

مجلة جامعة الملك عبد العزيز: العلوم الهندسية, م ١٦, ع ٢, ص ٣-٢٥ (٢٠٠٦م/١٤٢٧هـ)

saeed@asiri.net

المستخلص:

سعيد بن أحمد عسيري

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النطاق	عدد السكان (م ٢٠٠٥)	نسبة إلى %	عدد مستخدمي الإنترنت	نسبة الإنترنت عالميا %	نسبة نمو الإنترنت من إلى ٢٠٠٥ م %
أفريقيا	896,721,874	14.0	23,917,500	2.5	429.8
آسيا	3,622,994,130	56.4	332,590,713	34.2	191.0
أوروبا	804,574,696	12.5	285,408,118	29.3	171.6
الشرق	187,258,006	2.9	16,163,500	1.7	392.1
أمريكا	328,387,059	5.1	224,103,811	23.0	107.3
أمريكا	546,723,509	8.5	72,953,597	7.5	303.8
أستراليا	33,443,448	0.5	17,690,762	1.8	132.2
المجموع	6,420,102,722	100.0	972,828,001	100.0	169.5

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CERN

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Illinois

(NCSA) Supercomputing

Mosaic

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NETSCAPE

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Unix

CompuServe

Point-to-Point

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(Discussion Board)

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The screenshot shows a Microsoft Internet Explorer browser window displaying the website for Dr. Saeed Asiri. The address bar shows <http://www.asiri.net>. The page header identifies the institution as King Abdulaziz University, Dept. of Production and Mech. Syst. Design, and the course as MENG 470 Mechanical Vibrations. The main content area features a navigation menu on the left with buttons for Home, News, Syllabus, Calendar, Assignments, Exams, Lab, Feedback, Links, Projects, Lecture Notes, and Discussion Board. The course details include:
MENG470 Mechanical Vibrations (3 Credits)
Fall 2004
[Click here to see animation files](#)
Course Instructor:
• Dr. Saeed Asiri
• Office: 480
• ext.: 68175
• Email: saeed@asiri.net
Course TA:
• Abdulrahman Fatani
• Office: 221
• ext.: 68251
• Email: amfatani@kaau.edu.sa
Course Description:
Free and damped vibration of single degree of freedom systems. Viscous damping. Forced vibration. Resonance. Harmonic excitation. Rotating unbalance. Base motion. Vibration isolation. Fourier analysis. Vibration measuring. General excitation. Step and impulse response. Two degree of freedom systems. Frequencies and mode shapes. Modal analysis. Undamped vibration absorber. Multi degrees of freedom systems. Matrix methods. Raleigh and Raleigh-Ritz methods. Continuous systems, axial, torsional and
Time Responses for three different spring-mass systems
The graph shows position vs. time for three different spring-mass systems. The x-axis is labeled 't, time' and ranges from 0 to 6. The y-axis is labeled 'position' and ranges from -2 to 2. Three curves are shown: a blue curve (undamped), a green curve (underdamped), and a red curve (overdamped). The blue curve oscillates with constant amplitude. The green curve oscillates with decreasing amplitude. The red curve decays to zero without oscillating. A copyright notice at the bottom of the graph reads: © 1996 - V. Sparrow modified by D. K. Chaffin, 1997.

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(Exams)

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King Abdulaziz University
Dept of Production and Mech. Sys. Design

MENG 470 Mechanical Vibrations

MENG470 Mechanical Vibrations (3 Credits)
Fall 2004

Text: Singiresu Rao, *Mechanical Vibrations*, Prentice-Hall, Fourth Edition.

Instructor: Dr. Saeed Asiri **Office:** 460 **Email:** saeed@asiri.net

Course Website: <http://www.asiri.net>

Prerequisites:

- MENG 262 Dynamics
- MENG 270 Mechanics of Materials

Grading:

- Midterm Exam 20%
- Final Exam 40%
- Pop. Quizzes 10%
- Homework 10%
- Projects 10%
- Lab 10%

Homework and Lab. report:

- Work with others is encouraged, but turn in your own efforts (no copying)
- No late homework and Lab report will be accepted
- All problems in each assignment should be completed
- Selected problems will be graded
- Late homework will receive NO credit
- Solutions to the assignments will be posted in the course website.

