



**SOUTH EAST ASIAN MATHEMATICAL SOCIETY**

## **SEAMS SCHOOL PROPOSAL**

### **Coding and Graph**

Makassar - Indonesia  
September 28 – October 06, 2015

**Organized by**

Hasanuddin University and Indonesian Combinatorial Society

**2015**

## SEAMS SCHOOL PROPOSAL

### 1. The proposed title, place and dates of the SEAMS School

Title of the SEAMS School	: Coding and Graph
Place	: Makassar – Indonesia
Dates	: September 28 – October 06, 2015

### 2. Organizers (write the names, place of work, and email address, if you have more than two then add the necessary lines)

1. Name	: Dr. Nurdin, S.Si., M.Si.
Institution	: Department of Mathematics, Faculty of Mathematics and Natural Sciences, Hasanuddin University
Email and Phone	: <a href="mailto:nurdin1701@unhas.ac.id">nurdin1701@unhas.ac.id</a> ; nurdin1701@gmail.com +6281395190801
2. Name	: Dr. Kiki A Sugeng
Institution	: Department of Mathematics, Faculty of Mathematics and Natural Sciences, University of Indonesia.
Email and Phone	: <a href="mailto:kiki@sci.ui.ac.id">kiki@sci.ui.ac.id</a> +6281808601871

Organizing committee will offset up seams school coding and graphs website.

### 3. Short Description of the Scientific Content (max 100 words)

In general, a SEAMS school has objective to provide a training in mastering advanced and/or interrelated topics in mathematics as well as to introduce research-based learning for undergraduate, master students as well as master holders in Southeast Asia. A SEAMS school also encourages participants to pursue further studies in mathematics and do mathematical research. In particular, this SEAMS school focuses on studying the Coding and Graphs.

The aim of this School is to introduce the students to the fundamental theories Of Coding and Graph and improve the ability of undergraduate students in coding and graph. The relation between these fields will be also discussed in this school. Their applications in real world are also explored. This school will

only focus on the following four courses:

1. Number Theory
2. Coding Theory
3. Graph Labeling
4. Ramsey Numbers

4. The speakers of the school (names, address, emails)

1. Christian Mauduit  
Argenteuil. France  
ufoot@ufoot.org
2. Mirka Miler,  
School of Electrical Engineering and Computer Science  
The University of Newcastle  
NSW 2308, Australia  
mirka.miller@newcastle.edu.au
3. Joe Ryan  
School of Electrical Engineering and Computer Science  
Faculty of Engineering and the Built Environment  
The University of Newcastle  
Callaghan, 2308 NSW Australia
4. Edy Tri Baskoro  
The Combinatorial Mathematics Research Group  
Faculty of Mathematics and Natural Sciences  
Institut Teknologi Bandung  
Bandung - Indonesia  
ebaskoro@math.itb.ac.id
5. Kiki A. Sugeng  
Department of Mathematics  
Faculty of Mathematics and Natural Sciences  
University of Indonesia  
Jakarta - Indonesia  
kiki@ui.ac.id
6. Djoko Suprijanto  
The Combinatorial Mathematics Research Group  
Faculty of Mathematics and Natural Sciences  
Institut Teknologi Bandung  
Bandung - Indonesia
7. Hasmawati  
Department of Mathematics  
Faculty of Mathematics and Natural Sciences  
Hasanuddin University  
Makassar - Indonesia

hasma\_ba@yahoo.com

8. Loeky Haryanto  
Department of Mathematics  
Faculty of Mathematics and Natural Sciences  
Hasanuddin University  
Makassar - Indonesia  
lukih2006@gmail.com

9. Nurdin,  
Department of Mathematics  
Faculty of Mathematics and Natural Sciences  
Hasanuddin University  
Makassar - Indonesia  
nurdin1701@unhas.ac.id

All the lecturers have had important contributions in these areas of research and they have an extensive teaching experience. The percentage of male lecturers is 66,6% and female lecturers is 33,3%.

Abstracts:

1. Number Theory

This course covers integer number, divisibility, prime number, congruence, quadratic reciprocity, some functions of number theory, and algebraic number.

2. Coding Theory

This course contain about basic definition and probabilistic model, linear code, perfect code, Cycle linear code, and constructing codes from other codes.

3. Several types of Graph Labeling

This course contain about magic labeling, several types of magic labeling, irregular labeling, and several types of irregular labeling of graphs.

4. Ramsey Theory

This course covers Ramsey's theorem, generalizations of Ramsey's theorem, Ramsey numbers (bounds and asymptotic), the probabilistic method, and Schur's lemma.

5. Describe in a few lines the local institution related to this school, including the main academic program and its strength. Give also the Internet site of the local institutions.

Hasanuddin University located in Makassar, the capital city of South Sulawesi. Makassar can be reached by 2-hour direct flight from Jakarta or Bali, and by 3-hour flight from Singapore and Kuala Lumpur, Malaysia. This city is very famous for its seafood and maritime culture.

Hasanuddin University, South Sulawesi ([www.unhas.ac.id](http://www.unhas.ac.id)) as an icon of Higher Education in Eastern Indonesia (pressure to produce high quality graduates). The academic program of Hasanuddin University is implementation of international research.

Hasanuddin University has 1,744 lecturers including more than 200 professors and 559 have a doctorate degree. Hasanuddin University have 14 faculties and 63 study programs.

Department of mathematics have 4 study programs, namely the undergraduate mathematics, undergraduate statistics, undergraduate computer science, and master mathematics. Department of mathematics have 590 undergraduate students and 51 master students. Department of mathematics have 38 lectures and presents 65 courses. Coding and graph theory is a subject that is being developed in the department mathematics.

Hasanuddin university have many facilities such that education hospital, global development learning network, center of telecommunication and information technology, main library unit, student counseling center, unit of common lecture subject, representative conference halls, representative meeting rooms, lecture theatre, etc.

The SEAMS School on Coding and Graphs will hold at the Seminar Room the department of Mathematics, Hasanuddin university. The room has excellent equipment for LCD, as well as white boards. It also has free Internet access. All participants from outside Makassar will house at the dormitory Hasanuddin University and all lecturers from outside Makassar will house at the Clarion Hotel, about 10 km from the campus of Hasanuddin university. The committee will provide transportation from the hotel to the campus.

