# Course Information

## COURSE INFORMATION

| Course Title | Code | Semester | L+U Hour | Credits | ECTS |
|---|---|---|---|---|---|
| Programming with C in Physics | FZK234 | 4. Semester | 2 + 2 | 3.0 | 7.0 |

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| **Prerequisites** | None |
| **Language of Instruction** | Turkish |
| **Course Level** | Bacheclor's Degree (First Cycle) |
| **Course Type** | Elective |
| **Mode of delivery** | Face to face |
| **Course Coordinator** | Prof. Dr. Caner ÇİÇEK |
| **Instructors** | Assoc. Prof. Dr. Faruk SOYDUGAN |
| **Assistants** | |
| **Course Objectives** | This course bases the C programming language to teach logic of programming. It contains creating algorithm by analysing the problems, developing the C programs.General Practice on Repeating/Looping Structers in C:,Functions in C: Defination and declaration of functions No Value Returning Functions Value Returning Functions ,Functions in C: Functions with parameters Variable Coverage Programs with Many Functions ,Pointers in C Defination of Pointers Pointer Operators (& and *) Study with Pointers ,Strings in C Defination of Strings String Assignments Strings and Pointers 2-Dimensional Strings ,Using Functions, Pointers and Strings together in C General Practice |
| **Course Content** | Introduction to Programming Languages Algorithm and Flowcharts Variables and Constants ,Decision and Looping Structures in Algorithm and Flowcharts.,Algorithm to C. Introduction to Software Development in C. ,Introduction to C: Syntax. Words, defination and data types belongs to C. Libraries, Variables, Constants. ,C language Assignment Input/Output Commands Operators Mathematic Library ,Decission Structes in C: If…else Structers Nested if If-else pairing Question mark switch ,Repeating/Looping Structers in C: while looping operators Structers do-while ,Repeating/Looping Structers in C: for Nested loops break and continue , |
| **Course Learning Outcomes** | 1) Arrange decision and looping structures in algorithm and follow charts.<br>2) use Decision and Looping structures in algorithm and follow charts.<br>3) Recognize programming languages and comprehend theirs levels, know defination of the variable and constant<br>4) Convert algorithm and flowchart to C language and develop the C code.<br>5) Compile and run the C code.<br>6) Write the C code by using syntax.<br>7) Use C language commands and learn arithmetic, relational functions , logical and bit operators.<br>8) Study with functions of mathematical library.<br>9) Learn conditions and loops in C.<br>10) Learn strings in C. |

## WEEKLY COURSE CONTENT

Quick Access

Physics
- Qualification Awarded
- Level of Qualification
- Qualification Requirements and Regulations
- Specific Admission Requirements
- Recognition of Prior Learning
- Profile of the Program
- Program Key Learning Outcomes
- Occupational Profile of Graduates
- Access to Further Studies
- Course Structure & Credits
- Exam Regulations & Assessment & Grading
- Graduation Requirements
- Mode of Study
- Programme Director(or Equivalent)
- Evaluation Questionnaire
- TYYÇ

Course Information
- Course Information
- Weekly Course Content
- Resources
- Assessment
- Course Category
- CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES
- ECTS credits and course workload

| Week | Topics | Teaching and Learning Methods and Techniques | Study Materials |
|---|---|---|---|
| 1. Week | Introduction to Programming Languages Algorithm and Flowcharts Variables and Constants | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 2. Week | Decision and Looping Structures in Algorithm and Flowcharts. | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 3. Week | Algorithm to C. Introduction to Software Development in C. | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 4. Week | Introduction to C: Syntax. Words, defination and data types belongs to C. Libraries, Variables, Constants. | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 5. Week | C language Assignment Input/Output Commands Operators Mathematic Library | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 6. Week | Decission Structes in C: If…else Structers Nested if If-else pairing Question mark switch | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 7. Week | Repeating/Looping Structers in C: while looping operators Structers do-while | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 8. Week | Midterm Exam | | |
| 9. Week | Repeating/Looping Structers in C: for Nested loops break and continue | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 10. Week | General Practice on Repeating/Looping Structers in C: | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 11. Week | Functions in C: Defination and declaration of functions No Value Returning Functions Value Returning Functions | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 12. Week | Functions in C: Functions with parameters Variable Coverage Programs with Many Functions | Oral lectures with interactive discussions, ,assignment | |

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|---|---|---|---|
| | | Applications, Pratice | |
| 13. Week | Pointers in C Defination of Pointers Pointer Operators (& and *) Study with Pointers | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 14. Week | Strings in C Defination of Strings String Assignments Strings and Pointers 2-Dimensional Strings | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 15. Week | Using Functions, Pointers and Strings together in C General Practice | Oral lectures with interactive discussions, assignment , Applications, Pratice | |
| 16. Week | Final Exam | Written, oral exam | |

## RESOURCES

| Recommended Sources |
|---|
| Basic C Lessons , N. Ercil Çağıltay, C. Fügen Selbes, Gül Tokdemir, Çiğdem Turhan, Ada Press, 2009 |
| C Language , Rifat Çölkesen, Papatya Press , 2000 |
| C Language , Yalçın Özkan, Alfa Press , 2003 |
| Learning C Language (2. Press), Yorulmaz, M., Yorulmaz, S. (2005), Palme Press, Ankara |

## ASSESSMENT

| Measurement and Evaluation Methods and Techniques | | |
|---|---|---|
| Midterm Exam (%40), Final Exam (%60) | | |
| **In-Term Studies** | **Quantity** | **Percentage** |
| Mid Term Exam 1 | 1 | 40 |
| **Total** | 1 | 40 |
| **End-Term Studies** | **Quantity** | **Percentage** |
| Final Exam | 1 | 60 |
| **Total** | 1 | 60 |
| **Contribution Of In-Term Studies To Overall Grade** | | 40 |
| **End-Term Studies** | | 60 |
| **Total** | | 100 |

## COURSE CATEGORY

| Course Category | Percentage |
|---|---|
| Core Courses | % 100 |

## CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME OUTCOMES

| Programme Outcomes | Contribution Level | DK1 | DK2 | DK3 | DK4 | DK5 | DK6 | DK7 | DK8 | DK9 | DK10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PY1 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

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|---|---|---|---|---|---|---|---|---|---|---|---|
| PY2 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY4 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY6 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY7 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| PY8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| PY9 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| PY10 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| PY11 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| PY12 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| PY13 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| PY14 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| PY15 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

*DK = Course's Contrubution.

| | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| **Level of contribution** | None | Very Low | Low | Fair | High | Very High |

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## ECTS CREDITS AND COURSE WORKLOAD

| Event | Quantity | Duration (Hour) | Total Workload (Hour) |
|---|---|---|---|
| Class Hours (14 weeks) | 14 | 2 | 28 |
| Final Exam Preparation | 1 | 10 | 10 |
| Mid Term Exam Preparation | 1 | 10 | 10 |
| Quiz 1 | 1 | 1 | 1 |
| Assignment 1 | 30 | 2 | 60 |
| Application/Practice | 14 | 2 | 28 |
| Preliminary Study | 14 | 1 | 14 |
| Quiz 2 | 1 | 1 | 1 |
| Mid Term Exam 1 | 1 | 2 | 2 |
| Final Exam | 1 | 2 | 2 |
| Assignment 2 | 20 | 1 | 20 |
| | | **Total Workload** | 176 |
| | | **Total Workload / 25.5 (s)** | 6.90 |
| | | **ECTS Credit of the Course** | 7 |