

Faculty of Engineering and Architecture
American University of Beirut

1st FEA Student Conference

Final Program

June 6-7, 2002

Bechtel Engineering Building

Beirut, Lebanon

50TH ANNIVERSARY
OF THE FACULTY OF ENGINEERING AND ARCHITECTURE



1951-2001

FEASC 2002 Organizing Committee

Samer M. Abdallah
Riyad Chedid
Ibrahim N. Hajj (Chair)
Mounir Mabsout
Fuad Mrad
Mohamad Rawas
Alan Shihadeh
Maher Salameh

FEA 50th Anniversary Committee

Samer M. Abdallah
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Sami Alamuddin
George Ayoub
Ibrahim N. Hajj (Chair)
Raja Iliya
Samir Kadi
Ayman Kayssi
Ibrahim Khoury
Leila Musfy
Maher Salameh

FEA 50th Anniversary Website: <http://www.aub.edu.lb/fea/50>

FEASC 2002 Website: <http://www.aub.edu.lb/fea/feasc>

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Welcome to FEASC 2002

This academic year the Faculty of Engineering and Architecture at AUB is celebrating its 50th Anniversary. As part of this celebration, the 1st FEA Student Conference was initiated. One of the aims of the Conference is to provide a forum at which students present and display their projects, research results, and artwork. Another aim is to invite some of the former students, or alumni (we'll use the term alumni to include both male and female former students), to share their professional experiences with us. A third aim is to bring together students, alumni, faculty, family, and friends to learn about what FEA and some students and alumni have been doing, and to strengthen the bonds that connect us all.

One of the statements in the AUB mission states that AUB "strives to educate those who will be leaders in public affairs, academia, and the private sector." This has been proven true time and time again, especially in Engineering and Architecture.

Over the past 50 years, FEA has graduated more than 6000 alumni. A large number of them have distinguished themselves through their careers and through their contributions to the profession and to the society. Five of the alumni, out of the many of the alumni who distinguished themselves, have been selected this year to receive the FEA Distinguished Alumnus Award and to give plenary talks at the Conference. Other alumni who have been selected were not able to attend because of other commitments. The selection task has not been easy, especially with the large number of eligible distinguished alumni that grew during the past 50 years. But we plan to catch up by having this Conference become an annual event.

I do hope that you will join us in making the FEASC 2002 a great success and a truly memorable experience for all.

Ibrahim N. Hajj, Dean
Faculty of Engineering and Architecture
American University of Beirut
Beirut, Lebanon

The FEA Distinguished Alumnus Awards

To Nabil F. Azar in recognition of his innovative and extensive architectural designs that integrate an interpretation of regional tradition, contemporary functionalism, and future vision.



Nabil F. Azar
BE 1970

Chief Executive Officer
Builders Design Consultants
Beirut, Lebanon

Nabil F. Azar is a graduate of the American University of Beirut with a Bachelor Degree in Architecture (1970) and a holder of the Penrose Award. He then traveled to Japan where he studied at Chiba University (1971).

Nabil Azar established his firm "Builders Design Consultants" in 1973. The firm offers consultancy services in architecture, interior architecture, restoration, landscaping, street beautification, and supervision of projects in both the private and the public sectors.

B.D.C has completed over 200 projects with diverse building types and assignments: religious, educational, cultural, touristic and recreational centers, commercial centers, hospitals, housing complexes, private residences and apartment buildings. His projects are located in Lebanon, Kingdom of Saudi Arabia, the Gulf countries, Cyprus and Zanzibar.

The technical staff of B.D.C. includes qualified architects, planners, structural and site engineers operating as a team with a vision of an architecture concerned with people, context, climate and culture implementing the most recent quality requirements which conform to ISO 9001 standards.



To Milhim Ghulmiyyah in recognition of his pioneering professional achievements and outstanding leadership in the area of thermal design and construction of power plant facilities and pipeline systems.

Milhim Joseph Ghulmiyyah BE 1982

General Manager
AGAP Arabia Ltd.
Saudi Arabia

Milhim Joseph Ghulmiyyah is a graduate of the FEA Mechanical Department class of 1982 and currently is the General Manager of AGAP Arabia Ltd., which is a Mechanical Industrial construction company in the field of Oil, Gas and Petrochemical Plants in Saudi Arabia.