There are many program offered by Hasanuddin university related to this school. On January 4, 2011 department of mathematics conducted International workshop on combinatorial graphs and network. Invited speaker at this workshop was Prof. Mirka Miller and Prof. Joe Ryan from Newcastle University, Prof. Edy Tri Baskoro from Institut Teknologi Bandung and Dr. Kiki Ariyanti Sugeng from Indonesia University.

Hasanuddin University has received visiting researcher from abroad. On Monday 28 June 2010, Sidney Jones, Director of International Crisis Group (ICG) visited Hasanuddin University to give a talk in the International Seminar on “Terorisme dan Konflik Asia Tenggara” (Terrorism and Southeast Asia Conflicts). The seminar was attended by hundreds of participants: students, lecturers, and activists from Islamic organizations in the region. A Team from Universiti Teknologi Malaysia (UTM) visited Hasanuddin University on 27 May 2010. The team consisted of Prof. Dr. Mohd. Salleh Abu (Dean, Faculty of Education), Ahmad Nazri B. Muhammad Ludin, Ph.D (Dean, Faculty of Built Environment), Dr. Yusof B. Boon (Head, Department Postgraduate Studies), Assoc. Prof. Dr. Hadi Nur (Manager, Office of International Affairs), Prof. Dr. Ahmad Kamal Idris (Director, University Marketing Unit). The team was welcomed by Vice Rector for Academic Affairs – Prof. Dadang Ahmad, Vice Rector for Planning, Development, and Cooperation Affairs – Dr. Dwia Aries Tina, and Head of International Office – Dr. Ety Bazergan. The agenda for the visit was the proposed collaboration between the two institutions. The general areas of cooperation are: education and research, further training of staff, exchange of lecturers, exchange of students, exchange of scholarly materials and information.

Recently on Monday, 20 October 2014 Universitas Utara Malaysia representatives visited Hasanuddin University. The representatives were Dr. Mohammad Ghozali Hassan Al-Hajr, lecturer of UUM, as well as three students of UUM. They were warmly welcomed by Vice Rector for Planning, Cooperation, and Development; Professor Dr. Budu at his office on the 2nd Floor of Rectorate Building. Their purpose of visit was to discuss possible further collaboration opportunities between Universiti Utara Malaysia and Hasanuddin University. UUM expressed a particular interest in Hasanuddin University’s Student Community Service and would hope that they can be involved in the near future. On Monday, 13 October 2014, Indonesian Ambassador to the Federation of Russia and the Republic of Belarus, His Excellency Mr. Djauhari Oratmangun, and Mayor of Orel Russia, Mr. Sergey Stupin visited Hasanuddin University. The purpose of their visit was to give a public lecture on the partnership between Indonesia and Russia which has been established since February 1950. On 19 September 2014, the Director of Kagawa University International Student Center Professor Dr. Lrong Lim visited Hasanuddin University’s Marine Station in Barrang Lompo Island, Makassar. The purpose of his visit was to see the facilities of the Marine Station which will be one of the sites for Kagawa University students to do Summer Camp program at Hasanuddin University. This program is a concrete manifestation of Hasanuddin University’s mission to be a World Class University. In the program, students from around the world meet to identify problems, discuss them, and recommend practical solutions. Furthermore, the program is a model of interaction and learning process for students from different countries. It is an excellent opportunity for them to cooperate with students of various cultural

background. Hasanuddin University Summer Camp Program will provide valuable and unforgettable experience. The program is a combination of tutorials, seminars, learning experience programs, art and culture programs, and Student Community Service. We cordially invite undergraduate and postgraduate students to interact with other students from different countries and feel the experience of being part of an international community in Unhas Summer Camp.

Moreover, on Thursday, 18 September 2014, Hasanuddin University conducted a program of signing Memorandum of Understanding with 43 domestic and international partners. This event was conducted at the Auditorium of the Hasanuddin University Teaching Hospital, Makassar, attended by Board of Trustee, Dr. Syahrul Yasin Limpo, who is concurrently The Governor of South Sulawesi Province.

On November this year, Faculty of Mathematics and Natural Sciences will be conduct the First International Conference on Sciences.

6. Provide information about the expected participants. The number and the distribution of expected participants.

This school will be attended by 20 participants from Indonesia, consisting of S1 students, S2 students, and young mathematician. This school will also be attended by 10 participants from various countries in Southeast Asian, i.e. 2 from Cambodia, 2 from Vietnam, 2 from Malaysia, 2 from the Philippines, and 2 from Thailand. A half of expected participants is woman.

7. Describe the objectives and the program of the proposed school, including the courses, speakers, abstracts (8 lines each) and tentative schedules for each course.

#### **A. Objectives of the School**

- a. to introduce students to the fundamental theories in numbers, coding, graph labeling, and Ramsey theory and their relations and applications to real world problems;
- b. to provide young researchers with sufficient knowledge and background to start their research in numbers and graphs.
- c. to facilitate contacts with a large number of mathematicians working in these areas and the students coming to the school.
- d. to increasing students motivation to learn mathematics and for the development of mathematics research at Hasanuddin university

#### **B. Courses and Speakers**

1. Number Theory: Christian Mauduit, Joe Ryan
2. Coding Theory: Djoko Suprijanto, Loeky Hayanto
3. Graph Labeling: Mirka Miller, Kiki A. Sugeng, Nurdin
4. Ramsey Numbers: Edy Tri Baskoro, Hasmawati

