Directory of Projects for First-Year Engineering Students

P1 - Design Your Process of Becoming a World-Class Engineering Student, University of Alaska, Anchorage

P2 - Group Presenation on Engineering Disciplines, Raritan Valley Community College

P3 - Paper Bridge Competition, Raritan Valley Community College

P4 - Rube Goldberg Device, Bevill State Community College

P5 - Tank Agitator Design Project, Chabot College

P6 - Around the Flag Pole, San Diego Mesa Community College

P7 - Device to Fire on Target, Missouri University of Science and Technology

P8 - Energy from a Tower to Move an Object, Missouri University of Science and Technology

P9 - Kinetic Battery, Missouri University of Science and Technology

P10 - Storm the Castle, Missouri University of Science and Technology

P11 - Wind Turbine Design Project, Marshall University

P12 - House of Cards Activity, Marshall University

P13 - Solar Power EFFECT, Marshall University

P14 - Balsa Wood Bridge Project, Seattle Central Community College

P15 - Pinewood Derby Race, Seattle Central Community College

P16 - Medical Supply Drop Device, Itasca Community College

P17 - Walk on Water Project, University of San Diego

P18 - Bridge Design Project,. Delta College

P19 - Glider Competition, Cal Poly San Luis Obispo

P20 - Rocket Competition, Cal Poly San Luis Obispo

P21 - Preparing for a Mechanical Engineering Career, Colorado State University

P22 - Solar Water Heater, Clarkson University

P23 - Another Brick in the Wall, Carnegie-Mellon University

P24 - Backwater Blues, Carnegie-Mellon University

P25 - Bridge Over Troubled Waters, Carnegie-Mellon University

P26 - Energy Conversion System for Airflow Power, Clarkson University

P27 - Spill-Proof Table Candle Holder, Clarkson University

P28 - Design of a One-Handed Shovel, Clarkson University

P29 - Bottle Rocket Project, Calvin College

P30 - Open-Ended Service Design Project, Calvin College

P31 - Design, Construct and Test Model Bridge, Loyola Marymount University

P32 - Design, Construct and Test Solar Oven, Loyola Marymount University

P33 - Interview a Practicing Engineer, Lamar University

P34 - Reverse Engineering of a Simple Machine, Pennsylvania State University

P35 - Entirely Edible Scale, Kansas State University

P36 - Group Research Study, Lehigh University

P37 - Rube Goldberg Project, Portland State University

P38 - Bubble Machine Design, North Carolina State University

P39 - Design, Build and Test a Model Concrete Canoe, North Carolina State University

P40 - Design and Build a Liquid Fountain, North Carolina State University

P41 - Design and Build and Rube Goldberg Machine, North Carolina State University

P42 - Design and Build an Arcade Game, North Carolina State University

P43 - Hovercraft Project, North Carolina State University

P44 - Mini Rose Parade Float Project, Cal Poly Pomona

P45 - Lego Robot Project, Texas A&M, Corpus Christi

P46 - Shopping Center Design Problem, Syracuse University

P47 - Air-Powered Car Project, Texas A&M University

P48 - Design, Build and Test a Tennis Ball Launcher, Western Kentucky University

P49 - Inventory Robot Design Project, Western New England University

P50 - Mousetrap Powered Vehicle, University of Akron

P51 - Design and Build a QWERTY Machine, Cal Poly San Luis Obispo

P52 - Design and Build a Stop-Shoot Vehicle, Weber State University

P53 - Lego Mindstorm Search and Destroy Vehicle, Saginaw Valley State University

P54 - Power Consumption of Server Farm, Texas A&M University

P55 - Lego Mindstorm Robot for Coup de Bot Tournament, Rose-Hulman Institute of Technology

P56 - Lego Mindstorm Robot for Rowbowl a-Rama Tournament, Rose-Hulman Institute of Technology

P57 - Edible Car Project, Youngstown State University

P58 - Mini Golf-Hole Project, Youngstown State University

P59 - Development of a Commercial for a Phony Product, Cal Poly San Luis Obispo

P60 - Electricity Generation from Renewable Sources, Winona State University

P61 - Build a Cantilever Using Straws and Masking Tape, Highline Community College

P62 - Programming a Simple Music Synthesizer and Transcriber in MATLAB, University of Michigan

P63 - Identify and Solve a Significant Technical Problem, University of Minnesota

P64 - Rube Goldberg Machine, University of Hawaii

P65 - Duck Pond Project, University of New Mexico

P66 - Living Roof Design Project, University of New Mexico

P67 - LEGO Mindstorm Robotic Pet, University of Notre Dame

P68 - The Tower Builders, University of Notre Dame

P69 - Open Ended Design Modeling Project, University of Notre Dame

P70 - Handling and Disposal of Hog Waste, University of Massachusetts, Amherst

P71 - All Season Skate Board, University of Massachusetts, Amherst

P72 - Bioengineering Device or Gadget, University of Illinois, Urbana Champaign

P73 - Deflection of Lumber Under Load, University of Delaware

P74 - Traffic Flow Study, University of Delaware

P75 - Design of Surface Drifter with GPS Sensor, University of Delaware

P76 - Design and Construct a Water Filter, University of Arkansas

P77 - Arduino Basics, University of Arkansas

P78 - Lego Mindstorm Robotics Project, University of Arkansas

P79 - West Point Bridge Design, University of Arkansas

P80 - Water Balloon Launcher, University of St. Thomas

P81 - Modular Bridge Cardboard Project, Mt. Hood Community College

P82 -- Design, Construct and Test a Water Filtration System, University of San Diego

