

МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ РОССИЙСКОЙ ФЕДЕРАЦИИ

Федеральное государственное автономное образовательное учреждение высшего образования
«НАЦИОНАЛЬНЫЙ ИССЛЕДОВАТЕЛЬСКИЙ ТОМСКИЙ ПОЛИТЕХНИЧЕСКИЙ
УНИВЕРСИТЕТ»



Инженерная школа информационных технологий и робототехники
Отделение информационных технологий
09.03.01 «Информатика и вычислительная техника»

ОТЧЕТ О ПРОХОЖДЕНИИ КУРСА

Digital Signal Processing 1: Basic Concepts and Algorithms

Выполнил:

студент группы 8В92

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Проверил:

доцент ОИТ ИШИТР

Хамухин А. А.

Томск – 2023

Module 1.1: Digital Signal Processing: the Basic

Introduction to the notation and basics of Digital Signal Processing

Learning Objectives:

- Learn what is a signal, both in continuous and in discrete time

The screenshot shows the Coursera interface for the course 'Digital Signal Processing 1: Basic'. The user is logged in as 'Пенькова Мария'. The page title is 'Homework for Module 1.1'. The main content area shows a 'Submit your assignment' button, a 'Receive grade' section with a 'To Pass' requirement of 80% or higher, and a 'Your grade' of 87.42%. A 'View Feedback' button is also present. The left sidebar contains a list of course items, with the current quiz highlighted. The bottom of the page has 'Like', 'Dislike', and 'Report an issue' buttons.

coursera | EPFL Search in course Search

Пенькова Мария

Digital Signal Processing 1: Basi... > Week 1 > Homework for Module 1.1 < Previous Next >

Welcome to DSP One!

Lesson 1.1.1: What is signal processing?

Lesson 1.1.2: Discrete-time signals

Lesson 1.1.3: Basic signal processing

Lesson 1.1.4: Complex exponentials

Module 1.1: Assignments

- Reading: Practice homework 1h
- Quiz: Homework for Module 1.1 12 questions**

Notes and Supplementary Materials

Python Notebooks

Homework for Module 1.1

Quiz • 1h 45m

Submit your assignment Try again

Due Apr 23, 11:59 PM WIB Attempts 3 every 8 hours

Receive grade

To Pass 80 % or higher

Your grade **87.42%** View Feedback

We keep your highest score

Like Dislike Report an issue

Рисунок 1 – Результаты теста по модулю 1.1

Module 1.2: Signal Processing Meets Vector Space

Modelling signals as vectors in an appropriate vector space. Using linear algebra to express signal manipulation

Learning Objectives:

- Review linear algebra and vector space theory, and learn how to model signals as elements of a vector space

The screenshot shows the Coursera interface for the course 'Digital Signal Processing 1: Basics'. The user is logged in as 'Пенькова Мария'. The page displays the 'Homework for Module 1.2' assignment, which is a 1h 30m quiz. The user has submitted the assignment and received a grade of 83.33%. The page also shows the submission deadline (Apr 30, 11:59 PM WIB) and the number of attempts (3 every 8 hours). The user's grade is highlighted in green, and there is a 'View Feedback' button. The page also includes a 'Submit your assignment' button and a 'Try again' button. The left sidebar shows the course structure, including lessons 1.2.1 through 1.2.4, and the current assignment is highlighted.

Homework for Module 1.2
Quiz • 1h 30m

Submit your assignment [Try again](#)

Due Apr 30, 11:59 PM WIB Attempts 3 every 8 hours

Receive grade
To Pass 80 % or higher

Your grade
83.33%
We keep your highest score

[View Feedback](#)

[Like](#) [Dislike](#) [Report an issue](#)

Рисунок 2 – Результаты теста по модулю 1.2

Module 1.3: Fourier Analysis: the Basics

The fundamental concepts behind the Fourier transform and the frequency domain

Learning Objectives:

- Learn the frequency representation of finite-length signals
- Understand how signals can be described either in the time domain or in the frequency domain