Upon graduation, Mr. Ghulmiyyah joined C.A.T. Co (Contracting and Trading Company) in Saudi Arabia as a site Engineer where he supervised many projects in various locations in the Kingdom and in UAE from 1982 till 1994. During that period he designed and supervised the construction of thousands of pipelines for various functions (drinking water pipelines, water injection lines, crude oil pipe lines, gas pipelines and multi-product pipelines) and designed and supervised as well the construction of pumping stations, oil plants, gas plants, water environmental plant and a gas turbine driven power plant.

In June 1994, Mr. Ghulmiyyah joined PETROFAC Int. as a Construction Manager for a gas plant project in Syria, where he later headed their Damascus office as a Resident Manager. The constructed gas plant project at Dier Al Zour in Syria had the capacity to process and compress 150 million scfd of natural gas.

In 1997, Mr. Ghulmiyyah joined the Nesma Group of Companies as the General Manager of AGAP Arabia Ltd. (The industrial construction company in the Nesma Group). He has restructured the company and rebuilt its resources from 125 employees to about 800 by now, while multiplying the company assets.

Mr. Ghulmiyyah professional contributions are demonstrated by the so many prestigious projects he has been responsible for.

To Adib Kanafani in recognition of his significant contributions to air transportation, intelligent transportation systems, and education.



Adib Kanafani
BE 1964
MS 1967
PhD 1969

Edward G. and John R. Cahill Professor of Civil Engineering
Chairman
Department of Civil and Environmental Engineering
University of California at Berkeley, USA

Adib Kanafani graduated from AUB in 1964 with a B.E. degree in Civil Engineering (with distinction). He obtained his M.S. and Ph.D. degrees from the University of California at Berkeley in 1967 and 1969. Since joining the faculty at Berkeley in 1970 he has taught and conducted research on transportation systems, transportation engineering, airport planning and design, and air transportation economics. He has served on a number of national and international advisory panels to Government and industry. He is currently Chairman of the Department of Civil and Environmental Engineering at Berkeley.

Kanafani's made contributions to air transportation including demand analysis, airport capacity analysis methods, and airline network analysis. His research on airline hubbing and on the relation between aircraft technology and airline network structure laid the ground for much of the work aimed at understanding the implications of airline deregulation in the late 1970's. He was a member of the research team that developed airport capacity analysis methods that are in widespread application in airport planning and design. In 1997 he was founding Co-Director of the National Center of Excellence in Aviation Operations Research, NEXTOR, a University/Industry partnership funded by the Federal Aviation Administration and headquartered at Berkeley. Kanafani served as Director of Berkeley's Institute of Transportation Studies from 1983 to 1998, during that period he played an important role in establishing the Intelligent Transportation research effort in the U.S. He was a founding member of Mobility 2000, the precursor organization to today's national program in ITS, and he founded Berkeley's PATH program which is one of the premier research programs in ITS.

Professor Kanafani has authored over 170 publications on transportation, including a book on Transportation Demand Analysis, and one on National Transportation Planning. He is a recipient of numerous awards including the ASCE's Walter Huber Research Prize in 1982, and Horonjeff Award in 1988, and the James Laurie Prize in 2000. He was elected to the National Academy of Engineering in 2002.



To John Makhoul in recognition of his fundamental contributions to speech analysis and human-computer interaction by voice.

John Makhoul

BE 1964

MSc 1965

PhD 1970

Chief Scientist
BBN Technologies, A Verizon Company
Cambridge, MA, USA

John Makhoul received the B.E. degree from the American University of Beirut in 1964, the M.Sc. degree from the Ohio State University in 1965, and the Ph.D. degree from the Massachusetts Institute of Technology in 1970, all in electrical engineering. At AUB, he received the Penrose Award in 1964.

Since 1970 he has been with BBN Technologies, Cambridge, MA, where he is a Chief Scientist working on various aspects of speech and language processing by computer. In addition to his duties at BBN, he is Adjunct Professor at Northeastern University, Boston University, and the University of Massachusetts.

Dr. Makhoul is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and a Fellow of the Acoustical Society of America. His IEEE Fellow citation reads: "For contributions to the theory of linear prediction and its applications to spectral estimation, speech analysis, and data compression."

