“Growing a Large, Collaborative Plone Site”

J Cameron Cooper
jccooper@rice.edu

Connexions

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Connexions is:

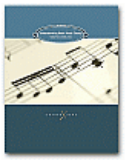
a place to view and share educational material made of small knowledge chunks called modules that can be organized as courses, books, reports, *etc.* Anyone may view or contribute:

- **authors** create and collaborate
- **instructors** rapidly build and share custom collections
- **learners** find and explore content

More about us ...

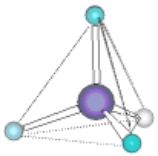
FEATURED CONTENT

Understanding Basic Music Theory



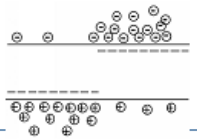
"Understanding Basic Music Theory" is an introduction to music theory by one of Connexions' most popular authors. In addition to the basic concepts of music theory, this course and book offer a review of common notation and an introduction to the physics behind music theory, as well as a few slightly advanced but very useful topics, such as transposition.

Chemistry Concepts



"Concept Development Studies in Chemistry" is an on-line textbook for an Introductory General Chemistry course. Each module develops a central concept in Chemistry from experimental observations and inductive reasoning. This approach complements an interactive or active learning teaching approach.

Introduction to Physical Electronics



This course offers an introduction to solid state device including field effect and bipolar transistors. Properties of transmission lines and propagating E&M waves are also presented. It is available both online and as a print-on-demand book.

FIND CONTENT

4797 reusable modules woven into **285** collections.

Search Content | Go

or browse by ...

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SPOTLIGHT

Featured author

Ricardo von Borries is using Connexions to bring digital signal processing content to engineering students in Latin America. Ricardo, an assistant professor of Electrical and Computer Engineering at the University of Texas at El Paso (UTEP), is leading a team that is translating two digital signal processing (DSP) Connexions courses from English to Spanish.

Read more...

- Señales y Sistemas
- Other Spanish content in Connexions

CONNEXIONS NEWS

- Connexions featured in Educational Technology
  2007-11-06
- IEEE Signal Processing Society Announces

Module

COLLECTION CONTENTS

Go to collection home page

[show table of contents]

CONTENT ACTIONS

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RELATED MATERIAL

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LENSES

Member lists (?)

- Printable Books

Tags (?)

- electronics
- collegeLevel

INSIDE COLLECTION (COURSE):

Introduction to Physical Electronics

NEXT »

Course by: Bill Wilson

Simple Conduction

Module by: Bill Wilson

Summary: Introduction of simple conduction, including the basic ideas and models of conductor.

Our initial studies will more or less be a review of topics in electricity that you may have seen before in physics. However, if experience is any guide, there is no great harm in going back over this material, for it seems that for many students, the whole concept of just how electricity actually works is just a little hazy. Considering that you hope to be called an electrical engineer one of these days, this might even be a good thing to know!

Most of the "laws" of how electricity behaves are really just mathematical representations of a number of empirical observations, based on some assumptions and guesses which were made in attempt to bring the "laws" into a coherent whole. Early investigators (Faraday, Gauss, Coulomb, Henry etc....all those guys) determined certain things about this strange "invisible" thing called electricity. In fact, the electron itself was only discovered a little over 100 years ago. Even before the electron itself was observed, people knew that there were two kinds of electric charge, which were called **positive** and **negative**. Like charges exhibit a repulsive force between them and opposite charges attract one another. This force is proportional to the product of the absolute value of positive and negative charge, and varies inversely with the square of the distance between them. Different charge carriers have different mass, some are very light, and others are significantly heavier. Electrical charges can experience forces, and can move about. Since force times distance equals work, a whole system of energy (**potential** as well as **kinetic**) and energy loss had to be described. This has lead to our current system of electrostatics and electrodynamics, which we will not review now but bring up along the way as things are needed.

Just to make sure everyone is on the same footing however, let's define a few quantities now, and then we will see how they interact with one another as we go along.