### C. Tentative Schedule

<b>SUNDAY, August 02, 2015</b>	<b>ARRIVAL</b>
<b>MONDAY, August 03, 2015</b>	
08.00 - 08.30	<b>OPENING PROGRAM</b>
08.30 - 10.00	Number Theory 1
10.00 - 10.15	BREAK
10.15 - 11.45	Number Theory 2
11.45 - 13.00	BREAK
13.00 - 14.30	Coding Theory 1
14.30 - 14.45	BREAK
14.45 - 16.15	Coding Theory 2
<b>TUESDAY, August 04, 2015</b>	
08.30 - 10.00	Graph Labeling 1
10.00 - 10.15	BREAK
10.15 - 11.45	Graph Labeling 2
11.45 - 13.00	BREAK
13.00 - 14.30	Ramsey Number 1
14.30 - 14.45	BREAK
14.45 - 16.15	Ramsey Number 2
<b>WEDNESDAY, August 05, 2015</b>	
08.30 - 10.00	Number Theory 3
10.00 - 10.15	BREAK
10.15 - 11.45	PROBLEM SOLVING
11.45 - 13.00	BREAK
13.00 - 14.30	Coding Theory 3
14.30 - 14.45	BREAK
14.45 - 16.15	PROBLEM SOLVING
<b>TUESDAY, August 06, 2015</b>	
08.30 - 10.00	Graph Labeling 3
10.00 - 10.15	BREAK
10.15 - 11.45	PROBLEM SOLVING
11.45 - 13.00	BREAK
13.00 - 14.30	Ramsey Number 3
14.30 - 14.45	BREAK
14.45 - 16.15	PROBLEM SOLVING
<b>FRIDAY, August 07, 2015</b>	



08.30 - 10.00	Number Theory 4
10.00 - 10.15	BREAK
10.15 - 11.45	Coding Theory 4
11.45 - 13.00	BREAK
13.00 - 14.30	Graph Labeling 4
14.30 - 14.45	BREAK
14.45 - 16.15	Ramsey Number 4
<b>SATURDAY, August 08, 2015</b>	<b>EXCURSION</b>
<b>SUNDAY, August 09, 2015</b>	<b>NO ACTIVITY</b>
<b>MONDAY, August 10, 2015</b>	
08.30 - 10.00	Number Theory 5
10.00 - 10.15	BREAK
10.15 - 11.45	PROBLEM SOLVING
11.45 - 13.00	BREAK
13.00 - 14.30	Coding Theory 5
14.30 - 14.45	BREAK
14.45 - 16.15	PROBLEM SOLVING
<b>TUESDAY, August 11, 2015</b>	
08.30 - 10.00	Graph Labeling 5
10.00 - 10.15	BREAK
10.15 - 11.45	PROBLEM SOLVING
11.45 - 13.00	BREAK
13.00 - 14.30	Ramsey Number 5
14.30 - 14.45	BREAK
14.45 - 16.15	PROBLEM SOLVING
<b>WEDNESDAY, August 12, 2015</b>	<b>DEPARTURE</b>

8. Provide information about provisional budget and the expected funding.

NO	ITEM	TOTAL (EUROS)	
1	<b>TICKETS</b>		
	OVERSEAS STUDENTS	10 PERSON: 2 FROM CAMBODIA, 2 FROM VIETNAM, 2 FROM MALAYSIA, 2 FROM PHILIPPINES, AND 2 FROM THAILAND	€ 3,400
	SPEAKERS	3 PERSON	€ 1,740
	INDONESIA SPEAKERS FROM OUTSIDE MAKASSAR CITY	3 PERSONS	€ 387
2	<b>ACCOMODATION</b>		
	OVERSEAS STUDENTS	10 PERSONS - 10 DAYS	€ 1,500

	INDONESIAN STUDENTS FROM OUTSIDE MAKASSAR CITY	10 PERSONS – 10 DAYS	€ 1,500
	SPEAKERS FROM OUTSIDE MAKASSAR CITY	6 PERSONS - 10 DAYS	€ 2,100
3	<b>FOOD EXPENSES</b>		
		LUNCH + 2 SNACKS DURING SCHOOL: 7 DAYS	€ 1,505
		SCHOOL DINNER	€ 300
		LUNCH AND SNACK DURING TOUR	€ 150
4	<b>LOCAL TRANSPORT</b>		
	COASTER RENTAL FOR TOUR	1 DAY	€ 150
5	<b>SUPPLIES AND PRINTINGS</b>		
		PROGRAM, LECTURE NOTES AND KITS	€ 170
6	<b>SECRETARIAT AND LOCAL COMMITTEE EXPENSES</b>		€ 158
	<b>TOTAL</b>		<b>€ 13,060</b>

#### FUNDING DISTRIBUTION:

NO	ITEM	TOTAL (EUROS)
1	CIMPA	€ 5,000
2	DEAN OF FACULTY OF MATHEMATICS AND NATURAL SCIENCES – HASANUDDIN UNIVERSITY	€ 2,580
3	RECTOR OF HASANUDDIN UNIVERSITY	€ 5,480
	<b>TOTAL</b>	<b>€ 13,060</b>

9. Provide CVs for the organizers.

## B I O D A T A

### I. IDENTITAS DIRI

1.1	Nama Lengkap	Dr. Nurdin, S.Si., M.Si.	L
1.2	Jabatan Fungsional	Lektor Kepala	
1.3	NIP/NIK/No. identitas lainnya	19700807 200003 1 002	
1.4	Tempat dan Tanggal Lahir	Madining, 7 Agustus 1970	
1.5	Alamat Rumah	Kompleks Pepabri Blok B2 No.8 Sudiang Makassar	
1.6	Nomor Telepon/Faks	0411 551315	
1.7	Nomor HP	081395190801	
1.8	Alamat Kantor	Jurusan Matematika FMIPA UNHAS	
1.9	Nomor Telepon/Faks	0411- 585643	
1.10	Alamat e-mail	<a href="mailto:nurdin1701@unhas.ac.id">nurdin1701@unhas.ac.id</a>	
1.11	Lulusan yg telah dihasilkan	S-1 = orang	
1.12	Mata Kuliah yg diampu	1 Kalkulus	
		2 Logika Matematika	
		3 Matematika Diskrit	
		4 Teori Graf	
		5 Teori Bilangan	
		6. Aljabar Linier	
		7 Topik Khusus Kombinatorika	

### II. RIWAYAT PENDIDIKAN

	S-1	S-2	S-3
<b>Nama PT</b>	UNHAS	ITB	ITB
<b>Bidang Ilmu</b>	Matematika	Matematika	Matematika
<b>Tahun Masuk-Lulus</b>	1990 - 1996	1998 – 2001	2005 - 2010
<b>Judul Tugas Akhir</b>	Aksi Grup dan Aplikasinya pada Pembuktian Teorema Cayley	Bilangan Ramsey untuk Kombinasi Graf Lingkaran terhadap Graf Roda	Nilai Total Ketakteraturan dari Suatu Graf
<b>Nama Pembimbing/Promotor</b>	Prof.Dra.Nurul Muchlisah, MS	Prof. Dr. Edy Tri Baskoro	Prof. Dr. Edy Tri Baskoro

