| Engine Semester Student Grade 4th Test Semester Classes per Week 2 Test Semester Test Semester Classes per Week 2 Test Semester Test Semester Classes per Week 2 Test Semester | Akashi College | | ollege | Year 2022 | | | Cour Title | | Structural Analysis III A | |
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| Case Sermant Lecture | Course | Informa | tion | | | | | | | |
| Pepartment Architecture Student Grade 4th Test Term First Semester Classes per Week 2 Test Test And Architecture Standard Level Test Test And Architecture Standard Level Test Test And Architecture Standard Level Test Test Architecture Standard Level Unacceptable Level | Course Co | ode | 4415 | | | Course Categor | y Spe | cialize | ed / Compulsory | |
| Term | | | | | | | Sch | ool Cr | edit: 1 | |
| Textbook and/or creating Matthian | Departme | | | | | Student Grade 4th | | | | |
| Teaching Materials | Term | • | | | | Classes per Week 2 | | | | |
| Course Objectives (1) To calculate the deformation and stress of a statically indeterminate structures (Beam, Rigid frame, Truss structure) using the content of a statically indeterminate beam using the principle of virtual work. To be able to draw the graph of the stress of a statically indeterminate beam using the principle of virtual work. To be able to draw the graph of the stress of a statically indeterminate beam. Rubric Ideal Level Achievement 1 Can well explain the principles of virtual work and energy. Achievement 2 Can well explain the principles of virtual work and energy to calculate the fulcrum reaction of the fulcrum reaction | | | 中川肇「行著:構造 | 基礎から学ふ゛建 も力学徹底演習、森 | | 習からのアフ゜ロ | 一チ」((株) |)井上書 | 院)を使用する。(参考図書)鈴木基 | |
| (1) To calculate the deformation and stress of a statically indeterminate structures (Beam, Rigid frame, Truss structure) using the principle of virtual work. To be able to draw the graph of the stress of a statically indeterminate beam using the principle of virtual work. To be able to draw the graph of the stress of a statically indeterminate beam. Rubric Ideal Level | Instructor | r | SHOJO N | Naoya | | | | | | |
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| Achievement 1 Can veril explain the principles of of virtual work and energy. Can veril explain the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph) deformation (deflection, deflection) and compared the fulcrum reaction force, stress (graph), deformation (deflection, deflection), explain the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph), deformation (deflection), deformation (deflection), effection angle) of deformation (deflection), deflection of the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure using principles for statically indeterminate structure using principles for statically indeterminate structure, such as the virtual work method. Assigned Department Objectives Teaching Method Structural analysis is the basis for building structure and structural design. The applied course follows Structural Analysis II (3nd year) and Structural Analysis III (3nd year). The students will learn the mechanic differences between statically determinate and statically indeterminate structure, such as the structure, such as the structure, such as the structure and problem-solving practice using indeterminate structures, such as the structure structure. Notice Style Lecture and problem-solving practice using textbook chapters 12 to 15. To listen to the lectures and take notes. To solve exercise problems and understand them correctly. The students should review the topics learned in structural analysis courses I (2nd year) and II (3nd year). Active Learning Them | (1) To cal principle ((2) To cal | lculate the of virtual v lculate the | deformation deform | statically indeter | • | | , | - | , , , | |
| Achievement 1 | Rubric | | | | | | | | | |
| Achievement 2 Can well use the principles of virtual work and energy. Can use the principles of virtual work and energy. Can use the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph), address (grap | | | | Ideal Level | | Standard Level | | | Unacceptable Level | |
| Can well use the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph), defined the fulcrum reaction force, stress (graph), defined the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure, such as the virtual work method. Achievement 3 Can well calculate the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure, such as the virtual work method. Assigned Department Objectives Teaching Method Structural analysis is the basis for building structure and structural design. The applied course follows Structural Analysis I (2nd year) and Structural Analysis II (2nd year) and Structural Analysis III (3nd year). The students will learn the mechanic differences between statically determinate and statically indeterminate structures. Such as the stress method as the virtual work method. Style Lecture and problem-solving practice using textbook chapters II 2 to 15. To listen to the lectures and take notes. To solve exercise problems and understand them correctly. The course. The students should review the topics learned in structural analysis courses I (2nd year) and II (3rd year). S absences will be excused. Characteristics of Class / Division in Learning Active Learning Theme Stable or unstable, statically or non-statically structures. 2nd Stable or unstable, statically or non-statically structures. 2nd Work and strain energy (2) Work and strain energy (3) Quiz (3) To understand the external and internal works and strain energy (4) Work and strain energy (5) Assignment (2) Sthe Mid-term Exam The deflection of statically beterminate s | Achievem | ent 1 | | Can well explain the principles | | Can explain the principles of | | of | Can not explain the principles of | |
