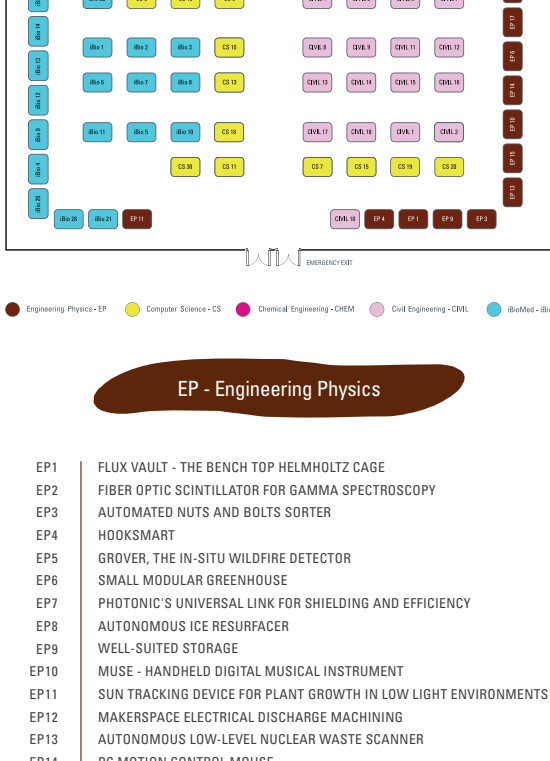


McMaster Engineering CAPSTONE EXPO 2024

Sports Hall



● Engineering Physics - EP ● Computer Science - CS ● Chemical Engineering - CHEM ● Civil Engineering - CIVIL ● iBioMed - IBIO

EP - Engineering Physics

- EP1 FLUX VAULT - THE BENCH TOP HELMHOLTZ CAGE
- EP2 FIBER OPTIC SCINTILLATOR FOR GAMMA SPECTROSCOPY
- EP3 AUTOMATED NUTS AND BOLTS SORTER
- EP4 HOOKSMART
- EP5 GROVER, THE IN-SITU WILDFIRE DETECTOR
- EP6 SMALL MODULAR GREENHOUSE
- EP7 PHOTONIC'S UNIVERSAL LINK FOR SHIELDING AND EFFICIENCY
- EP8 AUTONOMOUS ICE RESURFACER
- EP9 WELL-SUITED STORAGE
- EP10 MUSE - HANDHELD DIGITAL MUSICAL INSTRUMENT
- EP11 SUN TRACKING DEVICE FOR PLANT GROWTH IN LOW LIGHT ENVIRONMENTS
- EP12 MAKERSPACE ELECTRICAL DISCHARGE MACHINING
- EP13 AUTONOMOUS LOW-LEVEL NUCLEAR WASTE SCANNER
- EP14 PC MOTION CONTROL MOUSE
- EP15 ELECTROMECHANICAL GESTURE RECOGNITION GLOVE
- EP16 AUTONOMOUS SEED PLANTER
- EP17 NUCSURVE, AUTOMATED GANTRY-MOUNTED GAMMA DETECTION FOR NUCLEAR WASTE BIN SURVEYING SYSTEM
- EP18 ELECTRICALLY CONTROLLED TINTING GLASSES

CS - Computer Science

- CS1 PEDESTRIAN TRAFFIC CONTROL
- CS2 GEN AI TEST BOT
- CS3 REAL-TIME TRANSLATION
- CS4 STOCKSAVVY: A USER FRIENDLY STOCK MARKET SOLUTION
- CS5 HICKICKEN
- CS6 CLOUD BASED FILE MANAGEMENT SYSTEM
- CS7 CHEM COMPANION - ONLINE CHEMISTRY LEARNING AID
- CS8 JOUNEY AI
- CS9 UPTOP
- CS10 SMARTMO
- CS11 FOOD RESCUE WEBSITE AND APP
- CS12 RHOMBICHESS
- CS13 EMBERALERT
- CS14 CHEF CONNECT
- CS15 DOZENAL CRIBBAGE
- CS16 ABDOMAID
- CS17 DISHYDISHES
- CS18 AI FOR CHEST X-RAY
- CS19 FINDDIT!
- CS20 ALL AT MAC
- CS21 COUNTERPOINTER
- CS22 ETL-AI
- CS24 SHAREWIZE
- CS26 SIMD ON CPYTHON
- CS28 HORIZON DEFENDER
- CS30 MOON TAKEOUT