### III. MAHASISWA BIMBINGAN YANG SELESAI

NO	NAMA/NIM	PROGRAM	TAHUN	JUDUL
1	Edy Saputra	Sarjana	2013	
2	Mayer	Sarjana	2013	Barisan Sarang Lebah
3	Darmo/P3500210003	Magister	2012	Dimensi metric graf hasil kali silang graf lintasan $P_m \times P_2 \times P_k$
4	Dian Firmayasari S/H11108011	Sarjana	2012	Penentuan dimensi metrik graf helm
5	Nurfuaidah Suardi/H11108260	Sarjana	2012	Dimensi metric untuk graf halin bintang ganda
6	Ali Sari/H11106038	Sarjana	2012	Dimensi metrik graf grid
7	Ary Herlina Kurniati HM/H11108007	Sarjana	2012	Dimensi metric graf gir
8	Erick Ogistira	Sarjana	2011	Nilai ketidakteraturan dan nilai total ketidakteraturan titik graf caterpillar
9	Irwan	Sarjana	2011	
10	La Ode Sariadin/H11107037	Sarjana	2011	Penentuan nilai total ketidakteraturan sisi amalgamasi dua graf bintang yang isomorfik
11	Evi Sintawati/H11107033	Sarjana	2011	Penentuan nilai total ketidakteraturan sisi amalgamasi dua graf lingkaran yang isomorfik
12	Jen Hidayat/H11106017	Sarjana	2011	Penentuan nilai total ketakteraturan titik amalgamasi dua graf lingkaran yang isomorfik

### IV. PENGALAMAN PENELITIAN

No.	Tahun	Judul Penelitian	Pendanaan	
			Sumber	Jml (Juta Rp)
1.	2013	Penentuan Dimensi Metrik Ruang Tiga Dimensi untuk mendeteksi obyek-obyek tertentu	BOPTN 2013 Unhas	72
3.	2012	Pengembangan Pelabelan Graf pada Irregular Communication Network	Hibah Kompetensi	100
4.	2012	Aplikasi Teori Graf pada Penentuan	Dipa Unhas (Hibah)	70

		Posisi Robot di Ruang 3 Dimensi untuk Mendeteksi Obyek-Obyek Tertentu	Penelitian Berbasis Prodi)	
5.	2011	Konstruksi model jaringan caterpillar untuk mendisain skema pembagi rahasia keamanan data informasi	Internal Jurusan	12.5
6.	2010	Pengembangan model pelabelan graf pada disain skema pembagi rahasia	Hibah Bersaing	32
7.	2009	On total vertex-irregularity strength of trees	Hibah Kompetitif Publikasi Internasional	30
8.	2009	Pengembangan model pelabelan graf dalam pendistribusian saluran frekuensi online pada jaringan seluler	Hibah Bersaing	39
9.	2009	Nilai Total Ketakteraturan dari suatu Graf	Hibah Doktor	25
10.	2008	Pengembangan Metode Penentuan Nilai Ketakteraturan Total Sisi Hasil Kali Silang Graf Lintasan dengan Graf Lainnya	PDM	10
11.	2006	Aplikasi pelabelan graf dalam mendisain skema pembagi rahasia (secret sharing schema) pada sistem informasi	PDM	10
12.	2005	Algoritma pencarian subgraf $K_5$ dalam sebuah graf dan analisis kompleksitasnya	DPP Fakultas	3
13.	2004	Optimalisasi pemanfaatan sumberdaya ekonomi transmigran lokal di Sulawesi Selatan	SP4 Jurusan Matematika	20
14.	2004	Aplikasi Digraf dalam Penentuan Kestabilan Suatu Ekosistem	PDM	10
15.	2003	Membentuk Hasil Kali Tensor Aljabar- $C^*$	DPP Fakultas	3

#### IV. PENGALAMAN PENGABDIAN KEPADA MASYARAKAT

No.	Tahun	Judul Pengabdian Kepada Masyarakat	Pendanaan	
			Sumber	Jml (Juta Rp)
1.	2013	Pelatihan Olimpiade Matematika untuk siswa SMP Se-Kecamatan Malili Kab. Luwu Timur	Dipa Unhas 2013	27
2.	2012	Pelatihan Statistika bagi Guru SMA, SMK, dan MA Kabupaten Sinjai	Dipa Unhas	30

#### IV. PENGALAMAN PENULISAN ARTIKEL ILMIAH DALAM JURNAL

1. Nurdin, M. Bahri, M. Zakir, A.G. Mahie, (**accepted**): On the metrics dimension of helm graph, *International Journal of Mathematics and Mathematical Sciences*.
2. Wenny Fitria, A.N.M. Salman, **Nurdin**, (**accepted**): The Total Edge Irregularity Strengths of Hexagonal Honeycomb Mesh Graphs, *Utilitas Mathematica*.
3. A. Ahmad, **Nurdin**, E.T. Baskoro, (**accepted**): On Total Irregularity Strength of Generalized Halin Graph, *Ars Combinatoria*.
4. **Nurdin**, (2013): The Total Edge and Vertex Irregularity Strength of a  $nC_3$ -Snake, *Far East Journal of Mathematical Sciences* **78(2)**, 205 – 210.
5. Muhammad Kamran Siddiqui, **Nurdin**, Edy Tri Baskoro, (2013): Total Edge Irregularity Strength of the Disjoint Union of Helm Graphs, *Journal of Mathematical and Fundamental Sciences* **45(2)**, 163 – 171.
6. **Nurdin**, M. Zakir, Firman, (2013): Vertex-irregular labeling and vertex-irregular total labeling on caterpillar graph, *International Journal in Applied Mathematics and Statistics* **40(10)**, 99-105
7. Mawardi Bahri, **Nurdin**, Muh. Zakir, Galsan Mahie, Darmo, (2013): Dimensi Metrik Graf Hasil Kali Silang Graf Lintasan  $P_m \times P_2 \times P_2$ ,  $m \geq 2$ , *Jurnal Matematika dan Natural Sains Terevitalisasi* **1(1)**, 15 – 18.
8. **Nurdin**, (April 2012): On the Total Vertex Irregularity Strengths of Quad Trees and Banana Trees, *Journal Indonesian Mathematics Society* **18(1)**, 31-36.
9. M. Zakir, **Nurdin**, (2011): The Total Vertex Irregularity Strength of an Amalgamation of Stars, *Advance and Applied in Discrete Mathematics* **8(1)** 45-48.
10. **Nurdin**, E.T. Baskoro, A.N.M. Salman, N.N. Gaos, (2010): On the Total Vertex Irregularity Strengths of Trees, *Discrete Mathematics* **310(21)**, 3043-3048.
11. **Nurdin**, E.T. Baskoro, A.N.M. Salman, N.N. Gaos, (2010): On Total Vertex-Irregular Labellings for Several Types of Trees, *Utilitas Mathematica* **83**, 277-290.
12. **Nurdin**, Firman, (January 2010): The study of the graph labeling on distributed online frequency assignment in cellular irregular network, *Advance and Applied Discrete Mathematics* **5(1)**, 61-67.
13. **Nurdin**, A.N.M. Salman, E.T. Baskoro, N.N. Gaos, (2009): On the Total Vertex-Irregular Strength of the  $t$  Copies of a Path, *Journal of Combinatorial Mathematics and Combinatorial Computing* **71**, 227-233.