The total charge in some region is defined by the symbol Q and it has units of Coulombs. The fundamental unit of charge (that of an electron or a proton) is symbolized either by a little q or by e. Since we'll use e for other things, in this course we will try to stick with q. The **charge of an electron**, q, has a value of 1.6×10^{-19} Coulombs.

Since charge can be distributed throughout a region with varying concentrations, we will also talk about the **charge density**, $\rho(v)$, which has units of $\frac{\text{Coulombs}}{\text{cm}^3}$. (In this book, we will use a modified MKS system of units. In keeping with most workers in the solid-state device field, volume will usually be expressed as a cubic centimeter, rather than a cubic meter - a cubic meter of silicon is just far too much!) In most cases, the charge density is not uniform but is a function of where we are in space. Thus, when we have $\rho(v)$ distributed throughout some volume, V

$$Q = \int_V \rho(v)\,dv \tag{1}$$

describes the total charge in that volume.

We know that when we apply an electric field to a charge that there is a force exerted on it, and that if the charge is able to move it will do so. The motion of charge gives rise to an **electric**

Collection

CONTENT ACTIONS

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COLLECTION CONTENTS

Conductors, Semiconductors and Diodes

- Simple Conduction
- Introduction to Semiconductors
- Doped Semiconductors
- P-N Junction: Part I
- PN-Junction: Part II
- Gauss' Law
- Depletion Width
- Forward Biased
- The Diode Equation
- Reverse Biased/Breakdown
- Diffusion
- Light Emitting Diode
- LASER
- Solar Cells

Bipolar Transistors

- Intro to Bipolar Transistors
- Transistor Equations
- Transistor I-V Characteristics
- Common Emitter Models
- Small Signal Models
- Small Signal Model for Bipolar Transistor

FETs

- Introduction to MOSFETs
- Basic MOS Structure
- Threshold Voltage
- MOS Transistor
- MOS Regimes
- Plotting MOS I-V
- Models

Introduction to Physical Electronics

Collection type: Course
Course by: Bill Wilson

Start »

Order printed copy

Summary: An introduction to solid state device including field effect and bipolar transistors. Properties of transmission lines and propagating E&M waves.

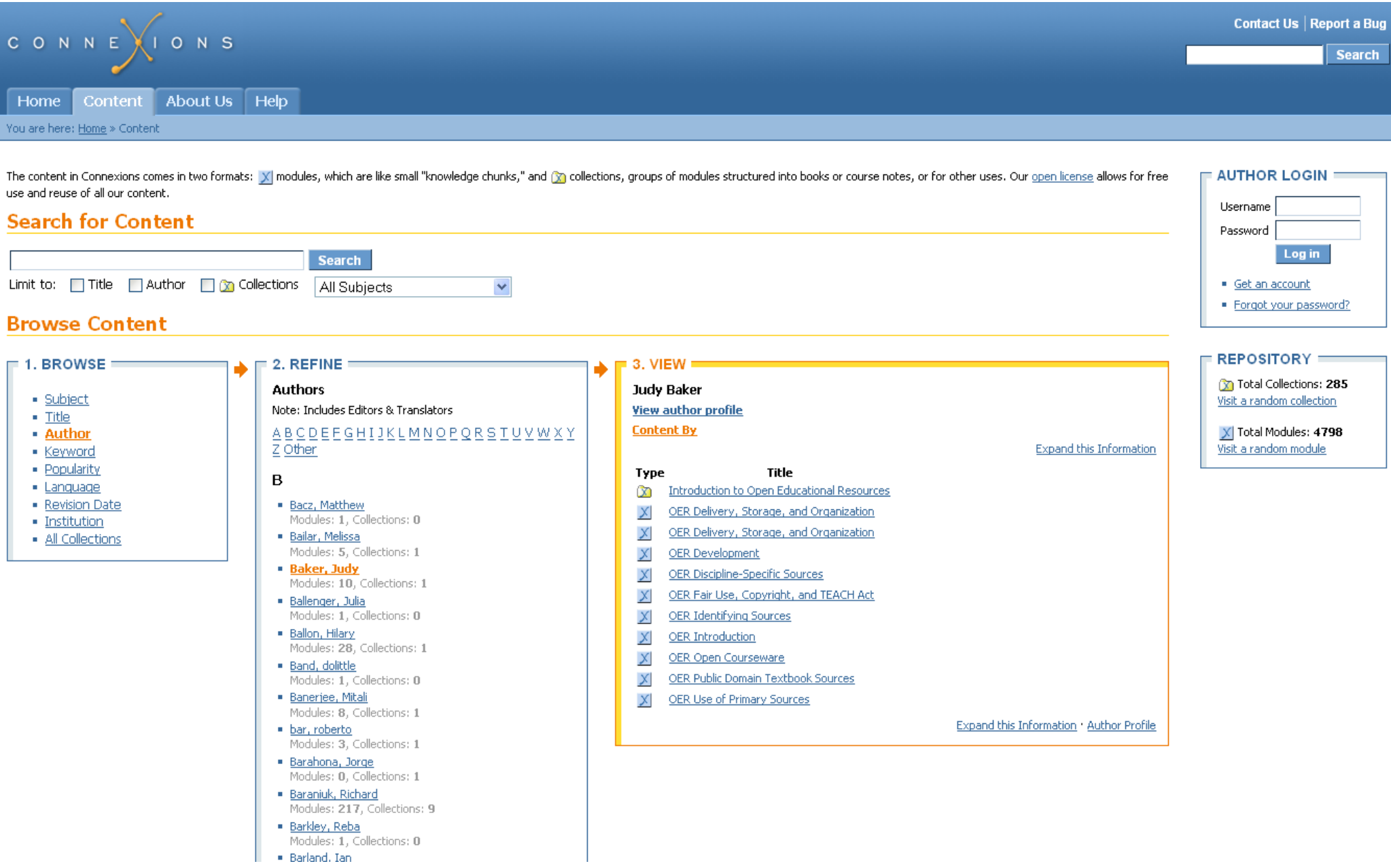
Instructor: William Wilson
Institution: Rice University
Course Number: ELEC 305