He is the recipient of a number of professional awards, including the IEEE Third Millennium Medal.

He currently serves on the Board of Directors of the AUB Alumni Association of North America.

To Hussein Rifai in recognition of his leadership and innovative contributions in implementing and advancing telecommunications and information systems, and his support of education.



Hussein Rifai
BE 1981

Chairman and General Manager
LibanCell
Beirut, Lebanon

Hussein Rifai is currently holding the position of Chairman – General Manager of LibanCell.

He received his B.E. in Electrical Engineering (with Distinction) from the American University of Beirut in 1981.

He started his career in Saudi Arabia where he specialized in low currents and telecommunications systems. He later on moved to Paris as Partner in telecommunications consultancy company I.T. CAL and managed telecom and information systems projects, in France and all over Europe, for large companies, mainly financial institutions. He joined LibanCell, a cellular operator in Lebanon, at its inception late 1994. He succeeded in building the operations, in an extremely challenging environment, from scratch up to a mature and innovative organization serving more than 385,000 subscribers.

Technical Program – Schedule

Thursday, June 6, 2002

8:30 – 9:00	Opening Ceremony (Room: ELH) <ul style="list-style-type: none">▪ Welcome by Peter Heath, Provost, AUB▪ Welcome by Ibrahim N. Hajj, Dean, FEA, AUB▪ Welcome by the President of FEA Student Representative Committee
9:00 – 10:30	Plenary Session I (Room: ELH) <ul style="list-style-type: none">▪ “Can Computers Really Understand the Human Voice?” John Makhoul, Chief Scientist BBN Technologies, Cambridge, MA, USA▪ “Building Partnerships between the Private and Educational Sectors” Hussein Rifai, Chairman and General Manager LibanCell, Beirut, Lebanon
	Break
11:00 – 12:20	Technical Sessions I (Room: ELH) & II (Board Room) Lunch Break
14:00 – 14:45	Plenary Session II (Room: ELH) <ul style="list-style-type: none">▪ “Architecture: Theory and Practice” Nabil Azar, Chief Executive Officer Builders Design Consultants, Beirut, Lebanon
15:00 – 16:20	Technical Session III (Room: ELH)
16:30 – 19:00	Poster & Demonstration Session*
19:00 – 21:00	RECEPTION , East Terrace, Bechtel Bldg.

* Displays will be available all day June 6 and 7 for public viewing.

Friday, June 7, 2002

9:00 – 10:30	Plenary Session III (Room: ELH) <ul style="list-style-type: none">▪ “Serving a Connected Society – The Emerging Paradigm for Engineering and Education” Adib Kanafani, Chairman Department of Civil and Environmental Engineering University of California at Berkeley, USA▪ “Engineers in Construction and Construction Management” Milhim Ghulmiyyah, General Manager AGAP Arabia Ltd., Saudi Arabia
	Break
11:00 – 12:20	Technical Sessions IV (Room: ELH) & V (Board Room) Lunch Break
14:00 – 14:45	Plenary Session IV (Room: ELH) <ul style="list-style-type: none">▪ “Breaking the 0.1 Barrier in Optical Microlithography via Signal Processing” Thomas Kailath, Hitachi America Professor of Engineering Stanford University, USA
15:00 – 16:00	Technical Session VI (Room: ELH)
16:15 – 16:30	Closing Ceremony (Room: ELH)