How to Succeed

- Accept that it is your responsibility to learn the material (in spite of the book or teacher)
- Show up and become engaged with the topics
- Do the homework daily so you can ask questions in class
- Use you resources for help (classmates, upperclassmen, faculty, the library)

Prerequisites by Topic:

1. Students should be familiar with free and forced vibration of single-degree-of-freedom (SDOF) systems.
2. Students should be familiar with the kinematics and kinetics of two and three-dimensional rigid bodies.
3. Students should have a good understanding of the mechanics of solids including the ability to

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King Abdulaziz University
Dept of Production and Mech. Sys. Design

MENG 470 Mechanical Vibrations

MENG470 Mechanical Vibrations (3 Credits)
Fall 2004

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Calendar

Wk. No.	Date 1424	Reading Assign.	Topic	Recommended Problems
1	26/7 to 30/7	1.4 to 1.9	Fundamentals of Vibrations	1.7, 10, 15, 22, 34
2	3/8 to 7/8	1.10 and 1.11	Harmonic Motion Fourier Series	1.43-47, 57, 63, 1.64-70
3	10/8 to 14/8	2.1 - 2.3 and 2.6	Undamped and Damped Free Vibration of 1-DOF	2.7,9,12,14, 40, 44-48, 60, 61, 66, 68, 69,71, 73, 90, 99-101, 102-104, 106
4	17/8 to 21/8	3.1 - 3.7	Undamped and Damped Forced Vibration of 1-DOF	3.19, 20, 24, 30, 35, 37,39, 40, 47, 48, 56
5	24/8 to 28/8	4.5 and 4.7	Vibration under General Forcing Conditions: Convolution Integral, Laplace Transforms	4.15, 17-22, 32-38, 49-51
6	2/9 to 6/9	5.1 to 5.5	Free Vibrations of 2-DOF	5.1, 5, 14, 15, 17, 19,27, 29, 34, 41
7	9/9 to 13/9	5.6 and 5.9	Forced Vibrations of 2-DOF	5.44, 45, 46, 48, 57, 58, 70-77
8	16/9 to 20/9	6.3, 6.5 to 6.8	Energy Methods for Multi-DOF Undamped Systems, Lagrange's Equations	6.1, 4, 5, 24, 34, 35
Exam 1: Monday, 18th of Ramadan, 1425 H				
9	7/10 to 11/10	6.9	More Discussions on Energy Methods	6.39, 40, 41, 42, 43, 44, 45
10	14/10 to 18/10	6.10 to 6.15	Eigenvalue Problem, Free and Forced Vibration of Multi-DOF Undamped and Damped Systems	6.45, 46, 47, 48, 51, 52, 55
11	21/10 to 25/10	7.3	Computational Methods: Rayleigh's Quotient,	7.7, 8, 9, 10, 11, 12
12	28/10 to 3/11	7.5	Computational Methods: Matrix Iteration Method, Dynamic Matrix Method	7.18, 19, 20, 23
	6/11	8.1	Distributed Parameter Systems: Transverse vibration of Strings	

Done Internet

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King Abdulaziz University
Department of Production and Metall. Engg. (DPM)

MENG 470 Mechanical Vibrations

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Homework Assignments

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HW. 1	Questions	Answers	Questions	Answers		
HW. 2	Questions	Answers	Questions	Answers		
HW. 3	Questions	Answers	Questions	Answers		
HW. 4	Questions	Answers				
HW. 5	Questions	Answers				
HW. 6	Questions	Answers				
HW. 7	Questions	Answers				
HW. 8	Questions	Answers				
HW. 9	Questions	Answers				

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	Spring 2004	Summer 2004	Fall 2004
Exam1	Questions	Questions	
	Answers	Answers	
Exam2	Questions		
	Answers		
Final Exam	Questions	Questions	
	Answers	Answers	

<http://www.wam.umd.edu/~asri/courses/meng470/syllabus.htm> Internet

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MENG470 Laboratory
Wednesday, 2:30-5:20 pm