This collection contains:

Modules by: Bill Wilson

Last edited by Chuck Bearden on Sep 17, 2007 8:14 am GMT-5.

Browsing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All Collections
2. REFINE
Authors
Note: Includes Editors & Translators
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other
B
Bacz, Matthew
Modules: 1, Collections: 0
Bailar, Melissa
Modules: 5, Collections: 1
Baker, Judy
Modules: 10, Collections: 1
Ballenger, Julia
Modules: 1, Collections: 0
Ballon, Hilary
Modules: 28, Collections: 1
Band, dolittle
Modules: 1, Collections: 0
Banerjee, Mitali
Modules: 8, Collections: 1
bar, roberto
Modules: 3, Collections: 1
Barahona, Jorge
Modules: 0, Collections: 1
Baraniuk, Richard
Modules: 217, Collections: 9
Barkley, Reba
Modules: 1, Collections: 0
Barland, Ian
3. VIEW
Judy Baker
View author profile
Content By
Expand this Information
Type Title
Introduction to Open Educational Resources
OER Delivery, Storage, and Organization
OER Delivery, Storage, and Organization
OER Development
OER Discipline-Specific Sources
OER Fair Use, Copyright, and TEACH Act
OER Identifying Sources
OER Introduction
OER Open Courseware
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Popularity

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1. BROWSE

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2. REFINE

Popularity

- **Most Popular Last Week**
- Most Popular of All Time

3. VIEW

Most Popular Last Week

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[1] 2 3 4 ... 101 Next 50 »