Technical Session I – Computer Vision, Signal Processing

Thursday, June 6, 11:00 – 12:20

Room: ELH

1 11:00 – 11:20

IRIS Recognition

Carine Daouk, Lina El-Esber, and Fouad Kammoun

2 11:20 – 11:40

Beat the traffic

Houda Karaki, Jihad Ibrahim, and Hassane Kamal

3 11:40 – 12:00

Perspective image formation using omnidirectional vision

Adel T. Zouheiry and Mounir M. C. Doumani

4 12:00 – 12:20

Speech recognition for voice based control

Youssef Naous, Ghinwa Choueiter, and Nesrob Ohannessian

Technical Session II – Computer and Communication

Thursday, June 6, 11:00 – 12:20

Room: Board Room

1 11:00 – 11:20

Mobile.Music

Joe Abou-Rjeily, Jade Bissat, and Mario Harik

2 11:20 – 11:40

Mobile jammer

Paula Atallah, Najwa Hamzeh, and Elias Nahra

3 11:40 – 12:00

SMS shell

Rima Daoud, Jean Ghanem, and Nayla Hamadeh

4 12:00 – 12:20

MSIS: Mobile student information system

Hicham Fadel, Habib Haddad, and Hady Moussa

Technical Session III – Electrical, Computer, Communication

Thursday, June 6, 15:00 – 16:20

Room: ELH

1 15:00 – 15:20

Above and beyond the wires – W.A.M

Ayman Chalhoub, Mark Ghibril, and Wissam Haddad

2 15:20 – 15:40

GIS based computerized traveling guide

Chucuri Abi Haidar, Mossine Koulakezian, and Fadi Abou Ghantous

3 15:40 – 16:00

Common sense controller (CSC) using LabVIEW

Sima Azar and Sandra Dandach

4 16:00 – 16:20

Linearization of a D/A Converter

Michel M. Azarian, Alain M. Hani, and Roland N. Saad

Poster & Demonstration Session

Thursday, June 6, 16:30 – 19:00

Bechtel and Raymond Ghosn Engineering Buildings

The students of the Department of Electrical and Computer Engineering and the Department of Mechanical Engineering are displaying technical posters describing their Final Year Projects (FYP). The displays will be available all day June 6 and 7 for public viewing.

Refer to pages 15 and 19 for a complete list of the Final Year Projects for the academic year 2001-2002.

Technical Session IV – Mechatronics, Bioengineering

Friday, June 7, 11:00 – 12:20

Room: ELH

1 11:00 – 11:20

The design of a prosthetic glove for a child with cerebral palsy

Tarek O. El-Chidiac and Jawad T. Sabbah

2 11:20 – 11:40

Development of a computer-based measurement station

Marianne Sarkis, Michel Sarkis, and Joseph Malkoun

3 11:40 – 12:00
CNC retrofit for milling machines
Imad Doumit, Georges El-Mir, and Makram Nehme

4 12:00 – 12:20
Hoover Saucer
Selim Hobeika, Nael Itayem, and Marc Tabchy

Technical Session V – Mechanical, Electrical

Friday, June 7, 11:00 – 12:20
Room: Board Room

1 11:00 – 11:20
A comparative assessment within a multi-grid environment of the performance of segregated pressure-based algorithms for fluid flow at all speeds
Daniel Asmar

2 11:20 – 11:40
Chocooler – A mini thermoelectric cooler for chocolate bars
Fadi Hachache, Ibrahim Geha, and Abdul Karim Younes

3 11:40 – 12:00
Human electric locomotive project – HELP
Raya Abdel Baki, Antoine Abboud, and Chadi Chaker

4 12:00 – 12:20
Capacitor placement using genetic algorithm and distributed computing
Francois Layoun, Maher Salameh, and Raji Sayegh

Technical Session VI – Civil, Transportation, Education

Friday, June 7, 15:00 – 16:00
Room: ELH

1 15:00 – 15:20
Geophysics and engineering hand in hand
Nadim Baalbaki and Jouanna Doummar

2 15:20 – 15:40
Potential for Rail Freight in Lebanon
Rawad Hani

3 15:40 – 16:00
Civil engineering and novel technology: Where do they meet?
Loai Naamani

Graphic Art Exhibition of Fine Art Prints

Architecture Building Exhibition Hall

June 6–12, 2002

Official opening on June 6 at 18:00

Coordinator: Mohammed Rawas

The exhibition includes a selection of etchings and silkscreen prints (about 50 works) produced by the students of the Graphic Design and Architecture programs at FEA during the last seven years. The Etching workshop was established in 1994 to introduce this printmaking technique as a core course in the Graphic Design Program. The Silkscreen workshop was added later in 1998.

Etching and Silkscreen printing are now offered as elective courses in the GD major. The exhibition works represent a variety of individual artistic statements in their themes, styles and technical printing techniques.

Human Powered Vehicles

Coordinator: Ahmad Smaili

The Human Powered Vehicle (HPV) competition is organized to promote the spirit of competition and teamwork among students and to enhance their entrepreneurial skills while involved in a physically and intellectually stimulating experience of designing and building a vehicle that have many societal benefits such as cleaner and less noisier environment, less crowdedness on the streets, healthier exercising and recreational habits, and other economical benefits.