| Can acleulate the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure using principles for statically indeterminate structure using principles for statically indeterminate structure, such as the virtual work method. Structural vork method. Assigned Department Objectives Structural Analysis II (2nd year) and Structural analysis is the basis for building structure and structural design. The applied course follows Structural Analysis II (2nd year) and Structural Analysis II (2nd year). The students will learn the mechanics solving methods for statically indeterminate structure, such as the stope deflection method and structures, such as the stope deflection method and surface and problem-solving practice using textbook chapters 12 to 15. Style | Achievement 2 | | | Can well use the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph), deformation (deflection, deflection angle) of a structure | | Can use the principles of virtual work and energy to calculate the fulcrum reaction force, stress (graph), deformation (deflection, deflection angle) of a structure (beam, rigid frame, | | ate on le) of | Can not use the principles of virtual work and energy and can not calculate the fulcrum reaction force, stress (graph), deformation (deflection, deflection angle) of a structure | |
| Structural Analysis is the basis for building structure and structural design. The applied course follows structural Analysis I (2nd year) and Structural Analysis III (3rd year). The students will learn the mechanical differences between statically determinate and statically indeterminate structures, county methods for statically indeterminate structures, county and structures (rigid frame structure), such as the stress method, and displacement method Also, the students will gain knowledge of the representative solving methods, for statically indeterminate structures (rigid frame structure), such as the stress method, and displacement method Also, the students will gain knowledge of the representative solving methods, for statically indeterminate structures (rigid frame structure), such as the slope deflection method and moment distribution method. As part of the school global education, the tests and exercises are in English. Style Lecture and problem-solving practice using testbook chapters 12 to15. To listen to the lectures and take notes. To solve exercise problems and understand them correctly. The students are supposed to ask questions and make sure they know the content before proceeding in the course. The students should review the topics learned in structural analysis courses I (2nd year) and II (3rd year). 5 absences will be excused. Characteristics of Class / Division in Learning Active Learning Theme Stable or unstable, statically or non-statically structures. Stable or unstable, statically or non-statically structures. Stable or unstable, statically or non-statically structures. 2nd Stable or unstable and statically or non-statically structure through a various example model. 4th Work and strain energy (1) To understand the desternal and internal works of a statically determinate beam Structural analysis courses. To understand the principles of virtual work. 6th Work and strain energy (3) Quiz (3) To understand the principles of virtual work and strain energy due to axial perforc | Achievement 3 | | | Can well calculate the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure, such | | Can calculate the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure, such | | sing such | Can not calculate the fulcrum reaction force of a statically indeterminate structure using principles for statically indeterminate structure, such | |
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| Structural analysis is the basis for building structure and structural design. The applied course follows Structural Analysis 1 (2nd year) and Structural Analysis II (3rd year). The students will learn the mechanical differences between statically determinate and statically indeterminate structures. The students will acquire solving methods for statically indeterminate structures. The students will acquire structures (rigid frame structure), such as the slope deflection method and moment distribution method. As part of the school global education, the tests and exercises are in English. Style Lecture and problem-solving practice using textbook chapters 12 to 15. To listen to the lectures and take notes. To solve exercise problems and understand them correctly. The students are supposed to ask questions and make sure they know the content before proceeding in the course. The students should review the topics learned in structural analysis courses I (2nd year) and III (3rd year). 5 absences will be excused. Characteristics of Class / Division in Learning Active Learning Theme Goals Theme Goals Stable or unstable, statically or non-statically structure (1) 1st Stable or unstable, statically or non-statically structures. 2nd Stable or unstable and statically or non-statically structures. Stable or unstable and statically or non-statically structures. 2nd Work and strain energy (1) To understand the discriminant of a stable or unstable and statically or non-statically or the structure through a various example model. Work and strain energy (2) To understand the external and internal works or a statically determinate beam. To review the content learned at the previews structural analysis courses. To understand the principles of virtual work and strain energy due to shear force. Work and strain energy (3) Quiz (3) Deformation of a statically determinate beam strain energy due to shear force. To calculate the deflection of a statically on the correct or virtual work and strain energy due to shear | | | | 7,000,700 | | | | | | |
| To listen to the lectures and take notes. To solve exercise problems and understand them correctly. The students are supposed to ask questions and make sure they know the content before proceeding in the course. The students should review the topics learned in structural analysis courses I (2nd year) and II (3rd year). 