



International Academy for Systems and
Cybernetic Sciences

Joint Project on
The Endorsed Basic Competency and Standard Curriculum of System Science
Call for Participation

*(to be distributed to ALL individual members of ALL IFSR member organizations and
to subscribers of the IFSR News)*

Primary Facilitator: Dr. Jason Jixuan Hu, USA

(version 2017-07-19)

The Need

There has been a long-standing need to establish basic, introductory principles in systems and cybernetics. In part, this is needed to orient young minds to become future system scientists, systemic thinkers, system practitioners and systemic actioners. In order to provide effective and efficient education and training to those who are new to the field, it is our responsibility to provide a systemic set of definitions, competencies, key concepts, key principles, well established laws, key historic events, and information about currently active groups and communities with their enlightening questions.

The Goal

To collectively develop a set of curricula representing widely agreed basic competencies of system science, that cover foundational and fundamental contents **in the format of comprehensive courseware, which includes textbooks, teacher's handbooks, classroom scripts, video materials, and online resource links**, that could be recommended to K-12 school teachers and university professors around the world.

Systems Science 101 – for one semester's delivery to high-school students;

Systems Science 201 – for one semester's delivery to undergraduate students (3 credits);

Systems Science 301 – for one semester's study by graduate students at Master level (3 credits);

The Boundary

No system is without boundary, and so is the scope of this project. Our ultimate keywords are "system" and "science", so this is not about "diversity", "political correctness", "artistic expressions", "spirituality," "mind-body synergy," "wholeness with universe," "new age meditation", "string theory", or a "theory of

everything.” We are developing an educational curriculum about one type of science, the system science, for entry level students and researchers.

This is not currently about System Engineering, for which INCOSE has established an initial foundation for practitioners and experts in SE field. Our curriculum is specifically for high-school students, undergraduate and graduate students in all fields, and for the general, literate, educated public.

The Process and the Schedule

Phase I: Team forming:

1. Call for Participation (in three categories) will be finalized and sent out to all IFSR member organisations members, who will be asked to send it to their individual members. 2017-08-14
2. Sign-up as **co-authors, advisors, and observers** through email, deadline: 2017-09-01. (Further explanation about roles is provided below.)
3. Online group discussion with three goals (2017-09-01 to 2017-11-30):
 - (1) Consensus building on which online forum platform to use.
 - (2) Consensus building on the length of chapters and the format.
 - (3) Consensus building on the first outline of the three courses – i.e. key content selections;

Phase II: Writing

4. Online group discussion: First draft of both textbook and teacher’s handbook writing by co-authors; (2017-12-01 to 2018-03-31)
5. The progress of the project will also be discussed as part of the IFSR Linz Conversation (2018-04-08 to 13)¹ as a special topic, as well as soliciting improvement suggestions from advisors;
6. Beta version of the courseware development (2018-04-14 to 2018-07-011);

Phase III: Reviewing and Reflecting

7. As many co-authors/advisors as possible gather at ISSS 2018 conference ²to finalize the first version;
8. IFSR-ISSS-IASCYS joint strategy for publicizing and distributing the curricula and materials;
9. Beta Test Delivery of the Curricula, sent out to all members in teaching positions, who might already be co-authors, advisors and observers of this project. Tailored use of any curriculum is permitted and encouraged.

Phase IV: Promoting, Using and Updating of the Curricula

10. Continuous Annual Updating for new versions starts through feedback and new contributions from all users.

¹ IFSR Conversation 2018, April 8 – 13), St. Magdalena, Linz, Austria , see <http://www.ifsr.org/index.php/call-for-topics-19th-ifsr-conversation-april-8-13-2017-linz-austria/> . Participation by invitation from the IFSR only!

² 62nd Annual Meeting of the International Society for the Systems Sciences “Innovation and Optimization in Nature and Design”, July 22 – 27, 2018, Oregon State University, Corvallis, Oregon USA

The Participants, Copyright and Ownership of the Product

Three categories of participants are:

- **Co-authors:** Committed to engage into continuous discussions and writing activities throughout the whole cycle of this project, on a weekly basis;
- **Advisors:** Committed to read all discussions, even if there is no time to contribute to each one. Committed to provide comments and suggestions to the project at least once a month. (Those who are already established authors in system sciences, those who are editors of existing/developing encyclopedias, those who are already teaching system sciences, but too busy to be our co-authors, are especially welcome to sign up as advisors.)
- **Observers:** Committed to read all discussions by remaining in our email list, and send in useful comments and suggestions at least twice a year.

Based on the four Open Space Principles, i.e.

- (1) Whoever comes are the right people, because they care about the need and the goal of this project;
- (2) Whatever happens is the only thing that could have happened, because we try our best;
- (3) Whenever it starts is the right time; that's why you received this invitation, and we hope you will join us;
- (4) When it's over, it's over. By this time next year, we can know if we are able to continue developing and improving this curriculum, or if it will be over.

The ownership and the copyright of the final products – the courseware – will be jointly owned by all co-authors as well as IFSR-ISSS-IASCYS. Details will be finalized later.

The Facilitator

Jason Jixuan Hu started learning the field in later 1970s directly from Professor Qian Xuesen (Hsue-Shen Tsien, Chinese: 钱学森; 1911 – 2009) during college years, implemented large scale System Dynamics Modeling in mid 1980s, and studied with Stuart Umpleby (as visiting scholar 1986-1988, as Ph.D. student 1990-1994). He started attending ASC conferences since 1987, publishing in *Cybernetics and Systems Journal* since 1988, and attending ISSS conferences since 1989. Dr. Hu taught system and cybernetics courses in George Washington University (Fall 1993), Peking University (Summer 1994), California State University Monterey Bay (1995-1996), Tsinghua University (Summer 1999). He also lectured and presented in numerous university seminars and international conferences and is an active member of ISSS and life-time member of ASC. He initialized CYBCOM listserv discussion group in 1993.

Dr. Hu has been trained as professional Technology of Participation (TOP®) facilitator by Institute of Cultural Affairs, served as China-Country-Representative of International Association of Facilitators, led the successful development and delivery of the WINTOP® Round-table Leadership Training Program (2003-2009). Dr. Hu currently is managing director of WINTOP Organizational Learning Laboratory, a research and educational partnership located at Phoenix, Arizona, USA. His CV is at <http://wintopgroup.com/team/jixuan/jjh-vita.pdf>