The HPV's designed this year by Mechanical Engineering students are displayed on the road between Bechtel and Raymond Ghosn Engineering Buildings.

The 50th – Structures Contest 2002

Coordinator: Mounir Mabsout

Formal opening and Evaluation by Jury: June 6, 2002, 16:00

Bechtel/Engineering Bldg., 4th floor, FEA Library Lobby

The Contest consists of building a model of a Structure and/or Civil Engineering system with a theme that symbolizes the FEA 50th Anniversary. There are no restrictions on the material of which the model is made. Projects should be enhanced with special effects or features (Mechanical, Electrical, Visual, Computer, ...). The models will be judged for their soundness and stability, reactivity, complexity, originality, and the level of entertainment they provide. A poster describing the project is also required. Participating teams, in groups of three to six contestants, are made of Civil Engineering undergraduate students, with associates from other fields. Prizes and certificates will be awarded for the winner teams. Eight teams are participating in the Contest:

1 **DISCORD**

Ayman Abou Said, Kristina Araman, Mohamad Faour, Faten Ibrahim, Nadim Rouhana, and Farah Taha

2 **ENLIGHTENMENT**

Pascal Abou Dagher, Nadine Badr, Raed Ghousainy, Mariane Kurban, Ziad Nassar, and Michel Waked

Sponsors: CAT-Contracting and Trading Co., DEBBAS Lighting, Engineering Alumni Chapter-AUB, GHALI Copy Center

3 **IL CONSTRUCTURA**

Ali Darwish, Karim-Philippe Eid-Sabbagh, Wissam Khalil, Cinderella Nouweihed, Chadi Sabra, and Ramzi Tafesh

4 **INNOVATE**

Maher El-Sayed, Raed Jarrah, Karim Musallem, and Saleh Sabbidin

Sponsor: EL-SAYED Office for Contracting and Consulting

5 **MAC CIVIL**

Linda Al-Atik, Marie-Helene Doumit, Mark El-Khoury, Bechara Harfouche, and Serge Rizk

6 **MACSI**

Sami Bejjani, Mario Chamoun, Anis-Patrick Jabr, Imad Moukarzel, and Camil Tahan

Sponsor: MATTA-Entreprise Alfred & Jacques Matta

7 **St. KANT**

Sako Holtian, Raffi Khoshafian, and Charbel Rizk

Sponsor: ABS-Antranik Baldjian & Sons

8 **THE CIVILIANS**

Nadim Azar, Chahe Dabanjian, Toufic Fakih, Rania Fakih, and Najib Germanos

Final Year Projects (FYP)

As part of their final year, students are required to carry out a project and to submit a technical report. This project is a substantial piece of work that requires creative activity and original thinking. The objectives of a final year project are:

- To allow students to demonstrate a wide range of the skills learned at FEA during their course of study by asking them to deliver a product that has passed through the design, analysis, testing, and evaluation stages;
- To encourage multidisciplinary research through the integration of material learned in a number of course units;
- To allow students to develop problem solving, analysis, synthesis and evaluation skills;
- To encourage teamwork;
- To improve students communication skills by asking them to produce both a professional report and a professional poster and to give an oral presentation on their work.

FYP's – Department of Electrical & Computer Engineering

Coordinator: Fuad Mrad

1 Iris recognition

Fouad Kammoun, Lina El-Esber, and Carine Daouk
Advisor: A. Al-Alaoui

2 Speech recognition using FPGA

Youssef Naous, Mesrob Ohannessian, and Ghinwa Choueiter
Advisor: A. Al-Alaoui

3 Image coding and compression

Shadi Nasser, Nicolas Nasrallah, and Sharfi Nakouzi
Advisor: H. Artail

4 A distributed system of network devices

Dunia El Hassan, Randa Zakhour, Rola El Tal, and Hania Sabbidin
Advisor: H. Artail