Type	Title	Visits/Day	Percentile
	Minor Keys and Scales	392.38	99.98%
	Major Keys and Scales	239.86	99.96%
	Clef	198.39	99.94%
	Measures of Central Tendency	191.15	99.92%
	The Circle of Fifths	183.91	99.90%
	The Music of the Romantic Era	179.08	99.88%
	Tuning Your Guitar	172.12	99.86%
	Variables	158.34	99.84%
	Key Signature	153.09	99.82%
	Galileo's Telescope	148.26	99.80%
	Transposing Instruments	137.47	99.78%
	Percentiles	125.11	99.76%
	Species Diversity	119.15	99.74%
	Concept Development Studies in Chemistry	118.86	99.72%
	Pitch: Sharp, Flat, and Natural Notes	118.58	99.70%
	Frequency Polygons	118.44	99.68%
	Gen Chem Lab	118.30	99.66%
	Molecular Geometry and Electron Domain Theory	118.15	99.64%
	Convolution - Complete example	117.59	99.62%
	Transposition: Changing Keys	114.32	99.60%
	Melody	112.62	99.58%
	LabVIEW Graphical Programming Course	111.76	99.56%
	Algebra Lineal: Conceptos Básicos	110.34	99.54%
	Timbre: The Color of Music	107.36	99.52%
	Horizontal Asymptotes	106.65	99.50%
	What is a Dependent Variable?	105.66	99.48%
	What Kind of Music is That?	102.67	99.46%
	The Textures of Music	102.39	99.44%
	Understanding Basic Music Theory	99.83	99.42%
	Funciones Racionales	97.42	99.40%
	Scales that aren't Major or Minor	95.86	99.38%
	Kirchoff's Laws	95.29	99.36%
	LabVIEW Course Exercise Code	94.86	99.34%

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REPOSITORY

Total Collections: **285**
Visit a random collection

Total Modules: **4798**
Visit a random module

Feedback

Figure 11: You may also find it useful to compare the dorian with the minor scales from **Figure 6**. Notice in particular the relationship of the altered notes in the harmonic, melodic, and dorian minors.

Comments, questions, feedback, criticisms?

Discussion forum

- *Join the discussion »*

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- E-mail the author
- E-mail Connexions

Last edited by Catherine Schmidt-Jones on Oct 3, 2007 12:42 pm GMT-5.

Author Info

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You are here: Home » Member Profile

Member Profile: Catherine Schmidt-Jones

Username: Catherine

Contact: casjones@soltec.net

Location: Champaign, Illinois, USA

Interests: Music

Author of: 167 Modules and 12 Courses (view statistics)

Maintainer of: 15 Modules (view statistics)

Coauthors: Douglas L. Jones, Nelson Lee, Russell Jones

Recommended Content: Understanding Basic Music Theory, A Parent's Guide to Music Lessons, Musical Travels for Children

Biography:

Attended Rice University, completing a B.A. in chemistry as well as the B. Music and M. Music. Married to (Connexions author) Douglas L. Jones. 2004 Connexions Author of the Year. Currently teaching brass and guitar privately.

AUTHOR LOGIN

Username

Password

Log in

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CONNEXIONS NEWS

- Connexions featured in Educational Technology
  2007-11-06
- IEEE Signal Processing Society Announces Partnership with Connexions
  2007-10-31
- Introducing Advanced Search with Usage Statistics

Stats

Browse by Author: Robert Ahlfinger

View author profile

Return to Browsing Content | Search for Content

- Content by Robert Ahlfinger
- Other authors' collections containing modules by Robert Ahlfinger
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See the Connexions glossary for our definitions of module and collection.