The screenshot shows the Coursera interface for the course 'Digital Signal Processing 1: Basics'. The user is logged in as 'Пенькова Мария'. The current page is 'Homework for Module 1.3'. The left sidebar lists lessons: Lesson 1.3.1: Fourier Analysis, Lesson 1.3.2: The Discrete Fourier Transform, Lesson 1.3.3: The DFT in Practice, Lesson 1.3.4: The Short-Time Fourier Transform, and Module 1.3: Assignments. Under 'Module 1.3: Assignments', there is a 'Reading: Practice homework' (1h) and a 'Quiz: Homework for Module 1.3' (9 questions). The main content area shows the quiz results for 'Homework for Module 1.3' (Quiz • 2h). It includes a 'Submit your assignment' button, a 'Due' date of May 7, 11:59 PM WIB, and 'Attempts' of 3 every 8 hours. Below this, there is a 'Receive grade' section showing 'To Pass' as 80% or higher. The 'Your grade' is 83.33%, with a 'View Feedback' button and the note 'We keep your highest score'. At the bottom, there are 'Like', 'Dislike', and 'Report an issue' buttons.

Рисунок 3 – Результаты теста по модулю 1.3

Module 1.4: Fourier Analysis: More Advanced Tools

Delving deeper in the world of Fourier analysis

Learning Objectives:

- Learn how to represent arbitrary signals in the frequency domain
- Advance your knowledge of Fourier analysis

The screenshot shows a Coursera course page for 'Homework for Module 1.4'. The page header includes the Coursera and EPFL logos, a search bar, and the user's name 'Пенькова Мария'. The breadcrumb trail indicates the course is 'Digital Signal Processing 1: Basics', currently in 'Week 4', and specifically 'Homework for Module 1.4'. The left sidebar lists several lessons: 'Lesson 1.4.1: Discrete Fourier Series', 'Lesson 1.4.2: The Discrete-Time Fourier Transform', 'Lesson 1.4.3: Sinusoidal Modulation', 'Lesson 1.4.4*: Relationships between transforms', and 'Lesson 1.4.5: The fast Fourier transform'. Under 'Module 1.4: Assignments', there are three items: 'Reading: Practice homework' (1h), 'Quiz: Homework for Module 1.4' (12 questions), and 'Module 1.4: Notes and Supplementary Materials' (Python Notebooks). The main content area is titled 'Homework for Module 1.4' (Quiz • 2h). It shows a 'Submit your assignment' button with a green checkmark, a due date of 'May 14, 11:59 PM WIB', and '3 attempts every 8 hours'. A 'Try again' button is also present. Below this, a 'Receive grade' section shows a green checkmark and 'To Pass 80% or higher'. On the right, the 'Your grade' is '90.55%' with a 'View Feedback' button and the text 'We keep your highest score'. At the bottom, there are 'Like', 'Dislike', and 'Report an issue' buttons.

Рисунок 4 – Результаты теста по модулю 1.4



Digital Signal Processing 1:
Basic Concepts and
Algorithms
École Polytechnique
Fédérale de Lausanne

Course Material

- Week 1
- Week 2
- Week 3
- Week 4

Grades

Notes

Discussion Forums

Messages

Resources

Course Info

Reset deadlines [How it works](#)

You've successfully completed the course! To access up-to-date course material, please reset your deadlines.

Reset my deadlines

Grades

You have completed all of the assessments that are currently due.