5 Controlling a robot arm

Elie Maalouf and Samer Bizri
Advisor: H. Artail

6 Objects dimensions determination

Line Dghaili Abdallah, Rayane Chahine, and Elie Sfeir
Advisor: H. Artail

- 7 G.I.S. based computerised travelling system**
Fadi Abi Ghantous, Mossine Koulakezian, and Churri Abi Haidar
Advisor: F. Chaaban
- 8 Design and performance testing of a renewable electric energy system**
Wissam Shaar, Tamer Zaidan, and Haitham Awar
Advisor: R. Chedid
- 9 Electric wheel chair**
Chadi Chaker, Raya Abdel Baki, and Antoine Abboud
Advisor: R. Chedid
- 10 Performance evaluation of image processing algorithms on reconfigurable computing systems**
Mohammad Mechli, Ma'en Shaka'a, and Samer Ockaily
Advisor: H. Diab
- 11 Mobile jammer**
Paula Atallah, Elias Nahra, and Najwa Hamzeh
Advisor: K. Kabalan
Sponsored by Modern Electronic Corporation (MEICO)
- 12 Turbo code simulation**
Jad Berbary and Bruni El Asmar
Advisor: K. Kabalan
- 13 Capacitor placement using generic algorithms and distributed computing**
Francois Layoun, Maher Salameh, and Raji Sayegh
Advisor: S. Karaki
- 14 Development of a computer based measurement station**
Marianne Sarkis, Joseph Malkoun, and Michel Sarkis
Advisor: S. Karaki
Sponsored by Modern Electronic Corporation (MEICO)
- 15 Beat the traffic**
Kamal Hassane, Hoda Karaki, and Jihad Ibrahim
Advisor: K Kayssi
Sponsored by LibanCell
- 16 Linearisation of a channel**
Roland Saad, Alain Hani, and Michel Azarian
Advisor: K Kayssi
Sponsored by National Instruments USA
- 17 High accuracy remote data acquisition module**
Mona El Hassan, Ghada Derbas, and Rula Antoun
Advisor: F. Mrad
Sponsored by Y.L. Engineering

- 18 Common sense controller (CSC)**
Sandra Dandach and Sima Azar
Advisor: F. Mrad
Sponsored by National Instruments USA
- 19 Design of a computer controlled robot for data acquisition using path tracing**
Fadi Wakil, Ziad El Bizri, and Jabbour Abdallah
Advisor: F. Mrad and A. Smaili
- 20 Low cost UV alert**
Nadim Abi Ali, Ahmad Sidani, and Ghayass Tohme
Advisor: F. Mrad
Sponsored by SES – Microchip
- 21 Design and simulation of multiple traffic light controllers for multiple intersections**
Johny Jabbour, Bassil Ghazzaoui, and Mohamad Shehab
Advisor: J. Saade
- 22 Bluetooth business card**
Raya Maxim, Jean Pierre Saad, and Fouad Tarazi
Advisor: A. Al-Alaoui
- 23 Design of an optimum path and general robot for navigation among moving obstacles**
Wael Mabsout, Fadi Hawwa, and Nadim Klat
Advisor: J. Saade
- 24 Digital phase meter**
Rayan Salha, Samer Farhat, and Rami Adada
Advisor: N. Sabah
- 25 Active vision**
Jihane Assaf and Fadi khoury
Advisor: S. M. Abdallah
- 26 Linear motor, design and application**
Ayman Ayoub, Nabil Al-Shurafa, and Firas Abani
Advisor: F. Chaaban
- 27 Adaptive fuzzy logic based differential pulse code modulation**
Rony El Saouda, Louay Lezeik, and Walid Nasr
Advisor: J. Saade
- 28 Digital wireless communication**
Bechara Moufarrej, Weam Abu Zaki, and Sinno Sihaila
Advisor: K. Kabalan