Sort by: Popularity Results per page: 10

View: Detail | Compact | **Statistics**

Statistics: **All Time** | Recent (10/29–11/05)
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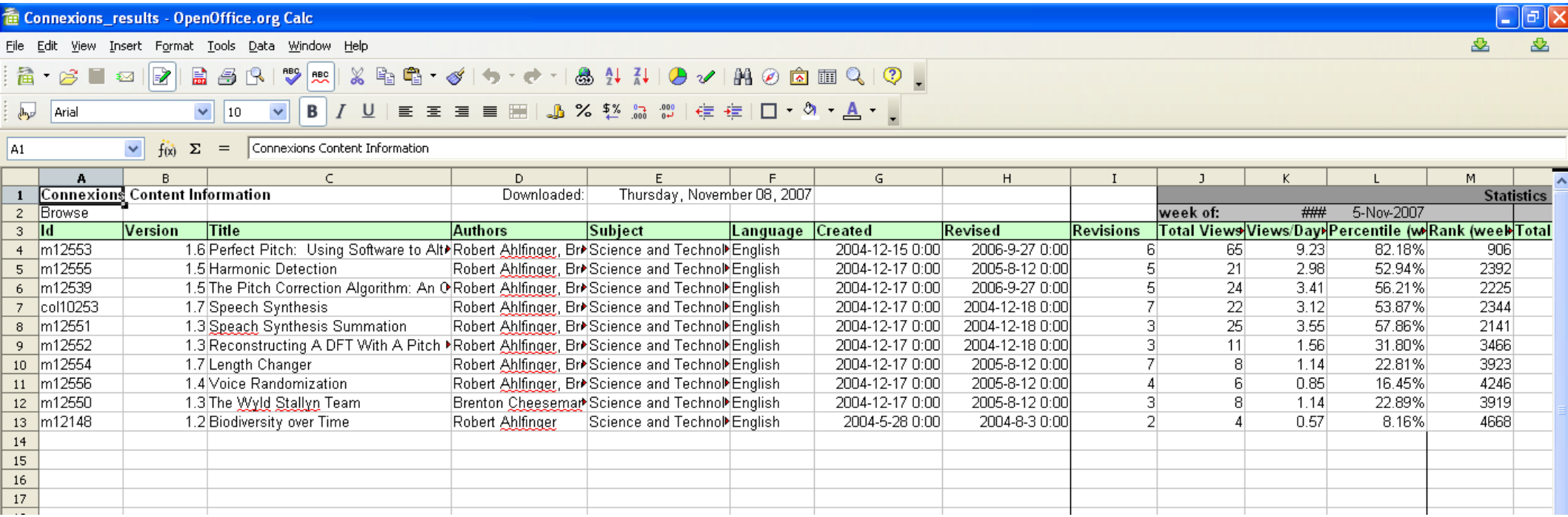
	Total Views	Views/Day	Percentile	Rank
Perfect Pitch: Using Software to Alter Your Voice (m12553)	15145	14.39	89.46%	535
Harmonic Detection (m12555)	7158	6.80	70.96%	1476
The Pitch Correction Algorithm: An Overview (m12539)	7112	6.76	70.76%	1486
Speech Synthesis (col10253)	6947	6.60	69.91%	1529
Speach Synthesis Summation (m12551)	4670	4.44	54.88%	2293
Reconstructing A DFT With A Pitch Shift (m12552)	3467	3.29	42.30%	2932
Length Changer (m12554)	2754	2.62	32.75%	3418
Voice Randomization (m12556)	2641	2.51	31.04%	3505
The Wyld Stallyn Team (m12550)	2621	2.49	30.91%	3512
Biodiversity over Time (m12148)	2414	2.00	23.08%	3909

Even more stats



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1	Connexions	Content Information		Downloaded:	Thursday, November 08, 2007								Statistics	
2	Browse									week of:	###	5-Nov-2007		
3	Id	Version	Title	Authors	Subject	Language	Created	Revised	Revisions	Total Views	Views/Day	Percentile (w	Rank (week	Total
4	m12553	1.6	Perfect Pitch: Using Software to Alt	Robert Ahlfinger, Br	Science and Technol	English	2004-12-15 0:00	2006-9-27 0:00	6	65	9.23	82.18%	906	
5	m12555	1.5	Harmonic Detection	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2005-8-12 0:00	5	21	2.98	52.94%	2392	
6	m12539	1.5	The Pitch Correction Algorithm: An O	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2006-9-27 0:00	5	24	3.41	56.21%	2225	
7	col10253	1.7	Speech Synthesis	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2004-12-18 0:00	7	22	3.12	53.87%	2344	
8	m12551	1.3	Speach Synthesis Summation	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2004-12-18 0:00	3	25	3.55	57.86%	2141	
9	m12552	1.3	Reconstructing A DFT With A Pitch	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2004-12-18 0:00	3	11	1.56	31.80%	3466	
10	m12554	1.7	Length Changer	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2005-8-12 0:00	7	8	1.14	22.81%	3923	
11	m12556	1.4	Voice Randomization	Robert Ahlfinger, Br	Science and Technol	English	2004-12-17 0:00	2005-8-12 0:00	4	6	0.85	16.45%	4246	
12	m12550	1.3	The Wyld Stallyn Team	Brenton Cheeseman	Science and Technol	English	2004-12-17 0:00	2005-8-12 0:00	3	8	1.14	22.89%	3919	
13	m12148	1.2	Biodiversity over Time	Robert Ahlfinger	Science and Technol	English	2004-5-28 0:00	2004-8-3 0:00	2	4	0.57	8.16%	4668	
14														
15														
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- **instructors** rapidly build and share custom collections
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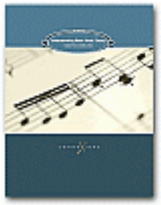
FEATURED CONTENT