CHEM - Chemical Engineering

- CHEM1 REDUCING CARBON EMISSIONS IN INTEGRATED STEEL PLANTS
- CHEM2 AI-GUIDED ESTIMATION REGARDING ENTHALPY OF FORMATION FOR MATERIALS DEVELOPMENT PURPOSES
- CHEM3 NET-ZERO VERTICAL FARMING WITH HYPERBOLOID COOLING TOWERS
- CHEM4 IMPLEMENTING MODEL PREDICTIVE CONTROL FOR WATER RESOURCE RECOVERY FACILITIES: INTEGRATING RECURRENT NEURAL NETWORKS THROUGH HYBRID MODELLING TECHNIQUES
- CHEM5 PROJECT WEST-LI: LITHIUM CARBONATE PLANT SCOPING STUDY
- CHEM6 MEASURING MEMBRANE INTEGRITY & WEAR MORE RELIABLY
- CHEM7 SIMULATED LAB-SCALE PROTOTYPE FOR AN ECOLENE™ BIOMETHANOL PLANT
- CHEM8 SCALE-UP PROCESS FOR BIOPLASTIC BOTTLE MANUFACTURING IN NORTH AMERICA
- CHEM9 SUSTAINABLE WOUND DRESSING ALTERNATIVE TO TRADITIONAL BAND-AIDS
- CHEM10 GLOBAL SCALE CLIMATE CHANGE ENGINEERING: AN INTEGRATED BIPOLAR MEMBRANE ELECTRODIALYSIS SYSTEM FOR OCEAN ALKALINITY ENHANCEMENT
- CHEM11 MODELLING OF INDUSTRIAL NYLON-6 (B5700D) POLYMERIZATION WITH DRYER OPTIMIZATION CASE STUDY
- CHEM12 FEASIBILITY STUDY OF THE IMPLEMENTATION AND OPTIMIZATION OF HYDROGEN IN AN INTEGRATED STEEL MILL