- 29 Advanced control for electro-magnetic suspension**
Shrayteh Ziad and Tarek Mikaty
Advisor: F. Chaaban
- 30 Computer numerical control (CNC) for a 3 axis lathe machine**
George El Mir, Imad Doumit, and Makram Nehme
Advisor: A. El Hajj
Sponsored by Phoenix Machinery
- 31 OV-CAR: Omnidirectional vision autonomous robot**
Adel Zouheiry, Mounir Doumani, Antranik Serge Saadjan, and Seboah Pamoukian
Advisors: S. M. Abdallah and A. Smaili
- 32 Mobile.com**
Hicham Fadel, Hady Moussa, and Habib Haddad
Advisor: A. Kayssi
Sponsored by LibanCell
- 33 Video conferencing over GSM/GPRS**
Rima Daoud, Jean Ghanem, and Nayla Hamadeh
Advisor: A. Kayssi
Sponsored by LibanCell
- 34 Internet connectivity application**
Alain Rassi, Gilbert Tawil, Itani Ayman, and Nayla Itani
Advisor: K. Kabalan
Sponsored by Terranet
- 35 Wireless LAN**
Haddad Wissam, Chalhoub Ayman, and Ghibril Mark
Advisor: A. El Hajj
Sponsored by Cisco
- 36 Internet radio**
Joe Abou Rjeily, Jade Bissat, and Mario Harik
Advisor: A. El Hajj
Sponsored by LibanCell
- 37 Web portal**
Joe Awwad, Camille Beyrouthy, and Ghassan Abou Samra
Advisor: R. Chedid
- 38 Computer controlled movable pins for multi-purposes**
Maher Hatab and Karim Tourbah
Advisor: N. Sabah
- 39 Parallel processing in computational molecular biophysics**
Nadim Tawileh, Imad Agha, and Leila El Khazen
Advisor: H. Diab

- 40 Adaptive solar panel**
Mohammad Badran, Marc Bitar , Fadi K. Sbaiti, and Jad Bajjani
Advisor: A. Smaili and S.M. Abdallah
- 41 Universal asynchronous bluetooth transceiver**
Jad Abou Rjeili, Zalek Abdul Hadi, and Maya Haddad
Advisor: A. El Hajj
- 42 Development of a post processing tool for the application "terms investigation 3.1"**
Ayman Jomaa, Merib Adnan, and Naji Issa
Advisor: H. Diab
Sponsored by LibanCell
- 43 Distributed shared memory**
Elias Jureidini
Advisor: S. Karaki

FYP's – Department of Mechanical Engineering

Coordinator: Samer M. Abdallah

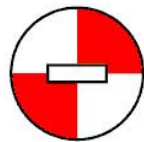
- 1 Hoover saucer**
Marc Tabchy, Nael Itayem , and Selim Hobeika
Advisor: S. M. Abdallah
- 2 BinBot – The bin loader robot**
Jad Kahlil, Samer Azzam, and Amer Jaber
Advisor: A. Smaili
- 3 The design of a prosthetic glove for a child with cerebral palsy**
Tarek El-Chidiac and Jawad Sabbah
Advisor: K. Khalaf
- 4 Load Calc - Creating a software for radiant time series methods using Visual Basic**
Nadine Mazzawi, Mohamad Chehade, and Ziad El-Khal
Advisor: F. Moukalled
- 5 OV-CAR: Omnidirectional vision autonomous robot**
Sebouk Pamoukian, Antranik Serge Saadtjian, Adel Zouheiry, and Mounir Doumani
Advisors: S. M. Abdallah and A. Smaili

- 6 Airbags**
Nabil Abdel Khalek, Marwan Abou Haidar, Nicolas El-Haddad, and Malek Kazem
Advisor: K. Khalaf
- 7 Automatic piano tuning**
Joseph Tilbian and Garo Matosian
Advisor: A. Smaili
- 8 Powder metallurgy**
Armen Arevian and Hagop Jatalian
Advisor: H. Hamade
- 9 Energy conservation report for the mechanical shops at Wing B building**
Marwan Khattab, Mohammad Shehab, and Samer Menhem
Advisor: N. Ghaddar
- 10 Adaptive solar panel**
Mohammad Badran, Marc Bitar, Fadi Sbeity, and Jad Bejjani
Advisors: A. Smaili and S. M. Abdallah
- 11 Active stereo vision**
Jihane Assaf and Fadi Khoury
Advisor: S. M. Abdallah
- 12 Engine tuning and dynamometer coupling**
Mohamad Baraa Al Halabieh and Omar El-Chami
Advisor: A. Shihadeh
- 13 Multi-newspaper vending machine**
Mireille Akilian, Naji Atallah, Salim El-Ferkh, and John Feghali
Advisor: A. Smaili
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- 23 Thermoelectric fan**
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