Understanding Basic Music Theory



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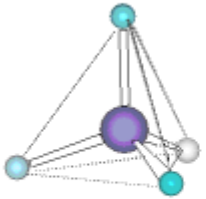

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Featured Author

SPOTLIGHT

Featured author

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- Señales y Sistemas
- Other Spanish content in Connexions

Lenses

Public Lenses

Lists of content selected by an organization or individual

Endorsement lenses

Selections of content that have been carefully checked for quality by the lens maker

- National Council of Professors of Educational Administration
  Lens by: National Council of Professors of Educational Administration
  Content: 56 modules and/or collections
- Travelers in the Middle East Archives
  Lens by: Travelers in the Middle East Archive
  Content: 37 modules and/or collections

Affiliation lenses

Selections of content that are affiliated with a particular organization

- Texas Instruments MSP430
  Lens by: Texas Instruments
  Content: 32 modules and/or collections
- Rice University ELEC 301 Project Lens
  Lens by: Rice University ELEC 301
  Content: 4 modules and/or collections
- Rice University Press Titles
  Lens by: Rice University Press
  Content: 2 modules and/or collections
- Collaborative Development of Ethics Across the Curriculum Resources and Sharing of Best Practices's Lens
  Lens by: Collaborative Development of Ethics Across the Curriculum Resources and Sharing of Best Practices
  Content: 19 modules and/or collections
- National Instruments
  Lens by: National Instruments
  Content: 13 modules and/or collections

Member lists

Selections of content for any purpose

Lenses

Texas Instruments MSP430

Lens by: Texas Instruments

Texas Instruments is committed to helping students and professors develop the future of ultra-low power microcontrollers through the development and distribution of free educational content. Learn more at the TI University Program Website

Learn more about the MSP430

Affiliated content (what's this?)

See the Connexions glossary for our definitions of module and collection.

Sort by: Type Results per page: 10

View: **Lens** | Detail | Compact | Statistics [1] 2 3 Next 10 »

Introduction to the Texas Instruments ez430 (col10354)
Author: Naren Anand
Lens Tags: Course ez430 Programming Basics
Lens Comments: This is the entire course organized at Rice University for all the basic lessons for using an MSP430. It is designed for the use of an eZ430 tool and is still under construction.

Microcontroller and Embedded Systems Laboratory (col10215)
Authors: Patrick Frantz, CJ Ganier, Erik Welsh, adrian valenzuela
Lens Tags: DSP Course Lab Programming Basic Embedded Assembly Interrupts
Lens Comments: Basic introduction to microcontroller-based embedded systems development. Includes structured laboratory exercises in the following areas: assembly programming, C language programming, peripheral interfacing, interrupt management, structured programming, task scheduling, simple digital signal processing (DSP), and other related topics. This course assumes no prerequisites and is primarily intended for first and second year engineering students.

1.2 - Introduction to the IAR Workbench IDE (m13619)
Author: Naren Anand
Lens Tags: IAR Kickstart Programming
Lens Comments: A quickstart tutorial to the IAR Workbench IDE. Learn how to create a project, edit files, build solutions, and use the debugger.

1.3 - Introduction to Programming the ez430 (m13623)
Author: Naren Anand
Lens Tags: ez430 Tutorial Basic I/O
Lens Comments: This is a basic tutorial on how to program the basic digital peripherals on the ez430.