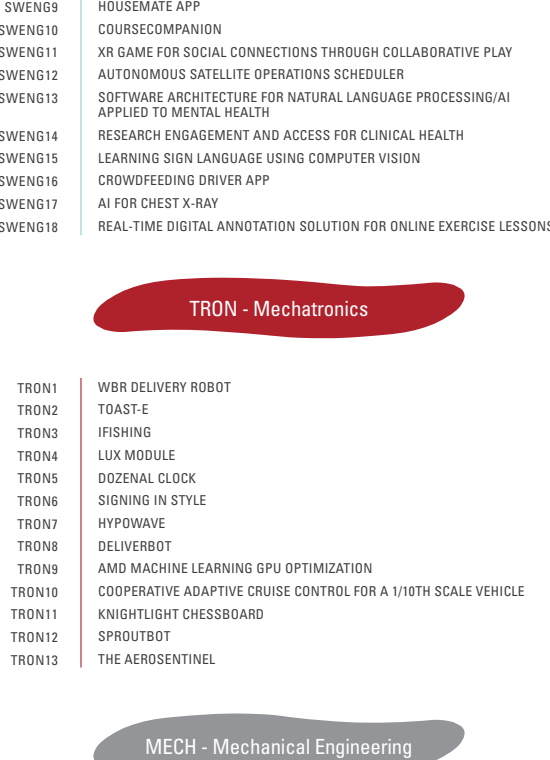
CIVIL - Civil Engineering

- CIVIL1 BOOST REHABILITATION CENTRE FOR LIVING & LEARNING
- CIVIL2 PARKDALE PLACE
- CIVIL3 FAMILY ORIENTED CONDOS IN HAMILTON
- CIVIL4 DOWNTOWN HAMILTON COMMUNITY CENTRE
- CIVIL5 HAMILTON NORTHEAST SENIOR COMMUNITY
- CIVIL6 1218 MAIN ST W
- CIVIL7 HORIZON COMMUNITY CENTRE
- CIVIL8 200 CANNON STREET WEST
- CIVIL9 HAMILTON SOCIAL HOUSING DEVELOPMENT
- CIVIL10 THE URBANIZATION OF VILLIERS ISLAND
- CIVIL11 URBAN SKIFARM (USF)
- CIVIL12 LIBRARY AND LIVING ARTS CENTRE
- CIVIL13 VAUGHAN RAPID TRANSIT
- CIVIL14 NORTH YORK HAVEN AND MEDICAL CLINIC
- CIVIL15 HANZ CARL RECREATION CENTRE
- CIVIL16 THE GREAT LAKES INTERNATIONAL CIRCUIT
- CIVIL17 VERTICAL VILLAGE
- CIVIL18 SOUTH CAMBRIDGE WELLNESS CENTRE AND LIBRARY

IBIO - iBioMed

- IBIO1 STRIDEVITALITY: VALIDATING FES FOR HALLUX VALGUS RELIEF
- IBIO2 THE SURESTRIDE
- IBIO3 STERNAL CLOSURE TESTING SYSTEM
- IBIO4 SELF-REGULATING TOURNIQUE CUFF
- IBIO5 UTILIZING THERMAL IMAGING FOR KITCHEN ACTIVITY MONITORING
- IBIO6 3D PRINTED ENERGY STORAGE AND RETURN ANKLE FOOT ORTHOSIS (ESR-AFO)
- IBIO7 PAPERGUARD
- IBIO8 BREASTFRIEND
- IBIO9 LOW COST MUSCLE TISSUE EXERCISER
- IBIO10 SEGSLICER
- IBIO11 RECYCLING CONTACT LENSES FOR ADVANCED WOUND HEALING APPLICATIONS
- IBIO12 AUTOMATING THE ASSEMBLY OF AN ANTIMICROBIAL WOUND PATCH
- IBIO13 OPTICAL TRACKING SYSTEM FOR USE IN LAPAROSCOPIC SURGERY
- IBIO14 HOTEL NAVIGATION ASSISTIVE ROBOT
- IBIO15 TALOS: THE SOFT MAGNETIC MICROBOT PRINTER
- IBIO16 SELF-REGULATING TOURNIQUE
- IBIO18 IFLOWPLATE - TEER MEASUREMENT OF ENGINEERED TISSUES FOR HIGH-THROUGHPUT DRUG SCREENING HORIZON DEFENDER
- IBIO20 ENHANCING GROCERY STORE ACCESSIBILITY FOR VISUALLY IMPAIRED SHOPPERS THROUGH AN ADVANCED ASSISTIVE DEVICE
- IBIO21 VITALSINES
- IBIO22 SUSTAINSURGICAL
- IBIO23 A CONTACTLESS VITAL SIGNS MONITORING AND ANALYSIS SYSTEM
- IBIO24 PICULTURECAM
- IBIO25 LUNG-ON-A-BALLOON
- IBIO27 SPECTRASTREAM®
- IBIO28 VIELIGHT PHOTOBIMODULATION CLOUD PLATFORM
- IBIO30 MY HEALTH PAL

Burridge Gym



● Electrical and Computer Engineering - ECE01 ● Electrical and Computer Engineering - ECE02 ● Software Engineering - SW ● Mechanical Engineering - MECH ● Bachelor of Technology - BTECH ● Material Science and Engineering - MATLS