5 absences will be excused. Characteristics of Class / Division in Learning Active Learning Active Learning Active Learning Theme Goals Theme Goals To understand the discriminant of a stable or an unstable, statically or non-statically structures. Stable or unstable, statically or non-statically structures. Stable or unstable and statically or non-statically structures. Stable or unstable and statically or non-statically structures. To understand the discriminant of a stable or an unstable and statically or non-statically structures. To review the content learned at the previews structure analysis courses. To understand the external and internal works of a statically determinate beam. To understand the strain energy due to axial force, bending moment and shear force. Work and strain energy (3) Quiz (3) To understand the principles of virtual work and strain energy due to shear force. To understand the deflection of a statically determinate beam using the Castiglano's theorem. Work and strain energy (4) Work and strain energy (5) Assignment (2) Work and strain energy (5) To review the content learned To understand the deflection of a statically determinate beam using the Castiglano's theorem. To calculate the deflection of a statically determinate beam using the Castiglano's theorem. To understand the deflection of a statically determinate beam using the principle of virtual work. To understand the deflection of a statically russ using the principle of virtual work. To understand the deflection of statically russ using the principle of virtual work. | Outline solving methods for statically indeterminate structures, such as the stress method, and displacemen Also, the students will gain knowledge of the representative solving methods, for statically indeterminate structures (rigid frame structure), such as the slope deflection method and moment distribution method part of the school global education, the tests and exercises are in English. | | | | | | | | ethod, and displacement methods, for statically indeterminate | |
| Course Plan Theme Stable or unstable, statically or non-statically structure (1) Discusses the differences between stable or unstable and statically or non-statically structure (1) To understand the discriminant of a stable or an unstable and statically or non-statically structure through a various example model. 2nd Stable or unstable and statically or non-statically structure through a various example model. 2nd Stable or unstable and statically or non-statically structures. 2nd Stable or unstable and statically or non-statically structure through a various example model. To review the content learned at the previews structural analysis courses. To understand the external and internal works or a statically determinate beam. 4th Work and strain energy (2) To understand the external and internal works or a statically determinate beam. 5th Deformation of a statically determinate beam Using the principle of virtual work. 6th Work and strain energy (4) To understand the principles of virtual work and strain energy due to shear force. To understand the principles of virtual work and strain energy due to shear force. To calculate the deflection of a statically determinate beam using the Castiglano's theorem. 7th Assignment (2) 8th Mid-term Exam To understand the deflection of a statically russ using the principle of virtual work. To understand the deflection of a statically truss using the principle of virtual work. To understand the deflection of statically truss using the principle of virtual work. To understand the deflection of statically truss using the principle of virtual work. To understand the deflection of statically truss using the principle of virtual work. To understand the deflection of statically truss using the principle of virtual work. To understand the deflection of statically truss using the principle of virtual work. | Notice | | To listen students course. | to the lectures as are supposed to The students sho | and take notes. To ask questions and review the top | solve exercise p I make sure they | roblems an | d und | nt before proceeding in the | |
| Active Learning | Charact | eristics (| | | | | | | | |
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| Theme Goals Stable or unstable, statically or non-statically structures. Ist Quarter Stable or unstable, statically or non-statically structures. 2nd Work and strain energy (1) Work and strain energy (2) Stable or unstable and statically determinate beam using the principle of virtual work. 6th Work and strain energy (4) Work and strain energy (5) Assignment (2) 8th Mid-term Exam To understand the discriminant of a stable or an unstable and statically or non-statically structures. To understand the external and internal works of a statically determinate beam using the principle of virtual work. To understand the strain energy due to axial force, bending moment and shear force. To understand the principles of virtual work and strain energy due to shear force. To understand the principles of virtual work and strain energy due to shear force. To understand the principles of virtual work and strain energy due to shear force. To calculate the deflection of a statically determinate beam using the Castiglano's theorem. To review the content learned To understand the deflection of a statically determinate structure To understand the deflection of a statically determinate structure To understand the deflection of a statically truss using the principle of virtual work. | | | | | | | | | | |
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| 110th Time defication of statically accommittee structure Tro anacistant the defication of statically rigid | | | 9th | | | | | | | |
| | | | 10th | | | | To understand the deflection of statically rigid frame structure using the principle of virtual work | | | |

| | | 11th | The deflection of statically determinate structure 3) Assignment (2) | | To review the content learned | | | | | |
|----------------------------------|--------------------|------|--|------------|---|-------|--|--|--|--|
| | 12th No | | Non-statically determinate structu | re (1) | To understand, through example, the degree of redundancy of non-statically structure, and various kinds of non-statically beams and rigid frame structures. | | | | | |
| 13th N | | | Non-statically determinate structu | re (2) | To execute a stress analysis of non-statically determinate beam using the principle of virtual work. | | | | | |
| | 15th No | | Non-statically determinate structu | re (3) | To calculate, using models, the stress of Non-statically continuous beams. | | | | | |
| | | | Non-statically determinate structu Assignment (4) | re (4) | To review the content learned | | | | | |
| | 16th End-term Exam | | | | | | | | | |
| Evaluation Method and Weight (%) | | | | | | | | | | |
| | | | Examination | Assigments | | Total | | | | |
| Subtotal | | | 80 | 20 | | 100 | | | | |
| Basic Proficiency | | | 0 0 | | | 0 | | | | |
| Specialized | l Proficien | су | 80 20 | | | 100 | | | | |
| Cross Area | Proficien | су | 0 0 | | | 0 | | | | |