P83 - Analysis of an Energy Technology, University of Massachusetts Amherst

P84 - Redesign of a Consumer Good to Reduce Energy Usage, University of Massachusetts Amherst

P85 - Tamarin and Macaw Enrichment Tree, University of Tennessee at Chattanooga

P86 - Design and Build a Concrete Canoe Display Stand, University of Tennessee at Chattanooga

P87 - Design a Walker for a Disabled Boy, University of Tennessee at Chattanooga

P88 - Bridge Component Tests, University of Washington

P89 - Lego Wimote Controlled Surveillance Robot, University of Washington

P90 - LEGO NXT Project 1 - Drag Race, University of San Diego

P91 - LEGO NXT Project 2 - Shuttle Race, University of San Diego

P92 - LEGO NXT Project 3 - Shuttle Race with Sensors, University of San Diego

P93 - LEGO NXT Project 4 - Breakout of a Box, University of San Diego

P94 - LEGO NXT Project 5 - Relay Race, University of San Diego

P95 - LEGO NXT Second Semester Project, University of San Diego

P96 - Seismic Disaster - Balsa Building Project, Rutgers University

P97 - What's in the Black Box, Rutgers University

P98 - Design and Build a Mousetrap Powered Car, Rutgers University

P99 - Term Project on Sustainable Civil Engineering Technologies, University of Toledo

P100 - Chemical Engineering Process Design Competition, Cornell University

P101 - Design of a Two-Stage Torque Reduction Mechanism, Daniel Webster College

P102 - Develop an Oral Presentation Addressing an Engineering Challenge of Societal Importance - Space Travel Technologies, University of Wisconsin

P103 - Flight Readiness Review - High Dive, Georgia Institute of Technology

P104 - Structural Design of an Ancient Roman Timber Bridge - Stage 1, University of Rochester

P105 - Structural Design of an Ancient Roman Timber Bridge - Stage 2, University of Rochester

P106 - Designing a Throwing Machine for a Disabled Student, Sonoma State University

P107 - Design, Construct and Demonstrate a Self-Propelled Vehicle, University of Texas at Arlington

P108 - Design, Construct and Demonstrate a Ball Shooter, University of Texas at Arlington

P109 - H2Go - The Untapped Energy Source, University of Idaho

P110 - Paper Bridge Design Project, University of Idaho

P111 - Simple Mechanical Product Teardown, Illinois Institute of Technology

P112 - Simple Method to Calculate Low Speed Drag on a Round Object, Illinois Institute of Technology

P113 -Design and Build Truss, Homewood-Flossmoor High School

P114 - LEGO Mindstorms NXT Soccer Tournament, Rose-Hulman Institute of Technology

P115 - LEGO Mindstorms NXT Spiel-N-Spell Tournament, Rose-Hulman Institute of Technology

P116 - LEGO Mindstorms NXT The Third Task, Rose-Hulman Institute of Technology

P117 - Marshmallow Challenge, University of Arizona

P118 - Course Reflection Project, Cal Poly Pomona

P119 - Gaining Respect for Diversity Project, Alfred State University

P120 - Design and Construct a Remotely Operated Underwater Vehicle, MIT Open Courseware

P121 - Design of a Plate System for Posterior Spinal Fusion, Rowan University

P122 - Autonomous Hovercraft Project, University of Maryland

P123 - Automated Guided Vehicle Project, St Cloud State University

P124 - Design Project - Rural Village, University of Tennessee

P125 - Estimation - Team Project, University of Tennessee

P126 - Musical Instrument Project, University of Tennessee

P127 - Newspaper Bridge Project, University of Tennessee

P128 - Roller Coaster Project, University of Tennessee

P129 - Rube Mini-Shooter Project, University of Tennessee

P130 - Cross-fertilization Class Activity, University of Texas El Paso

P131 - Transition from HIgh School to Engineering Study - Cal Poly Pomona

P132 - Design of a Small-Scale Electric Generator - Century College

P133 - Lego Robot Project PickNPlace - Rock Valley College

P134 - Water Rocket Project - Texas A&M University

P135 - Reverse amd Recycle Engineering Group Project - Cabrillo College

P136 - Robot Rat Race Tournament - Rose-Hulman Institute of Technology

P137 - Tremendous Towers Tournament - Rose-Hulman Institute of Technology

P138 - Simon Says - Rose-Hulman Institute of Technology

P139 - RoBunny Rumble - Rose-Hulman Institute of Technology

P140 - NeoPixel Group Project - Rose-Hulman Institute of Technology

Lesson Plans for 116 Engineering Design Projects (intended for ages 8-18 but many can be adapted for first-year engineering students).
http://www.tryengineering.org/lesson-plans