ECE01 - Electrical & Computer Engineering

- ECE01S01 PANAVISTA
- ECE01S02 LASER POWER AND COMMUNICATION OVER THE AIR
- ECE01S03 MEDDETECT
- ECE01S04 APES (ATHLETIC PUNCH EVASION SYSTEM)
- ECE01S05 GPET
- ECE01S06 SOLARSENSE TECH
- ECE01S07 TRAFFIC PRO: REGIONAL SAFETY COMPANIONV
- ECE01S08 DYNADRIVE
- ECE01S09 ECHO
- ECE01S10 KEEPUP
- ECE01S11 STUDYAI
- ECE01S12 RCTSORT
- ECE01S13 INSTRUMENTLE
- ECE01S14 RESODRONE
- ECE01S15 S.A.F.E.R. KEY
- ECE01S16 ROCK-A-BOT CRADLE
- ECE01S17 FLYFIST
- ECE01S18 STRAWBERRY GUARD
- ECE01S19 CIRCUIT-CRAFT
- ECE01S20 GROUP - 20
- ECE01S21 MODULAR SAFETY SYSTEM
- ECE01S22 AUTOMATION OF SENSORS CALIBRATION GAS CHAMBERS
- ECE01S23 SMARTPOT
- ECE01S24 INTELLIAMP
- ECE01S25 BLOOMBOT
- ECE01S26 BIOMETRIC HOMELAND SECURITY SYSTEM
- ECE01S27 NEUROSHIELD
- ECE01S28 SIGNASPEK AUDIO TRANSCRIPTION GLASSES
- ECE01S29 MYINTERVIEW

ECE02 - Electrical & Computer Engineering

- ECE02G01 HEPHAESTUS
- ECE02G02 EPALLET PLATOON
- ECE02G03 INTELLIGENT PARKING SYSTEM
- ECE02G04 ROCK CLIMBING REMOTE CORRECTION DEVICE
- ECE02G05 ALGAEALERT
- ECE02G06 CUSTOM RISC-V IMAGE PROCESSOR
- ECE02G07 MYLOAD
- ECE02G08 FIT REFLECT
- ECE02G09 ASSISTIVE ARM ENHANCEMENT EXOSKELETON
- ECE02G10 AUTO-DIMMING LIGHTBULB SYSTEM
- ECE02G11 ROCKET BASED DELIVERY SYSTEM
- ECE02G12 AUTONOMOUS, REMOTE-MONITORED GREENHOUSE
- ECE02G13 EYESKETCH PRO
- ECE02G14 REAL TALK
- ECE02G15 INSIGHT
- ECE02G16 THE SLEEPY
- ECE02G17 ACTIVE WALKER GUIDE
- ECE02G18 WIDELY COMPATIBLE DIGITAL PEN

SW - Software Engineering

- SWENG1 GROCERY SPENDING TRACKER
- SWENG2 XR APP FOR SOCIAL CONNECTIONS ON CAMPUS
- SWENG3 FOOD RESCUE USING MICRO DELIVERIES
- SWENG4 SYNCHRONIZED MULTI-PERSON EYE-TRACKING IN DYNAMIC REAL WORLD SCENES
- SWENG5 SMART STUDY HELPER APP
- SWENG6 DEEP-LEARNING WEBCAM EYE-TRACKING IN THE BROWSER
- SWENG7 AI POWERED MOBILE FITNESS APP
- SWENG8 SOFTWARE ARCHITECTURE FOR NATURAL LANGUAGE PROCESSING/AI APPLIED TO MENTAL HEALTH
- SWENG9 HOUSEMATE APP
- SWENG10 COURSECOMPANION
- SWENG11 XR GAME FOR SOCIAL CONNECTIONS THROUGH COLLABORATIVE PLAY
- SWENG12 AUTONOMOUS SATELLITE OPERATIONS SCHEDULER
- SWENG13 SOFTWARE ARCHITECTURE FOR NATURAL LANGUAGE PROCESSING/AI APPLIED TO MENTAL HEALTH
- SWENG14 RESEARCH ENGAGEMENT AND ACCESS FOR CLINICAL HEALTH
- SWENG15 LEARNING SIGN LANGUAGE USING COMPUTER VISION
- SWENG16 CROWDFEEDING DRIVER APP
- SWENG17 AI FOR CHEST X-RAY
- SWENG18 REAL-TIME DIGITAL ANNOTATION SOLUTION FOR ONLINE EXERCISE LESSONS

