



# E101 – Introduction to Engineering and Problem Solving

Dr. Bill Hunt, PE  
Sections 002 & 003  
Monday, September 7, 2008



## Agenda – 07Sep08

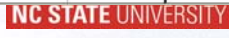
- Assign Seats & Student Teams (EA's)
- Student Q&A
- Review Course Schedule
- HW #1: Resumes
- What is an Engineer?
- Engineers in History
- Going to Mars
- Characteristics of an Engineer
- Reminders/ Info Sessions



## Course Schedule: Sec 002 & 003

- [www.bae.ncsu.edu/people/faculty/hunt](http://www.bae.ncsu.edu/people/faculty/hunt)
- Highlights:
  - Midterm on Nov. 17
  - FEDD on Nov. 25
  - No Class Oct. 6
  - Final Exam is FEDD oral presentation

Date	Subject	Reading	Assignment
Sept 08 (Week 0)	Introduction to Engineering & Problem Solving		Midterm Exam Prep
Sept 15 (Week 1)	Course Overview	ENR 101, Introduction to Engineering & Problem Solving	Assign HW #1, Student Q&A
Sept 22 (Week 2)	What is an Engineer?	ENR 101, 102	Assign HW #2, Student Q&A
Sept 29 (Week 3)	History, Myths, Careers, Opportunities & Rewards	ENR 101, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	




## Homework #1 - Resume

<http://courses.ncsu.edu/e101/lec/040/docs/resume.pdf>

### Class Schedule

<http://www.bae.ncsu.edu/people/faculty/hunt>



## HW #1: Sec 002 & 003 Changes

NC STATE UNIVERSITY

E 101: Introduction to Engineering & Problem Solving  
College of Engineering  
Resume Assignment

In this assignment, you will develop the foundation for a resume that will evolve as you grow in your education and experiences. This living document will represent you as you pursue professional and educational opportunities.

FOR WEEK # \_\_\_\_:


Create or revise your resume, a document that speaks to all of your pertinent experiences to date. Use on-line resources to customize a resume that speaks about you. *Limit your resume to one page.*

Deliverable: Bring a hard copy of your resume to class to exchange and review with a peer.

FOR WEEK # \_\_\_\_:


1. Revise your resume per the comments and discussion in class.

Deliverable: A hard copy of your revised resume.



## HW #1: Sec 002 & 003 Changes

- Dr. Hunt: Recommends but does not require you to share your resumé with a classmate.
- Do NOT write a short essay.
- YOUR grading rubric will be:
  - 15 points resume (10 content, 5 appearance)
  - 5 points Personal Profile in e-Pack



## HW #2 – Plan of Work

- <http://courses.ncsu.edu/e101/lec/040/docs/plan.pdf>
- Due on Monday, September 22, 2008
  - At beginning of class
- Please review assignment and bring questions on it to class next week.
- Short Summary:
  - Plan classes for your first 4 academic semesters
  - Answer Self-reflection questions
  - Grading Rubric for Sections 002 & 003 the SAME as listed on assignment.

**NC STATE UNIVERSITY**

## What is an Engineer?

**NC STATE UNIVERSITY**

## To Be An Engineer

- Problem Solver using Math, Science, and Economics
- Based on Medieval System: Apprentice, Journeymen, Professional (student), (EI), (PE)
- It's a long process, study what you WANT to study.

**NC STATE UNIVERSITY**

## Engineers in History

(From Encyclopedia Britannica)

**NC STATE UNIVERSITY**

## Engineers in History

(From Encyclopedia Britannica)

**NC STATE UNIVERSITY**

## Engineers in History

World Population Growth, Actual and Projected, 1950-2050

UNITED NATIONS PROJECTIONS

High Medium Low

From the United Nations

**NC STATE UNIVERSITY**

Cyberindian.com

- How do we feed all these people?

NC STATE UNIVERSITY

## Engineers in History

- “The world's absolute food supply is **almost certainly sufficient** for six billion or more people now and in the future”
- “yet some 841 million people-nearly one sixth of the world's population-are chronically malnourished today”  
~from UN Report

NC STATE UNIVERSITY

## Engineers in History

(From Case-Western Reserve University)

NC STATE UNIVERSITY

## Engineers in History

© Stephen Bay / Bayimages.net

From Bayimages.net

NC STATE UNIVERSITY

## Engineers in History

FORD MODEL T FORD MOTOR COMPANY  
(For details see details)  
4-Door—4-Cylinder—30 Horsepower Car. Price \$900 includes  
speedometer, two 6-inch gas lamps, generator, three oil lamps, horn  
and axle—E.C.B. Detroit. No Ford Cars sold un-equipped

(From the Henry Ford Foundation)

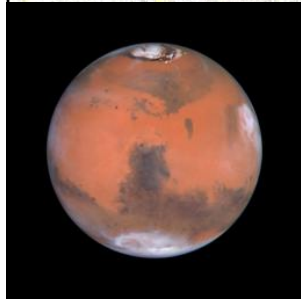
NC STATE UNIVERSITY

## Engineers in History

- The Automobile...
- Mechanical Engineers – create the product
- Industrial Engineers – create the product efficiently (assembly line)
- Chemical Engineers – power the product
- Civil Engineers – Give the product room to move

NC STATE UNIVERSITY

## Class Exercise: Going to Mars



From Planet-Mars.com

- What types of engineers are needed to take people from Earth to Mars?

NC STATE UNIVERSITY

## Going to Mars

- List Engineer Type
- List Engineer Type
- EX: Aerospace Engineer



NC STATE UNIVERSITY

## Characteristics of a Good Engineer (work in Teams)

- List Characteristic
- List Characteristic
- EX: Open Mind



NC STATE UNIVERSITY

## Characteristics of a Good Engineer

- Communication
- Competence
- Perseverance
- Honesty
- Curiosity
- Creativity
- Leadership
- Dependability
- Organization
- Continuing Education
- Community Involvement
- Logical & Quantitative Thinking



NC STATE UNIVERSITY

## Final Reminders

- Homework #1 due at **BEGINNING** of class on 9/15
- Homework #2 due at **BEGINNING** of class on 9/22
  - Preview this week & Bring Questions to next class
- Co-op Sessions this & next week:
  - September 11 – 1pm – 301 Clark Hall
  - September 17 – 3:30pm – 301 Clark Hall

NC STATE UNIVERSITY