14. **Nurdin**, A.N.M. Salman, E.T. Baskoro, (2008): The Total Edge-Irregular Strengths of the Corona Product of Paths with some Graphs, *Journal of Combinatorial Mathematics and Combinatorial Computing* **65**, 163-175.
15. **Nurdin**, E.T. Baskoro, A.N.M. Salman, (2006): The Total Edge Irregular Strengths of Union Graphs of  $K_{2,n}$ , *Jurnal Matematika dan Sains* **11(3)**, 106-110.

## V. PUBLIKASI PADA PROSIDING

1. **Nurdin**, (2013): The Vertex and Edge Irregular Total Labelign of an Amalgamation of Two Isomorphic Cycles, *Proceeding of International Conference on Applied Mathematics and Engineering Mathematics* No. **78**, 1867 – 1868
2. **Nurdin**, E.T. Bakoro, A.N.M. Salman, N.N. Gaos, (2009): On Total Edge Irregularity Strength of the Corona Product of Paths with Star, *Proceedings of International Conference and Workshops on Basic and Applied Sciences and Regional Annual Fundamental Science Seminar* **III**, 114-116.
3. A.N.M. Salman, T. Agustina, **Nurdin**, (2008): On Total Edge-Irregular Strength of Grids, *Proceedings of International Conference on Mathematics and Natural Sciences*, 1405-1408.
4. Nurdin, E.T. Baskoro, A.N.M. Salman, N.N. Gaos, (2008): The Total Vertex-Irregular Labellings of tPn a Forest Constructed from a Disjoint Union of Paths, *Proceedings of International Conference on Mathematics and Statistics*, 311 – 315.
5. Nurdin, E.T. Baskoro, A.N.M. Salman, (2006): The Edge Total Irregular Strengths of the Corona Product of Paths, *Proceedings of the First International Conference on Mathematics and Statistics*, 33-39.
6. Nurdin, A.N.M. Salman, E.T. Baskoro, E.T., (2006): The Total Edge-Irregular Strengths of the Corona Product of Cycles with the Complement of Complete Graphs, *Proceedings of International Conference on Mathematics and Natural Sciences*, 781-784.
7. Nurdin, E.T. Baskoro, A.N.M. Salman, N.N. Gaos, (2008): The Total Vertex-Irregular Labellings of the Olive and Its Copies, *Prosiding Konferensi Nasional Matematika*, XIV, 245-252.
8. N.N. Gaos, Nurdin, E.T. Baskoro, A.N.M. Salman, (2008): The Total Vertex-Irregular Labellings of the Complete Binary and 3-ary Trees, *Prosiding Konferensi Nasional Matematika*, XIV, 239-244.
9. Nurdin, E.T. Baskoro, A.N.M. Salman, (2006): The Total Edge-Irregular Strengths of the Corona Product of Paths with Wheels, *Prosiding Konferensi Nasional Matematika*, XIII, 149-156.



10. Nurdin, E.T. Baskoro, A.N.M. Salman, (2005): Nilai Ketakteraturan Total Sisi dari Graf Lintang, Proceeding Pertemuan Ilmiah Nasional & Expo IPTEK MIPA, S4G-06.

**Daftar seminar dan konferensi yang diikuti:**

1. International Conference on Applied Mathematics and Engineering Mathematics, 2013, World Academy of Science, Engineering and Technology in Istanbul Turkey
2. The 5th International Workshop on Optimal Network Topologies (IWONT) , 27-28 Juli 2012, ITB Bandung Indonesia.
3. The 5<sup>th</sup> International Conference on Research and Education in Mathematics (ICREM5) 22 - 24 Oct 2011, ITB Bandung Indonesia.
4. International Congress of Mathematician (ICM), 19 – 27 Agustus 2010, International Mathematical Union (IMU), Hyderabad India.
5. International Conference in Mathematics and Applications, Desember 2009, Mahidol University, Bangkok Thailand.
6. The second International Conference and Workshop on Basic and Applied Sciences and Regional Annual Fundamental Sciences Seminar, 2 – 4Juni 2009, Johor Malaysia.
7. IndoMS International Conference on Mathematics and Its Applications, 12 -13 Oktober 2009, UGM, Yogyakarta Indonesia.
8. The second Internationa Conference on Mathematics and Natural Sciencenes, 28 – 30 Oktober 2008 ITB Bandung Indonesia.
9. The 3td International Conference on Mathematics and Statistics, 5 – 6 Agustus 2008 Bogor Indonesia.
10. Konferensi Nasional Matematika XIV, 24 – 27 Juli 2008 Palembang Indonesia

**Daftar kegiatan ilmiah diikuti:**

1. Organizing Committee of Cimpa-Unesco-Indonesia School on Extremal Problems and Hamiltonicity in Graphs, 2 - 13 Februari 2009 di Indonesia.
2. Mengikuti Cimpa-Unesco-Indonesia School on Extremal Problems and Hamiltonicity in Graphs, 2 - 13 Februari 2009 di Indonesia.
3. Mengikuti Unesco-Cimpa School on Discrete and Computational Geometry, 23-30 Maret 2008 di Pakistan.
4. Mengikuti Fellowship Doctoral Program di Abdus Salam School of Mathematical Sciences, Desember 2007 - Januari 2008 di Pakistan.
5. Organzing Committee of International Conference on Computer Sciences (ICCS-07), December 2008 di Indonesia.