TRON - Mechatronics

- TRON1 WBR DELIVERY ROBOT
- TRON2 TOAST-E
- TRON3 IFISHING
- TRON4 LUX MODULE
- TRON5 DOZENAL CLOCK
- TRON6 SIGNING IN STYLE
- TRON7 HYPOWAVE
- TRON8 DELIVERBOT
- TRON9 AMD MACHINE LEARNING GPU OPTIMIZATION
- TRON10 COOPERATIVE ADAPTIVE DRIVE CONTROL FOR A 1/10TH SCALE VEHICLE
- TRON11 KNIGHTLIGHT CHESSBOARD
- TRON12 SPROUTBOT
- TRON13 THE AEROSENTINEL

MECH - Mechanical Engineering

- MECHCC01 DEVELOPMENT OF WEARABLE THERMOELECTRIC COOLING SYSTEMS FOR MILITARY AND CIVILIAN PERSONNEL
- MECHCC02 BIO-INSPIRED BODY PROTECTION PANELS
- MECHCC03 ADDITIVE MANUFACTURING OF PASSIVE HEAT SINKS
- MECHCM01 INLET/OUTLET THRUST OPTIMIZATION FOR AN ELECTRIC DUCTED FAN
- MECHCM02 SMOKE-WIRE AND SURFACE STREAMLINE VISUALIZATION SYSTEM FOR LOW-SPEED AERODYNAMIC TESTING
- MECHCM03 SMART SENSING OF UPSTREAM DISTURBANCES ON A LOW REYNOLDS NUMBER FINITE WING
- MECHCQ01 AN ACTIVE-MOTION SIMULATOR TO TEST SHOULDER REPLACEMENTS
- MECHCQ02 A PNEUMATIC IMPACTING SYSTEM FOR BIOMECHANICAL TESTING
- MECHCQ03 SURROGATE TORSO FOR EVALUATING PROTECTIVE ATHLETIC MATERIALS
- MECHEH01 CARBON FIBRE SUPERSTRUCTURE - MCMASER ENGINEERING CONCRETE TOBOGGAN TEAM
- MECHEH02 ASSISTIVE SPORT DEVICE FOR FIGURE SKATERS WITH MOBILITY ISSUES
- MECHEH03 HIGH-PERFORMANCE GRIP OPTIMIZATION OF GOLF CLUBS FOR DISABLED PEOPLE
- MECHF01 DESIGN OF A JUMPING WHEEL-LEGGED ROBOT
- MECHF02 DESIGN OF AN AUTONOMOUS CAPABLE ELECTRIC LAWN MOWER
- MECHF03 GOLF CART ELECTRIC BOOSTER
- MECHGB01 PNEUMATIC NEXT GENERATION COLLABORATIVE ROBOT ARM: DESIGN, BUILD AND TEST
- MECHGB02 WEARABLE ROBOT ARM: DESIGN, BUILD AND TEST
- MECHGB03 HUGGING ROBOT: DESIGN, BUILD AND TEST
- MECHJC01 DESIGN, BUILD, AND TEST AN IMPINGING JET HEAT TRANSFER SURFACE FOR MODULAR THERMAL ENERGY HARVESTING FROM NATURAL GAS-FIRED COOKING APPLIANCES
- MECHJC02 DESIGN, ASSEMBLE, AND TEST AN IMPINGING JET HEAT TRANSFER SURFACE FOR MODULAR THERMAL ENERGY HARVESTING FROM NATURAL GAS-FIRED COOKING APPLIANCES
- MECHJC03 DESIGN OF AN EXPERIMENTAL TEST FACILITY TO INCREASE THERMAL BATTERY CHARGING RATE
- MECHMA01 FIBRACAST HYBRID FIBRE-REINFORCED PLASTIC CASSETTE
- MECHMA02 BAJA SAE WHEEL FORCE TRANSDUCER
- MECHMA03 DESIGNING, AND FABRICATING A SMART MINIMUM QUANTITY LUBRICATION SYSTEM FOR METAL CUTTING PROCESSES
- MECHM02 DESIGN AND CONSTRUCTION OF A MINIATURE HIGH PRESSURE DIE CASTING SETUP
- MECHPK01 JOINT/MUSCLE STRETCHING EQUIPMENT
- MECHPK02 DRIVETRAIN REDESIGN OF AN AUTONOMOUS ROBOT
- MECHRA01 MOBILE WEED CONTROL ROBOT: DESIGN, BUILD AND TEST
- MECHRA02 DESIGN AND CONTROL OF LI-ION BATTERY MODULE FOR BATTERY ELECTRIC VEHICLES
- MECHRA03 DESIGN AND PROTOTYPING OF A BEACH LITTER REMOVAL ROBOT
- MECHSH01 MANUALLY OPERATED FIXTURE FOR TESTING OF BATTERY CELLS
- MECHSH02 AUTOMATED FIXTURE FOR TESTING OF BATTERY CELLS: DESIGN, BUILD AND TEST
- MECHSH03 48V BATTERY MODULE: DESIGN, BUILD AND TEST
- MECHST03 HVAC COMPACT DIFFUSERS
- MECHST04 SPRINT KAYAK ERGOMETERS
- MECHST07 OARBOARD MARK 2 REDESIGN AND PROTOTYPE BUILD
- MECHSV01 DESKTOP INJECTION MOLDING MACHINE
- MECHSV02 MCAA - STUDENT COMPETITION
- MECHSV03 THE CANADIAN REMEMBRANCE TORCH
- MECHZM01 DESIGN, CONSTRUCTION AND TESTING OF A PATIENT-SPECIFIC MITRAL VALVE
- MECHZM02 DESIGN, CONSTRUCTION AND TESTING OF A PATIENT-SPECIFIC AORTIC VALVE