Eng. : Abdulrahman Fatani Room: 221 ext.: 68251 Email amfatani@kaau.edu.sa

General Format for Lab Reports

- TITLE PAGE (1)
Report title, course, your name, date lab performed, date lab due, date report submitted
- OBJECTIVE OF THE EXPERIMENT (1)
Statement of objective or purpose of the experiment/lab
- THEORY/EQUATIONS USED (3) List the equations used for your lab calculations (if any).
- SAMPLE CALCULATIONS/DATA GENERATED (5) A sample of the calculations you performed to get your results.
- PROGRAM LISTING (5) A listing of your MATLAB program (if any)
- CONCLUSIONS/ANSWERS TO QUESTIONS (5)
List your conclusions. Include answers to **all** questions asked in the lab handout here. Make sure your answers are well explained
- RESULTS(S)
Your results, any problems you have had in this lab, your comments on the lab
- CLASS PARTICIPATION (5) (experimental labs)
Your active participation in the lab is crucial to the experience. Additional unique insight presented in your report may also be represented here.

Please remember, it's **what** you put in your report that counts and **not** how **much** you put in it. Some of these labs require you to turn in MATLAB plots, do not turn in **all** that you have printed out, but **only** what has been asked for. If you are not sure about what you need to turn in, please ask the engineer. Once again, remember that most of the points that you get for a lab come from your answers to the questions in the lab handout.

Points may be taken off for grammar/spelling and sloppy presentation. The reports should be typewritten. PCs are available in the computer lab for word processing

- All students should know how to operate the equipment in the lab and take part in the execution of the lab. It will be reflected in your grades.
- Question/s about the labs will be asked on exams. Not specifics, but concepts, methods and techniques.

LAB Calendar

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(Links)

.(Projects

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Department of Production Engineering & Mechanical Systems Design

- [King Abdulaziz University](#)
- [Department of Production Engineering and Mechanical System Design](#)
- [An extensive Matlab FAQ](#)
- [MATLAB \(Release 13\) Help Desk](#)
- **ONLINE RESOURCES:**
[Matlab Programs Used in Rao 4th Edition](#)

The complete set of Matlab programs used in the textbook (Rao 4th Edition). This is a ZIP file that needs to be uncompressed into a single directory. Some of the programs are necessary or useful for solving homework problems.

[Engineering Vibration Toolbox for Matlab \(Wright State University\)](#)

A set of about 35 educational programs written in Matlab by Prof. Joseph C. Slater. The programs can be run on any platform supported by MATLAB (Mac, Windows, VMS, Unix). Also included are help files, examples, and files containing raw experimental data. The codes include single degree of freedom response, response spectrum, finite elements, numerical integration, modal analysis and phase plane analysis. The files can be downloaded for free by students.

[Online Vibration and Wave Book](#)

A book on vibrations and waves in PDF available for free to students. This is more a physics rather than an engineering text that emphasizes waves and strings. However the basic ideas may be useful to engineering students in vibrations courses.

[Wave and Vibration Portal](#)


A site with links to very interesting pages on various wave and

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 King Abdulaziz University
Dept of Production and Mech. Sys. Design

MENG 470 Mechanical Vibrations

MENG 470 Mechanical Vibrations

TERM PROJECT

Select yourselves into groups of 5-6 members. Each group should find its own problem or select one of the problems in the next page, and get the approval of Eng. Fatani for it. A particular piece of hardware (e.g., one particular car) should be dealt with. In most cases, they are systems that should be familiar with, with hardware available for you to experiment on to some extent. Two weeks will be available for students to prepare for the tutorial, and students will make a presentation in the following week.

The seminar room is equipped with an LCD projector and you need to bring a laptop computer with at least Powerpoint and MATLAB. An overhead projector also is available.

The problems are rather open-ended. Do plan ahead and allocate tasks among the group members so that you do not significantly exceed 3 hours per member. Tasks might include the following.

1. Carry out library search for books and papers relevant to your problem. An internet search may also be useful. You will probably find that someone has already worked on a similar problem. By all means use their work, adapting it as necessary. (Give references!)
2. Decide on an appropriate model for your problem. Start with a one-degree-of-freedom linear system with lumped mass and/or moment of inertia. After you have dealt with this model, you are encouraged to try a more complex model (with distributed parameter or more degrees of freedom) which you expect to better approximate your problem. (Getting the model right – adequate but not too complex – is probably the most critical part of the job.)
3. Decide on numerical values for the parameters of your model (e.g., mass, damping factor, etc). Either make realistic guesses, get them from references, estimate them by dynamic tests, or measure them yourself.
4. Simulate the system numerically with a suitable forcing function and graph your results. Discuss the validity of your analysis. (Do you believe the numbers you get?)
5. Prepare for presentation and write your report.

