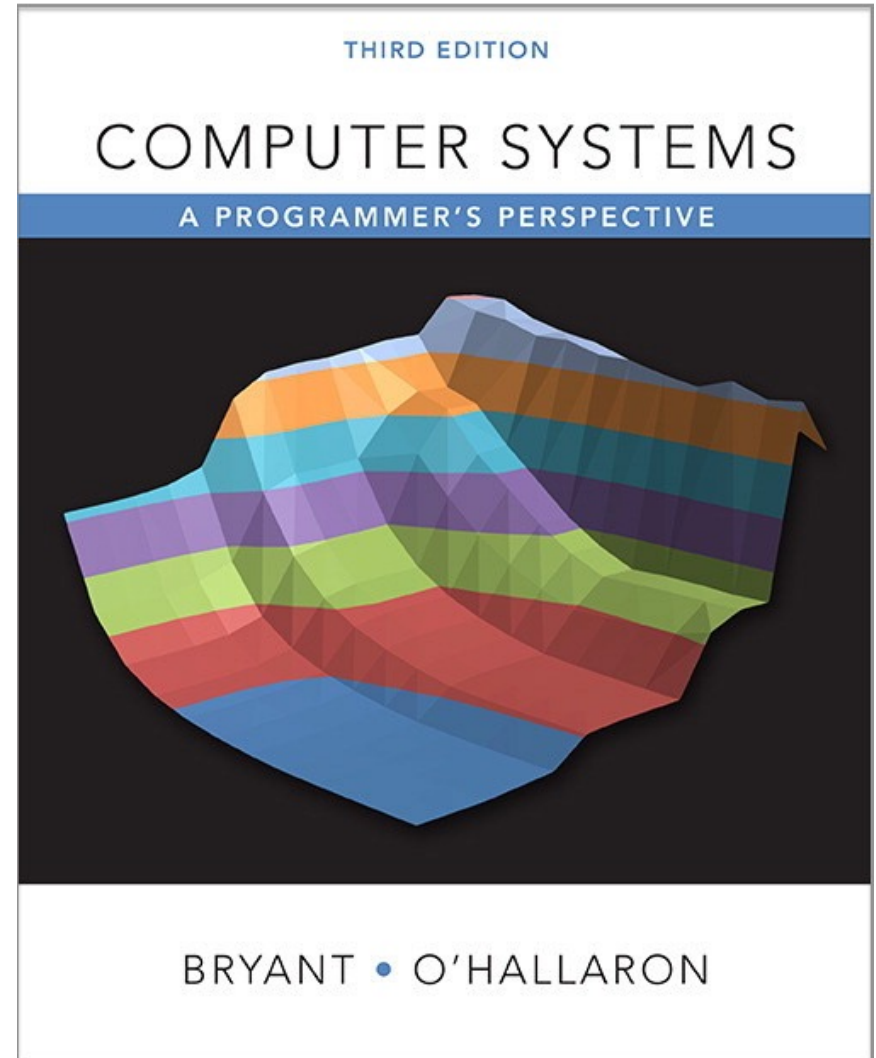
# Dodatna literatura – napredni nivo

Randal Bryant,  
David O'Hallaron

*Computer Systems:  
A Programmer's Perspective*

3<sup>rd</sup> edition

Pearson, 2015

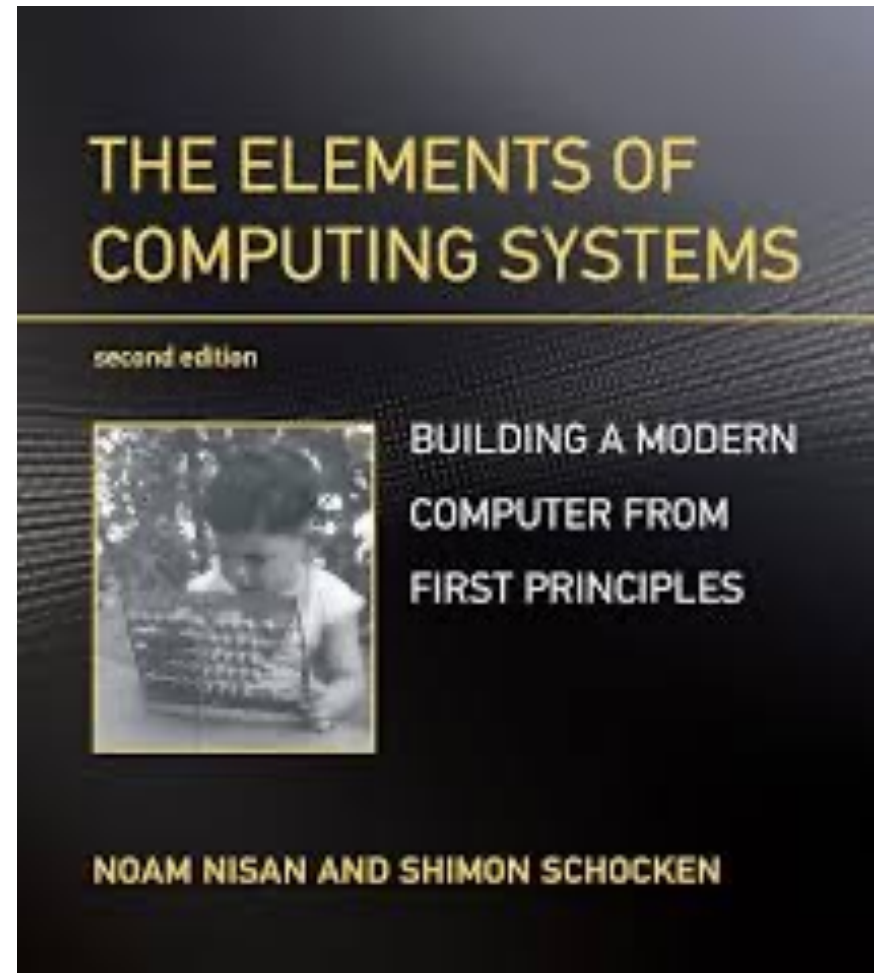


# Dodatna literatura

Noam Nissan,  
Simon Schocken

*The Elements of  
Computing Systems:  
Building a Modern Computer  
from First Principles*

2<sup>nd</sup> edition  
The MIT Press, 2021



# Onlajn kursevi

## [From Nand to Tetris](#) – [I \(hardver\)](#) i [II \(softver\)](#)

From Nand to Tetris  
Building a Modern Computer From First Principles

Home  
Projects  
Book  
Software  
Demos  
License  
Cool Stuff  
Team  
Stay in Touch  
Q&A

The official website of Nand to Tetris courses

And of the book [The Elements of Computing Systems](#), By [Noam Nisan](#) and [Shimon Schocken](#) (MIT Press)

CHIP SPEC!

NAND OR AND  
MUX AND

# Onlajn kursevi – napredni nivo

## Princeton University – [Computer Architecture](#)

The screenshot shows the Coursera interface for the 'Computer Architecture' course by Princeton University. At the top, there are navigation links for 'For Individuals', 'For Businesses', 'For Universities', and 'For Governments'. The Coursera logo and a search bar are visible. The course title 'Computer Architecture' is prominently displayed, along with the instructor's name 'David Wentzlaff'. A blue button indicates 'Enroll for free' starting on Nov 4, with a note that 305,631 people are already enrolled. Below this, five key features are highlighted: 21 modules, a 4.7 star rating from 3,722 reviews, an advanced level, a flexible schedule of 5 weeks at 10 hours a week, and a 97% learner satisfaction rate. A navigation bar at the bottom includes links for 'About', 'Modules', 'Recommendations', 'Testimonials', and 'Reviews'.

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PRINCETON UNIVERSITY

### Computer Architecture

Instructor: [David Wentzlaff](#)

**Enroll for free**  
Starts Nov 4

305,631 already enrolled

- 21 modules**  
Gain insight into a topic and learn the fundamentals.
- 4.7 ★**  
(3,722 reviews)
- Advanced level**  
Designed for those already in the industry
- Flexible schedule**  
5 weeks at 10 hours a week  
Learn at your own pace
- 97%**  
Most learners liked this course

[About](#) Modules Recommendations Testimonials Reviews