BTECH - Bachelor of Technology

- BTECH1 MICROGRID DESIGN
- BTECH2 IMPACT OF EV CHARGING LOADS ON ELECTRICAL DISTRIBUTION SYSTEMS
- BTECH3 MCMASER MICROGRID DESIGN
- BTECH5 DESIGN OF PROTECTION RELAY BY MICROCONTROLLER
- BTECH6 PARALLEL HVAC/HVDC TRANSMISSION SYSTEM
- BTECH7 INCORPORATION OF MCMASER EV CHARGING STATIONS

MATLS - Material Science & Engineering

- MATLSENG1 CORROSION COATINGS FOR MAGNESIUM IN AUTOMOTIVE USE
- MATLSENG2 EVALUATING THE PERFORMANCE OF BIO-BASED ADHESIVE ALTERNATIVES FOR ARDA BIOMATERIAL'S NEW GRAIN™ LEATHER COMPOSITE
- MATLSENG3 PREDICTIVE SOFTWARE FOR BATTERY HEALTH USING MACHINE LEARNING & PHYSICS-BASED MODELS
- MATLSENG4 HEAT TREATMENT OPTIMIZATION FOR ADDITIVELY MANUFACTURED INVAR36
- MATLSENG5 DEVELOP A PROTECTIVE ALUMINIDE DIFFUSION COATING TECHNOLOGY FOR HOT GAS SECTION TURBINE COMPONENTS
- MATLSENG6 DEVELOPMENT OF CATHODES FOR ZINC ELECTRODEPOSITION
- MATLSENG7 PARTIAL REPLACEMENT OF PORTLAND CEMENT WITH MINE TAILINGS AND EAF SLAG
- MATLSENG8 DEVELOPING A LASER POWDER BED FUSION PROCESS FOR AL-6061 FOR AUTOMOTIVE APPLICATIONS
- MATLSENG9 OPTIMIZATION OF LIGHT DIFFUSER FILM FOR PROJECTOR APPLICATIONS
- MATLSENG10 INVESTIGATING THE MICROSTRUCTURE-DEPENDANT CORROSION OF DP780 STEEL