Your group report should be about 10-12 pages, including figures and graphs, no more. Each group has 7 minutes for presentation. Both the report and presentation should contain:

1. Introduction and presentation of problem
2. Choice of model and parameter values, including reasons for approximations made
3. Equations of motion (simple model) – derivation and correctness
4. Equations of motion (complex model) – derivation and correctness
5. Numerical results and parametric studies (a few graphs and explanations)
6. Discussion and conclusions (how your results vary as the model parameters vary, and how your model might be improved).

Downloading from site: file:///C:/Documents and Settings/Saeed/My Documents/Dr_Saeed Asiri's Websites Internet

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(Lecture Notes)

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Microsoft Internet Explorer - ساحة الدكتور سعيد عسيري للنقاش العلمي

Address: http://www.asiri.net/dr/modules.php?name=Forums

You are welcome to **asiri net**

الصفحة الأولى | ملفك الشخصي | مركز البرامج | دليل المواقع | الأقسام الخاصة | أرسل مقالة | المنتديات

أكتوبر 27, 2004

أسئلة متكررة | بحث | المجموعات | الملف الشخصي | أدخل لقراءة رسائله الخاصة | دخول

تاريخ النشر والتعليق التالي هو الشهر الثماني 28, 2004 2:37 am
 صنف: الدكتور سعيد عسيري للنقاش العلمي قائمة المنتديات

استعرضي المواضيع التي لم يرد عليها

مشاركات	ردود	مواضيع	مشاركات
General			
am 2:05 2004, 23 المبتعث الثماني 23 ➔ Ahmed.Sultan	7	5	General
Engineering Softwares			
pm 11:34 2004, 08 الجمعة الثماني 08 ➔ Ahmed.Sultan	2	2	Engineering Softwares
MENG470 Mechanical Vibrations			
General			
am 1:53 2004, 23 المبتعث الثماني 23 ➔ Ahmed.Sultan	5	5	General
Class Lectures			
am 6:56 2004, 19 الثلاثاء الثماني 19 ➔ AbdulrahmanKraffah	11	10	Class Lectures
Homework Assignments			
am 7:57 2004, 17 الاثنين الثماني 17 ➔ Faisal Alotbi	3	3	Homework Assignments
Exams			
لا مواضيع	0	0	Exams
Laboratory			
pm 4:00 2004, 07 الثلاثاء الثماني 07 ➔ Nawaf_Islam	1	1	Laboratory
Projects			
لا مواضيع	0	0	Projects

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Microsoft Internet Explorer - مساحة الدكتور سعيد عسيري للنقاش العلمي

Address: http://www.asiri.net/dr/modules.php?name=Members_List

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الصفحة الأولى ملفك الشخصي مركز البرامج دليل المواقع الأقسام الخاصة أرسل مقالة المنتديات

27 أكتوبر 2004 مرحبا لـ dr.saeed

الغائصة الرئيسية

الصفحة الرئيسية
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 مواضيع نشطة
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 إحصائيات الموقع
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 استفتاء

خدمات اضافية
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 المنتديات
 أسئلة متكررة
 المراجعات
 الموسوعات