You passed this course! Your grade is 86.16%.

| Item | Status | Due | Weight | Grade |
|------------------------------|--------|------------------------|--------|--------|
| Homework for Module 1.1 Quiz | Passed | Apr 23 11:59 PM WIB | 25% | 87.42% |
| Homework for Module 1.2 Quiz | Passed | Apr 30 11:59 PM WIB | 25% | 83.33% |
| Homework for Module 1.3 Quiz | Passed | May 7 11:59 PM WIB | 25% | 83.33% |
| Homework for Module 1.4 Quiz | Passed | May 14 11:59 PM WIB | 25% | 90.55% |

Рисунок 5 – Все тесты

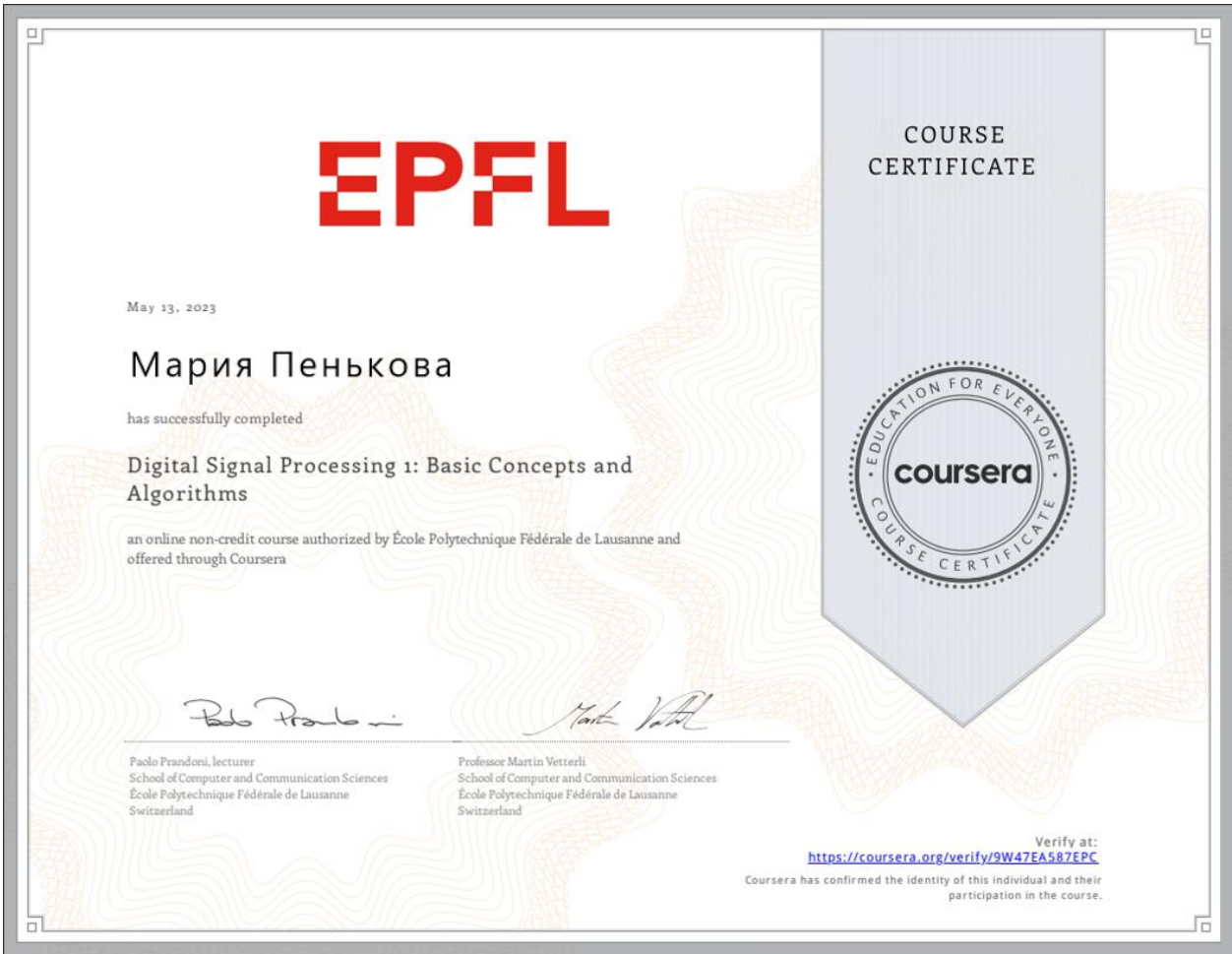


Рисунок 6 – Сертификат