## V. PENGALAMAN PENULISAN BUKU

No.	Tahun	Judul Buku	Jumlah Halaman	Penerbit
1.	2010	Modul Matematika 1	99	

## VI. TANDA KEHORMATAN YANG TELAH DIKUTI

No	Nama Bintang/Satya Lancana	Surat Keputusan		Nama Negara Instansi Yang Memberikan
		Nomor	Tanggal/Tahun	
1.	Satyalancana Karya Satya	56/TK/Tahun 2013	6 Agustus 2013	Presiden RI

Semua data yang saya isikan dan tercantum dalam biodata ini adalah benar dan dapat dipertanggungjawabkan secara hukum. Apabila di kemudian hari ternyata dijumpai ketidaksesuaian dengan kenyataan, saya sanggup menerima risikonya.

Demikian biodata ini saya buat dengan sebenarnya untuk dapat dipergunakan sebagaimana mestinya.

Makassar, 11 Desember 2013

ttd

( **Dr. Nurdin, S.Si., M.Si.** )

**Dr. Kiki Ariyanti Sugeng**

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**EMPLOYMENT**

- Lecturer in Department of Mathematics, FMIPA, University of Indonesia, 1987-now.
- Lecturer in Universitas Trisakti, 1987-1990.
- Lecturer in D3 ActuarY, Finance Department of Finance Ministry, 1997-2000.
- Secretary of Department of Mathematics, FMIPA, University of Indonesia, 1994-1997.
- Executive Director of QUE Project (World Bank) Department of Matematics FMIPA University of Indonesia, 1998-2001.
- Team member of reviewer of TPSDP-DIKTI program, 2001.
- Research Assistant, University of Newcastle, Australia, 2003.
- Tutor, University of Newcastle, Australia, 2003-2004.
- Member of FMIPA-UI Academic Senate, 2000-2001 and 2007-2011.
- Member of Department Mathematics FMIPA-UI Academic Senate, 1998-2001 and 2006-now.
- Member of University of Indonesia Quality Assurance Board, 2007-2009.

**EDUCATION**

UNIVERSITY	DEGREE	YEAR	TOPIC
Universitas Indonesia-Jakarta, Indonesia	BSc	1982	Mathematics
Universitas Indonesia-Jakarta, Indonesia	Dra	1984	Mathematics
Institut Teknologi Bandung-Bandung, Indonesia	MSi	1987	Mathematics
University of Ballarat, Victoria, Australia	Ph.D	2006	Mathematics

## **AWARD AND SCHOLARSHIP**

- PhD Scholarship from QUE Project Department of Mathematics, University of Indonesia, 2001-2003
- Special scholarship for Overseas Student from University of Ballarat, Australia, 2004-2005
- University of Ballarat Publication Award, 2005
- 2<sup>nd</sup> Best Lecturer of University of Indonesia, 2007
- Endeavour Research Award, 2007

## **RESEARCH INTEREST**

- Graph Theory
- Secret Sharing Scheme
- Bioinformatics based on Graph

## **RESEARCH GRANT**

- FMIPA-UI Research Grant, 2006
- Indonesian Higher Education Competence Research Grant-multi years, 2008-2010.
- Postgraduate Research Grant – University of Indonesia, 2011
- Indonesian Higher Education Competence Research Grant-multi years, 2012-2014

## **TEACHING SUBJECT**

- Undergraduate
  - Algebra
  - Analysis
  - Measure Theory
  - Cryptography
  - Special topics : Graph Labeling
- Postgraduate-Master
  - Structure Algebra
  - Algebraic Graph Theory
  - Special Topic : Graph and its Application

## PUBLICATIONS

### Journals

No	Title	Publication	Year
1	Super edge antimagic total labeling for caterpillars (K.A. Sugeng, M. Miller and M. Baca)	Lecture Notes in Computer Science, Vo. 3330, pp 169-180	2005
2	Conjectures and open problems in face antimagic evaluations of graphs ( M. Baca, E.T. Baskoro, Y.M. Cholily, S. Jendrol, Y. Lin, M. Miller, J. Ryan, R. Simanjuntak, Slamin and K.A. Sugeng)	Majalah Ilmiah Himpunan Matematika Indonesia (MIHMI), 11 (2), pp. 175-192	2005
3	Relationship between adjacency matrices and super (a,d) edge antimagic total labeling of graphs (K.A. Sugeng and M. Miller)	Journal of Combinatorial Mathematics and Combinatorial Computing, 55 (2005), 71-82	2005
4	Super (a,d) vertex-antimagic total labeling (K.A. Sugeng, M. Miller, Y. Lin and M. Baca)	Journal of Combinatorial Mathematics and Combinatorial Computing, 55 (2005)	2005
5	Exclusive Sum Labeling (M. Tuga, M. Miller and K.A. Sugeng)	Journal of Combinatorial Mathematics and Combinatorial Computing, 55 (2005), 137-148	2005
6.	Survey of edge antimagic labelings of graphs (M. Baca,E.T. Baskoro, M. Miller, J. Ryan, R. Simanjuntak and K.A. Sugeng.)	Journal of Indonesian Math. Society (MIHMI), Vol. 12, No. 1 (2006), 113-130	2006
7	Sum graph based access structure in a secret sharing scheme (S. Slamet and K. Sugeng)	Journal of Prime Research in Mathematics, 2(2006), 113-119	2006
8	Face antimagic labelings of prisms (K.A. Sugeng, M. Miller. Y. Lin and M. Baca)	Utilitas Mathematica (2006)	2006
9	Super edge antimagic total labelings (K.A. Sugeng, M. Miller and M. Baca)	Utilitas Mathematica, 71 (2006), 131-141	2006