معلومات المتواجدين

مرحبا، dr.saeed

الرسائل الخاصة
 لم يقرأ: 0
 قراءه: 0

الحساب:
 الأيدي: majid Al-Zahrani

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منتديات	0	Sep 12, 2004		إيريد	dr.saeed	1
	2	Sep 16, 2004		إيريد	thamer_abukhamees	2
	1	Sep 19, 2004		إيريد	Majed Al-rehaily	3
	0	Sep 26, 2004		إيريد	المباركي	4
	0	Sep 26, 2004		إيريد	faisal_al_roumi	5
	3	Sep 27, 2004		إيريد	Thamer Bawazeer	6
	0	Sep 27, 2004		إيريد	هيثم الخطابي	7
	0	Sep 27, 2004		إيريد	محمد اسكندراني	8
	8	Sep 27, 2004		إيريد	Nawaf_Islam	9
	0	Sep 27, 2004		إيريد	Al-Amri - mohammed	10
	6	Sep 27, 2004		إيريد	AhMed.SULTAn	11
	0	Sep 28, 2004		إيريد	Saleem AL-Ghazi	12
	2	Sep 28, 2004		إيريد	khalid0150419	13
	3	Sep 27, 2004		إيريد	AbdulrahmanRraffah	14
	2	Sep 30, 2004		إيريد	Asim Alqahtani	15
	0	Sep 30, 2004		إيريد	tawfeeq_alsolami	16
	0	Oct 01, 2004		إيريد	MAZEN ALMALKI	17
	0	Oct 02, 2004		إيريد	abdulrhman alsolmi	18

Internet

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- [1] <http://www.internetworldstats.com/stats.htm>
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- [5] **Bennet, S., Priest, A. and Macpherson, C.** Learning About Online Learning: An Approach to Staff Development for University Teachers. *Australian Journal of Educational Technology*, v **15** no **3**, pp 207-221, (1999).
- [6] **Research Initiative for Teaching Effectiveness** University of Central Florida. <http://pegasus.cc.ucf.edu/~rite>, (2001).
- [7] **Paul, L.**, Enhancing Classroom Courses with Internet Technology: Are course web sites worth the trouble?. *Community College Journal of Research and Practice*, v **27**, pp 429-438, (2003)
- [8] **Foley, G. and Schuck, S.**, Web-based conferencing: Pedagogical asset or constraint? *Australian Journal of Educational Technology* v **14** no 2 pp 122-140, (1998).
- [9] **Young, S. and McSparran, M.**, Facilitating Successful Online Computing Courses While Minimising Extra Tutor Workload. In *Proc. Sixth Australasian Computing Education Conference (ACE2004)*, Dunedin, New Zealand, (2004).
- [10] **Klemm, W.**, Eight ways to get students more engaged in Online Conferences. *T.H.E Journal*, Web site accessed 18 August 2003, <http://www.thejournal.com/magazine/vault/A1997.cfm>, (1998).
- [11] **Asiri, S.**, Course website as an example of the potential positive impact of new technologies on the high education system, *Prince Abdullah Conference at KAAU*, Saudi Arabia, January 30- February 1, (2005).
- [12] **Geraldine, T.**, Technology for the Sake of Learning - A planning approach for integrating new technologies in tertiary learning environments. *The Eighth Australian World Wide Web Conference*, held in Twin Waters Resort, Sunshine Coast, Queensland from July 6-10, (2002).
- [13] **Lehtinen, E. and Hakkarainen, K.**, Computer Supported Collaborative Learning: A Review. *CL-Net*. <http://www.kas.utu.fi/papers/clnet/clnetreport.html>. Accessed 18 August 2003, (1999).

Course Website as Potential Positive Impact of New Technologies on Higher Education Systems

SAEED ASIRI

Dept. of Production & Mechanical Systems Design, Faculty of Engineering, King Abdulaziz University, Jeddah, Saudi Arabia

email: saeed@asiri.net

The main category in the education system was to know how to read and write. In the future, however the backbone of the education system will be the optimal use of new technology to achieve the high quality and quantity of the product of education sectors. No doubt that the indication of literacy will not be the reading and writing any more but the level of ability to get the right piece of information in the shortest way and shortest time using the internet which will prove to be the 21st century equivalent of the calculator. Adding technology to education system has been a top priority at a lot of institutions since the use of the technology in the education sector is no more an option but it is a strategy. There is a lot of universities and schools that have adopted the technology in the learning environment. The starting point was with virtual course then virtual class and virtual colleges and finally virtual universities. Adopting the new technologies can change the traditional teacher centered approach to student centered approach, and thus may contribute so much to improving the quality of the learning environment. In this paper, the main point is how to use the new technology, namely the course website, for the sake of effective and high quality learning in engineering schools. It has mentioned one example which is the website of an engineering course, mechanical vibrations, of King Abdulaziz University to show the main characteristics of the active and dynamic course website