Lenses – on content

CONTENT ACTIONS

- Save to del.icio.us (what's this?)

QUALITY

Affiliated with (?)

- National Instruments

COLLECTION CONTENTS

- DSP Laboratory: Introduction, Hardware and Software Setup
- DSP Laboratory: Analog to Digital and Digital to Analog Conversion
- DSP Laboratory: Time and Frequency Displays
- DSP Laboratory: Aliasing
- Interactive Digital Filter Design - Online Tool for IIR Filter and FIR Filter Design
- DSP Laboratory: IIR Notch Filter Design
- DSP Laboratory: IIR Filter Design via the Bilinear Transformation
- DSP Laboratory: FIR Filter Design

LENSES

Member lists (?)

- NI Signal Processing

Tags (?)

- LabVIEW
- DSP

Fundamentals of Digital Signal Processing Lab

Collection type: Course
Course by: Erik Luther

Start »

Summary: The purpose of this lab is to familiarize students with the DSP development workstation in the signal processing lab by examining sampli signals. Specifically, we will first look at sampling/reconstruction of continuous-time signals. We will then examine time- and frequency-domain d sampling frequency and its effects on aliasing.

Instructor: A. David Salvia
Institution: Pennsylvania State University
Course Number: EE 453

This collection contains:

Modules by: Erik Luther, Jim Cahow

Last edited by Erik Luther on Jan 3, 2006 5:24 pm US/Central.

Usability testing

Current Test

== Sidebar and Popups Take 2, part 2 =

1. http://mountainbunker.org/~maxwell/sidebar-changes/testing/this-content-is.html
2. http://mountainbunker.org/~maxwell/sidebar-changes/testing/lenses.html
3. http://mountainbunker.org/~maxwell/sidebar-changes/testing/quality.html

Test Questions

Preliminary user instructions "We are testing a new feature in Connexions. We are not testing you. If you are comfortable thinking aloud as you explore, it gives us really valuable information to help improve Connexions. Any problems you encounter help us to reevaluate ways to make things clearer."

Test Setup: Open the first mockup (#1). Tell the user: "Imagine you are a regular connexion user and understand what is connexions and the content is connexions. (If need be - give a brief overview of Cnx modules and collections here.) You searched for music and found this page. Feel free to look around, scroll up and down and. We want you to focus on the 2nd box on the left." Give them a few minutes, then ask the following questions:

- What does the second box on the left tell you?
- what is endorsed by WCMEA?
- What are tags? Where do they come from?
- What do you think "member" means?
- Do you understand what a lens is?
- Why are all these things (endorsements, affiliations, lists, tags) in one box?
- What do you expect to get if you click on
  - WCMEA?
  - K-12?
  - Jane Smith?
  - One of the tags?

Optional (if you have time)

Next show them the 2nd mockup. Repeat all the questions above. Lastly, Ask them if the concept of lenses is any clearer here?

Next show them the 3rd mockup. Repeat all the questions above. Lastly ask them if the concept of "Quality" would matter to them as a reader?

Flashy stuff

Organizational

- Keep complexity down
- Keep changes well controlled
  - code tracking
  - no TTW! (except emergencies)
- Test hard
- Try to upstream everything you can
- Good bug tracking worth its weight in gold

Upstreaming

- Bug reports, at least
- When you fix, fix upstream, even if you can't wait
- Put features into existing projects, if they want it
- Spin off everything you can
- Yes, it's hard when your hair's on fire
- If you don't start open source, it's hard to get there
- But, yes, it works

Scaling

- Standard stuff
  - Caching... no really
  - Hardware may be cheaper
- Specifically
  - Be sure to test with load for things that scale badly
  - Design around conflict errors
  - Sessions can be trouble

Upgrading

- Templates are biggest problem
- Note in each template/monkeypatch everything you do
- Going off the rails may work better
- Make install scripts idempotent
  - including upgrade bits

Future

- More open sourcing
  - You will be able to install it!
- Print on demand
- Distributed repository
- Plug: come work with us!