10	Super edge antimagic labelings of generalised Petersen graphs $P(n, (n-1)/2)$ (M. Baca, E.T. Baskoro, R. Simanjuntak and K.A. Sugeng)	Utilitas Mathematica, 70 (2006), 119-127	2006
11	Face antimagic labelings of plane graphs $P_a^b$ (with Yuqing Lin)	Ars Combinatoria, Vol. 80 (2006)	2006
12	Consecutive magic graphs (C.Balbuena, Y. Lin, M. Miller and K.A. Sugeng)	Discrete Mathematics, 306 (2006), 1817-1829	2006
13	On the degrees of a super vertex magic graph (C. Balbuena, K.C. Das, Y. Lin, M. Miller, J. Ryan, Slamin, K.A. Sugeng)	Discrete Mathematics, 306 (2006), 539-551	2006
14	Pelabelan Jumlah untuk gabungan dua graf (R. Rahmi, H. Burhan dan K.A. Sugeng)	JMAP, 5 No 2 (2006), 57-61	2006
15	On several classes of monographs (K.A. Sugeng and J. Ryan)	Australasian Journal of Combinatorics, 37 (2007), 277-284	2007
16	A sum labeling for generalised friendship graph (H. Fernau, J. Ryan and K.A. Sugeng)	Discrete Mathematics, 308 (2008)	2008
17	More properties of edge consecutive magic graphs (K.A. Sugeng and M. Miller)	Journal of Discrete Algorithm, 6 (2008)	2008
18	Optimum sum labeling of finite union of graphs ( H. Burhan, R. Rusin and K.A. Sugeng)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 65 (2008),	2008
19	Edge antimagic total labeling on paths and unicycles ( D. R. Silaban and K.A. Sugeng)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 65 (2008), 127-132	2008
20	New Constructions of A-magic graphs using labeling matrices (K.A. Sugeng and Mirka Miller)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 65 (2008), 147-151	2008

21	On Distance Magic Labeling of Graphs (K.A. Sugeng, D. Froncek, M. Miller, J. Ryan and J. Walker)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 71 (2009), 39-48	2009
22	Vertex Antimagic Total Labeling of Union of Suns (A. Parestu, D.R. Silaban and K.A. Sugeng)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 71 (2009), 179-188	2009
23	Vertex Magic Total Labelings of Union Generalized Petersen Graphs and Union of Special Circulant Graphs (D. R. Silaban, A. Parestu, B.N. Herawati, K.A. Sugeng and Slamini)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 71 (2009), 201-208	2009
24	Super (a,d) vertex antimagic total labeling on disjoint union of regular graphs (K.A. Sugeng and D.R. Silaban)	Journal of Combinatorial Mathematics and Combinatorial Computing (JCMCC) 71 (2009), 217-226	2009
22	On magicness and antimagicness of the union of 4-regular circulant graphs (Kiki A. Sugeng, Bong N. Herawati, M. Miller, M. Baca)	AUSTRALASIAN JOURNAL OF COMBINATORICS Volume 50 (2011), 141-153	2011
23	Clique vertex magic cover of a graph (Kiki A. Sugeng and Joe Ryan)	Math. Comput. Sci. (2011) 5:113-118	2011
24	Open Problem on Graph Labelings (S. Arumugam, Martin Bařca, Dalibor Froncek, Joe Ryan and Kiki A. Sugeng)	AKCE Int. J. Graphs Comb., 10, No. 2 (2013), pp.147-155	2013
25	Construction of new larger (a, d)-edge antimagic vertex graphs by using adjacency matrices (S. Rahmawati, K.A. Sugeng, D.R. Silaban)	AUSTRALASIAN JOURNAL OF COMBINATORICS, Volume 56 (2013), Pp 257-272	2013
26	DNA graph characterization for line digraph of dicycle	AKCE Int. J. Graphs Comb., 10, No. 2 (2013),	2013

	with one chord (Inne, Kiki A. Sugeng and Denny R. Silaban )	pp. 157-167	
27	On the total edge irregularity strength of generalized helm (Diari Indriati, Widodo, Indah Emilia Wijayanti and Kiki Ariyanti Sugeng)	AKCE Int. J. Graphs Comb., 10, No. 2 (2013), pp. 147-155	2013
28	The Odd Harmonious Labeling of Dumbbell and Generalized Prism Graphs (Gusti A. Saputri, Kiki A. Sugeng and Dalibor Froncek)	AKCE Int. J. Graphs Comb., 10, No. 2 (2013), pp. 221-228	2013

### Proceedings

No	Title	Publication	Year
1	Open problems in secret sharing (K.A. Sugeng and M. Miller)	Proceeding of the 13 <sup>th</sup> AWOCA 2002, Fraser Island, Australia, pp. 53-60	2002
2	Open problems in exclusive sum graph labeling (M. Miller, J. Ryan, Slamin, K.A. Sugeng and M. Tuga)	Proceeding of the 14 <sup>th</sup> of AWOCA 2003, Seoul, Korea, pp. 125-130	2003
3	Further results on d-antimagic labelings of antiprisms ( Y. Lin, A. Ahmad, M. Miller, K.A. Sugeng and M. Baca)	Proceeding of 15 <sup>th</sup> AWOCA 2004, Balina, Australia, pp. 103-108	2004
4	Super vertex magic total labeling ( J.A.Mac Dougall, M. Miller and K.A. Sugeng)	Proceeding of 15 <sup>th</sup> AWOCA 2004, Balina, Australia, pp. 222-229	2004
5	An application of sum labeling for the access structure in a secret sharing scheme (S. Slamet, K.A. Sugeng and M. Miller)	Proceeding INA-CISC 2005, Indonesia Cryptology and Information Security, pp. 15-21	2005
6	Sum graph based access structure in a secret sharing scheme (S. Slamet, K.A. Sugeng and M. Miller)	Proceeding of 2 <sup>nd</sup> World Conference on 21 <sup>st</sup> Century Mathematics 2005, Pakistan	2005
7	Construction of super edge magic total graphs (K.A. Sugeng and W. Xie)	Proceeding of the 16 <sup>th</sup> AWOCA 2005, Ballarat, Australia, pp 303-310	2005



8	Properties of edge consecutive magic graphs (K.A. Sugeng and M. Miller)	Proceeding of the 16 <sup>th</sup> AWOCA 2005, Ballarat, Australia, pp 311-32-	2005
9	Konstruksi Graf A-ajaib untuk graf teratur (K.A. Sugeng dan D. R. Silaban)	Prosiding Konperensi Nasional Matematika XII , Semarang, Indonesia, Juli 2006.	2006
10	A Note on the integral sum graph of a centralized graph (S. Slamet and K.A. Sugeng)	Prosiding Konperensi Nasional Matematika XII, Semarang, Indonesia, Juli 2006.	2006
11	On edge magic total labeling of Caterpillar-Like Tree (K.A. Sugeng and D.R. Silaban)	Proceedings of SEAM-GMU, UGM, 2007, 203-208	2007
12	Pelabelan Simpul Ajaib Total dari Gabungan Graf Matahari (A. Parestu, D. Silaban and K.A. Sugeng)	Prosiding Seminar Nasional Matematika, Vol 3 (2008), Bandung, Indonesia, 407-414	2008
13	Pelabelan Berurutan Sisi Ajaib dari suatu Graf (K.A. Sugeng)	Prosiding Konferensi Nasional Matematika XIV, Palembang, Indonesia, Juli 2008, 233-238	2008
14	Pelabelan Harmonious pada Graf Gabungan Graf Harmonious (R.A. Gilang, D.R. Silaban and K.A. Sugeng)	Prosiding Seminar Nasional Matematika, Vol 4 (2009), Bandung, Indonesia, MS 8-13	2009
15	Pelabelan Harmonious pada Graf Korona (A.J. Asih, D.R. Silaban and K.A. Sugeng)	Prosiding Seminar Nasional Matematika, Vol 4 (2009), Bandung, Indonesia, MS 72-76	2009
16	An Edge Consecutive Edge Magic Total Labeling on some Classes of Tree (K.A. Sugeng and D.R. Silaban)	Proceedings of the 5th International Conference on Mathematics, Statistics and Their Applications, Bukit Tinggi, Indonesia (2009), 966-969	2009
17	On (a,d)-Vertex Antimagic Labeling of Circulant Graphs (B.N. Herawati and K.A. Sugeng)	Proceedings of the 5th International Conference on Mathematics, Statistics and Their Applications, Bukit Tinggi, Indonesia	2009

		(2009), 970-973	
18	Penggunaan Fungsi Pembangkit untuk Mencari Banyaknya Graf Pola Dari Suatu Graf Pola Utama ... 55 (Anggha S. Nugraha, Denny R. Silaban, Kiki A. Sugeng)	Prosiding Seminar Nasional Matematika 2010 – Departemen Matematika FMIPA UI, 55-60	2010
19	Pelabelan Harmonious pada Graf Firecracker, Graf Hairy Cycle, dan Graf Korona (Anggie J. Asih, Denny R. Silaban, Kiki A. Sugeng)	Prosiding Seminar Nasional Matematika 2010 – Departemen Matematika FMIPA UI, 61-66	2010
20	Karakterisasi Graf DNA untuk Dicycle, Dipath, Rooted Tree dan Self Adjoint Digraph Menggunakan Pelabelan- $(\alpha, k)$ (Inne, Denny R. Silaban, Kiki A. Sugeng)	Prosiding Seminar Nasional Matematika 2010 – Departemen Matematika FMIPA UI, 87-90	2010
21	Pelabelan Total $(a,d)$ -Busur Anti Ajaib pada Gabungan Graf Lingkaran (Widya M. Niagara, Denny R. Silaban, Kiki A. Sugeng)	Prosiding Seminar Nasional Matematika 2010 – Departemen Matematika FMIPA UI, 113-118	2010
22	Pelabelan graceful, skolem graceful dan pelabelan rho pada $(Sn,3)$ ( A. Zulfi2, M. Ahmad, N. Huda, Supriadi, K. A. Sugeng)	Prosiding Seminar Nasional Penelitian, Pendidikan dan Penerapan MIPA, Fakultas MIPA, Universitas Negeri Yogyakarta, 14 Mei 2011, 131-138	2011

### PROFFESIONAL MEMBERSHIP

- Indonesian Mathematical Society, 2000-now
- Indonesian Combinatorial Society, 2007-now
- American Mathematical Society, 1998-now
- Institute of Combinatorics and Application. 2003-now
- Australian Combinatorics Mathematical Society, 2009-now

## OTHER EXPERIENCES

- Member of Organizing Committee of Australian Combinatorics conference: 27<sup>th</sup> ACCMCC 2002, The University of Newcastle, Australia.
- Member of Organizing committee of Australasian Workshop on Combinatorics and Algorithm: AWOCA 2005, University of Ballarat, Australia
- Member of Editor Proceedings of Australasian Workshop on Combinatorics and Algorithm: AWOCA 2005, University of Ballarat, Australia.
- Member of Academic Senate Faculty of Mathematics and Natueral Sciences, 2006-2010
- Member of Academic Senate of Department of Mathematics-UI, 2007-now
- Referee for several mathematics journals, such as Discrete Mathematics, Australasian Journal of Combinatorics, AKCE International Journal of Graphs and Combinatorics, Utilitas of Mathematica, Journal of Combinatorial Mathematics and Combinatorial Computing, Applied Mathematics Letter, 2006-now
- Vice President of Indonesian Combinatorial Society, 2007-now.
- Member of Quality assurance Board University of Indonesia, 2008-2010
- Invited Speaker on International Workshop on Graph Labeling 2008, Harbin, China.
- Referee for IndoMS International Conference on Mathematics and Application, Jogjakarta, October 2009.
- Research Core Lecturer of University of Indonesia, 2009-now
- Invited Speaker of First Multidiciplinary Research, Flores, 2010.
- Invited Speaker on Graph Master Workshop, ITB Bandung 2010.
- Invited Speaker on Mathematics Seminar, Unhas, Makasar, 2010.
- Member of Editorial Board of Journal of Indonesian Mathematical Society, 2010-now.
- Member of Scientific Committee of International Workshop on Graph Labeling, 20120-now
- Visiting Lecturer for ALGANT Master Program, Europe, June-July 2011.
- Co-Chair of Organizing Committee of International Workshop on Graph Labeling, July 2012, Indonesia
- Chair of IndoMS International Conference on Mathematics and Application, November 2013
- Vice President of IndoMS (Indonesian Mathematical Society), 2012-2014 and 2014-2016
- President of InacomBS, 2013-2015.

Depok, 28 October 2014



(Dr. Kiki Ariyanti Sugeng)